TECHNICAL CHARACTERISTICS - PRELIMINARY

SACE Tmax XT

Low voltage molded case circuit-breakers

Break new ground

- Data and connectivity
- Ease of use and installation
- Performance and protection
- Safety and reliability

SACE Tmax XT
The complete offering

Installation

Installation environment

Temperature

The Tmax XT circuit-breakers can be used in environmental conditions where the ambient air temperature varies between -25°C and +70°C, and can be stored at temperatures between -40 °C and +70 °C.
Circuit-breakers fitted with thermomagnetic trip units have their thermal element set for a reference temperature. For temperatures other than the reference, a trip threshold variation must be taken into account. Electronic trip units do not undergo any variations in performance as the temperature varies, but, in the case of temperatures exceeding +40°C, the maximum setting for protection L (protection against overloads) must be reduced, as indicated in the derating graph, to take into account the heating phenomena which occur in the copper parts of the circuit-breaker which the phase current passes through. For temperatures above +70°C the circuit-breaker performances are not guaranteed.

Environmental conditions

The Tmax XT circuit-breakers are designed to operate in environments with a pollution degree of 3 according to the IEC 60947-2 Standard classification.

Altitude
Up to an altitude of 2000m, the Tmax XT circuit-breakers do not undergo any alteration in their rated performances. As the altitude increases, the atmospheric properties are altered in terms of composition, dielectric resistance, cooling capacity and pressure. Therefore, some performance aspects of the circuit-breaker (e.g. the maximum rated operating voltage and the rated uninterrupted current) undergo derating.

Altitude		2000m	3000m	4000m	5000m
Rated service voltage, Ue	[V]	690	600	540	470
Rated uninterrupted current	%	100	98	93	90

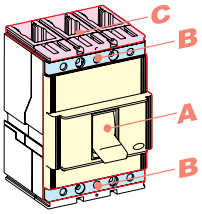
Shocks and vibrations

The Tmax XT circuit-breakers are unaffected by vibrations generated mechanically and due to electromagnetic effects, in compliance with the IEC 60068-2-6 Standards and the regulations of the major shipping registers including:
- RINA
- Det Norske Veritas
- Bureau Veritas
- Lloyd's Register of Shipping
- Germanischer Lloyd
- ABS
- Russian Maritime Register of Shipping
- Nippon Kaiji Kyokai.

The Tmax XT circuit-breakers are also tested according to the IEC 60068-2-27 Standard to resist shocks up to 12g for 11 ms.

Electromagnetic compatibility

Protection is guaranteed in the presence of interference caused by electronic apparatus, atmospheric disturbances or electrical discharges by using the electronic trip units and the electronic residual current releases. No interference with other electronic apparatus near the place of installation is generated either. This is in compliance with the IEC 60947-2 Annex B + Annex F Standards and European Directive No. 89/336 regarding EMC - electromagnetic compatibility.



Degrees of protection

The IP degree of the circuit-breaker can vary depending on the area considered and on the presence of accessories such as a motor or terminal cover.
The following table indicates the degrees of protection guaranteed by Tmax XT circuit-breakers according to the prescriptions of the IEC 60529 Standard, in the different configurations. Furthermore, special kits are available to achieve IP54 with the MOE or RHD installed on the XT7.

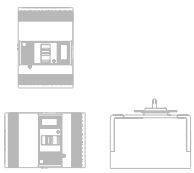
	With front	Without front	With FLD	With RHD	With RHE	Motor operator MOD, MOE or MOE-E	Residual current devices
A	IP40	IP20	IP40	IP40	IP54*	IP30	IP40

* XT7 : IP65

	Without TC	With HTC	With LTC
B	IP20	IP4	IP40
C	NC	IP40	IP30

	Residual current RCQ020	Automatic Transfer Switch ATS021, ATS022
On front	IP41	IP40

Protection kits for	RHE	RHD	MOE
XT1 , XT2 XT3,XT4	IP54	-	-
XT7, XT7 M	-	IP54	IP54



Installation position

It is possible to mount circuit-breakers in the fixed version in horizontal, vertical or lying down positions without any derating of the rated characteristics.

Temperature performance

Circuit-breakers with thermal-magnetic trip units

The circuit-breakers fitted with thermal-magnetic trip units have the thermal element set for a reference temperature of +40°C. With the same setting, for temperatures other than +40°C there is a variation in the thermal trip threshold as indicated in the tables below.

XT1

Ambient T (°C)	10		20		30		40		45		50		60		70	
In [A]	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**
16	13	18	12	18	11.9	17	11.2	16	10.8	15.5	11	15	10	14	9	13
20	16	23	15	22	14.7	21	14	20	13.6	19.4	13	19	12	18	11	16
25	20	29	19	28	18.2	26	17.5	25	16.9	24.2	16	23	15	22	14	20
32	26	37	25	35	23.8	34	22.4	32	21.7	31.0	21	30	20	28	18	26
40	32	46	31	44	29.4	42	28	40	27.1	38.7	27	38	25	35	23	33
50	40	58	39	55	37.1	53	35	50	33.9	48.4	33	47	31	44	28	41
63	51	72	49	69	46.2	66	44.1	63	42.7	61	41	59	39	55	36	51
80	64	92	62	88	58.8	84	56	80	54.2	77	53	75	49	70	46	65
100	81	115	77	110	73.5	105	70	100	67.8	97	66	94	61	88	57	81
125	101	144	96	138	91.7	131	87.5	125	84.7	121	82	117	77	109	71	102
160	129	184	123	176	117.6	168	112	160	108.4	155	105	150	98	140	91	130

XT2 with thermal-magnetic trip units

Ambient T (°C)	10		20		30		40		45		50		60		70	
In [A]	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**
1.6	1.3	1.8	1.2	1.8	1.2	1.7	1.1	1.6	1.1	1.5	1.1	1.5	1.0	1.4	0.9	1.3
2	1.6	2.3	1.5	2.2	1.5	2.2	1.4	2.0	1.3	1.9	1.3	1.9	1.2	1.7	1.1	1.6
2.5	2.0	2.9	1.9	2.8	1.8	2.6	1.8	2.5	1.7	2.4	1.6	2.3	1.5	2.2	1.4	2.0
3.2	2.5	3.6	2.5	3.5	2.5	3.5	2.0	3.2	2.0	3.0	2.0	2.8	1.8	2.6	1.6	2.3
4	3.2	4.6	3.1	4.4	2.9	4.2	2.8	4.0	2.7	3.9	2.6	3.7	2.5	3.5	2.2	3.2
5	4	5.7	3.9	5.5	3.7	5.3	3.5	5	3.4	4.8	3.3	4.7	3	4.3	2.8	4
6.3	5.0	7.2	4.9	6.9	4.6	6.6	4.4	6.3	4.2	6.1	4.1	5.9	3.9	5.5	3.6	5.1
8	6.4	9.2	6.2	8.8	5.9	8.4	5.6	8.0	5.4	7.7	5.3	7.5	4.9	7.0	4.6	6.5
10	8.1	11.5	7.7	11.0	7.4	10.5	7.0	10.0	6.7	9.6	6.5	9.3	6.1	8.7	5.7	8.1
12.5	10.1	14.4	9.7	13.8	9.2	13.2	8.8	12.5	8.4	12.0	8.2	11.7	7.6	10.9	7.1	10.1
16	13	18.0	12.0	18.0	11.9	17.0	11.2	16.0	10.8	15.4	10.5	15.0	9.8	14.0	9.1	13.0
20	16	23.0	15.4	22.0	14.7	21.0	14.0	20.0	13.5	19.3	13.3	19.0	11.9	17.0	11.2	16.0
25	20	29.0	19.6	28.0	18.2	26.0	17.5	25.0	16.8	24.0	16.1	23.0	15.4	22.0	14.0	20.0
32	26	37.0	24.5	35.0	23.8	34.0	22.4	32.0	21.6	30.8	21.0	30.0	19.6	28.0	18.2	26.0
40	32	46.0	30.8	44.0	29.4	42.0	28.0	40.0	27.0	38.5	25.9	37.0	24.5	35.0	22.4	32.0
50	40	57.0	38.5	55.0	37.1	53.0	35.0	50.0	33.7	48.2	32.9	47.0	30.1	43.0	28.0	40.0
63	50	72.0	48.3	69.0	46.2	66.0	44.1	63.0	42.5	60.7	41.3	59.0	38.5	55.0	35.7	51.0
80	64	92.0	61.6	88.0	58.8	84.0	56.0	80.0	54.0	77.1	52.5	75.0	49.0	70.0	45.5	65.0
100	81	115.0	77.0	110.0	73.5	105.0	70.0	100.0	67.5	96.4	65.1	93.0	60.9	87.0	56.7	81.0
125	101	144.0	96.6	138.0	92.4	132.0	87.5	125.0	84.3	120.5	81.9	117.0	76.3	109.0	70.7	101.0
160	129	184.0	123.0	178.0	117.6	168.0	112.0	160.0	107.9	154.2	105.0	150.0	97.3	139.0	94.5	135.0

XT3

Ambient T (°C)	10		20		30		40		45		50		60		70	
In [A]	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**	**MIN [A]**	**MAX [A]**
63	51	72	49	69	46	66	44	63	43	61	41	59	39	55	36	51
80	64	92	62	88	59	84	56	80	54	77	53	75	48	69	45	64
100	80	115	77	110	74	105	70	100	68	97	65	93	61	87	56	80
125	101	144	96	138	92	132	88	125	85	121	81	116	76	108	70	100
160	129	184	123	176	118	168	112	160	108	155	104	149	97	139	90	129
200	161	230	154	220	148	211	140	200	136	194	130	186	121	173	113	161
250	201	287	193	278	184	263	175	250	169	242	163	233	151	216	143.5	205

XT4 with thermal-magnetic trip units

Ambient T (°C)	10		20		30		40		45		50		60		70	
In [A]	**MIN[A]**	**MAX [A]**	**MIN[A]**	**MAX [A]**	**MIN[A]**	**MAX [A]**	**MIN[A]**	**MAX [A]**	**MIN[A]**	**MAX [A]**	**MIN[A]**	**MAX [A]**	**MIN[A]**	**MAX [A]**	**MIN[A]**	**MAX [A]**
16	13	19	13	18	12	17	11	16	11	15	10	14	9	13	8	12
20	19	27	17	24	16	23	14	20	14	19	12	17	11	15	9	13
25	21	30	20	28	19	27	18	25	17	24	16	23	15	21	13	19
32	26	43	24	39	25	36	22	32	22	31	19	27	17	24	15	21
40	33	48	32	45	30	43	28	40	27	39	26	37	24	34	21	30
50	37	62	35	58	38	54	35	50	34	48	32	46	29	42	27	39
63	53	75	50	71	47	67	44	63	43	61	41	58	37	53	33	48
80	59	98	55	92	60	86	56	80	54	77	52	74	46	66	41	58
100	83	118	79	113	74	106	70	100	68	97	67	95	60	85	53	75
125	102	145	100	140	94	134	88	125	85	121	81	115	74	105	67	95
160	130	185	123	176	118	168	112	160	108	155	105	150	96	137	91	130
200	161	230	154	220	147	210	140	200	136	194	133	190	123	175	112	160
225	188	269	179	255	168	241	158	225	152	218	146	208	133	190	119	170
250	200	285	193	275	183	262	175	250	169	242	168	240	161	230	154	220

Temperature performance

Circuit-breaker with magnetic only or electronic trip units and switch-disconnectors

The electronic overcurrent trip units do not undergo any variations in performance as the temperature varies. However, even though heating does not affect the trip thresholds of the electronic trip units, in the case of temperatures exceeding +40°C it is advisable to reduce the maximum L (protection against overloads) setting to protect the copper parts of the circuit-breaker against high temperatures.
The same considerations can be made for the switch-disconnectors and magnetic only circuit-breakers.
The table below shows the maximum value at which the threshold of I1 of the overcurrent protection (L) must be set according to the ambient temperature and for the type of terminals used.

				40°C	45°C	50°C	55°C	60°C	65°C	70°C
				Imax [A]	Imax [A]	Imax [A]	Imax [A]	Imax [A]	Imax [A]	Imax [A]
XT1	F	M-SD	F-EF-ES-FCCu-R	160		160		153		140
	P	M-SD	EF-HR/VR	**125**		117		108		100
XT2	F	M-ELT	F-FCCu	160		160		160		145
	P/W	M-ELT	EF-HR/VR	160		160		160		148
XT3	F	M-SD	F-FCCu	250		250		228		204
	P	M-SD	EF-HR/VR	**250**		222		196		170
XT4	F	M-ELT-SD	F-FCCu	250		250		238		213
	P/W	M-ELT-SD	EF-HR/VR	**250**		231		211		190
XT7 800A	F	ELT	F	800	800	800	800	800	750	700
			VR, ES, FCCuAl	800	800	800	800	800	778	755
			HR, EF	800	800	800	800	800	750	700
	W	ELT	EF, ES	800	800	800	766	730	693	653
			HR, SHR	800	800	800	800	800	750	700
			VR, Rear FCCuAl	800	800	800	800	800	759	716
XT7 1000A	F	ELT-SD	F	1000	1000	1000	971	942	885	827
			VR, ES, FCCuAl	1000	1000	1000	1000	949	885	894
			HR, EF	1000	1000	1000	971	942	885	827
	W	ELT-SD	EF, ES	1000	1000	961	920	877	832	784
			HR, SHR	1000	1000	1000	971	942	885	827
			VR, Rear FCCuAl	1000	1000	1000	1000	953	905	853
XT7 1250A	F	ELT-SD	F with 2x40x10	1250	1250	1250	1184	1118	1049	980
			F with 2x50x10	**1250**	1250	1250	1240	1182	1122	1057
			VR, ES, FCCuAl	**1250**	1250	1250	1250	1192	1131	1066
			HR, EF	**1250**	1250	1250	1184	1118	1049	980
	W	ELT-SD	EF, ES	**1250**	1205	1157	1108	1056	1002	945
			HR, SHR	**1250**	1250	1250	1184	1118	1049	980
			VR, Rear FCCuAl	**1250**	1250	1250	1250	1192	1131	1066
XT7 1600A	F	ELT-SD	F with 2x50x10	1400	1350	1296	1240	1183	1122	1058
			F with 3x50x10	**1600**	1541	1481	1417	1352	1281	1209
			VR, ES, FCCuAl	**1600**	1600	1537	1470	1403	1329	1255
			HR, EF	**1600**	1541	1481	1417	1352	1281	1209
	W	ELT-SD	EF, ES	**1400**	1350	1296	1240	1183	1122	1058
			HR, SHR	**1600**	1541	1481	1417	1352	1281	1209
			VR, Rear FCCuAl	**1600**	1600	1537	1470	1403	1329	1255

Power losses

To ensure service continuity of the plants, careful assessment of how to keep temperatures within acceptable levels to guarantee operation of all devices is necessary (e.g. by using forced ventilation in switchboards and installation rooms).
The table below shows the dissipated power values per single pole at the rated current In for each circuit-breaker used. The total maximum dissipated power for a circuit-breaker used at 50/60Hz is equal to the power per single pole multiplied by the number of poles.

Power [W/pole]	**In [A]**	**XT1**		**XT2**		**XT3**		**XT4**	
		F	**P**	**F**	**P/W**	**F**	**P**	**F**	**P/W**
Thermomagnetic or magnetic only trip unit: TMD TMA TMG MF MA	1.6			2.00	2.40				
	2			2.40	2.80				
	2.5			2.50	2.80				
	3.2			2.80	3.20				
	4			2.50	2.80				
	6.3			3.30	3.90				
	8			2.60	3.00				
	10			2.90	3.40			2.00	2.20
	12.5			1.00	1.20			2.30	2.40
	16	1.50	1.60	1.30	1.50			2.50	2.60
	20	1.80	2.00	1.60	1.90			2.60	2.70
	25	2.00	2.80	2.00	2.5			2.70	2.80
	32	2.10	3.20	2.60	3.00			4.40	4.50
	40	2.60	4.60	3.70	4.40			4.50	4.70
	50	3.70	5.00	4.10	4.70			4.70	4.90
	63	4.30	6.00	4.80	5.70	4.30	5.10	5.30	5.70
	80	4.80	7.20	5.80	6.80	4.80	5.80	5.50	6.10
	100	7.00	10.00	8.10	9.50	5.60	6.80	6.20	7.20
	125	10.70	14.70	11.40	14.00	6.60	7.90	7.40	9.00
	160	15.00		16.10	19.00	7.90	9.50	8.90	10.80
	200					13.20	15.80	11.90	14.90
	250					17.80	21.40	16.40	21.10
Electronic trip unit: Ekip Dip Ekip Touch	10			0.10	0.10				
	25			0.80	0.90				
	40							0.60	0,.70
	63			1.70	2.10			1.40	1.80
	100			4.20	5.20			3.50	4.50
	160			10.80	13.40			8.90	11.50
	250							16.40	22.70

Power losses gives indication of the heat generated under specified conditions. Measurement of power losses are perfomed according to Annex G of IEC (free air, on new samples). These values shall be assumed as average values.

Temperature performance

Power [W/pole]	In [A]	XT7- XT7 M	
		F	w
Ekip Dip Ekip Touch	800	24	35
	1000	37	55
	1250	57	86
	1600	94	141

Magnetic trip values

Breaker	Trip Unit	In [A]	I3 [A]	Single phase trip current (%I3) (1)
XT1	TMD	16..160	450..1600	150%
XT2	MF/MA	1..160	14..2240	150%
	TMD/TMA	1.6..160	16..1600	150%
	TMG	16..160	160..480	150%
	Ekip Dip LS/I	10..160	1..10xIn	100%
	Ekip Dip LIG	10..160	1..10xIn	100%
	Ekip Dip LSI	10..160	1..10xIn	100%
	Ekip Dip LSIG	10..160	1..10xIn	100%
	Ekip M Dip I		1..10xIn	100%
	Ekip M Dip LIU	25..160	6..13xIn	100%
	Ekip G Dip LS/I	10..160	1..10xIn	100%
	Ekip Touch LSI	16..160	1.5..10xIn	100%
	Ekip Touch LSIG	16..160	1.5..10xIn	100%
	Ekip Hi-Touch LSI	16..160	1.5..10xIn	100%
	Ekip Hi-Touch LSIG	16..160	1.5..10xIn	100%
	Ekip M Touch LRIU	16..160	1.5..10xIn	100%
XT3	MA	100..200	600..2400	150%
	TMD	63..250	630..2500	150%
	TMG	63..250	400..750	150%
XT4	MA	10..200	50..2000	150%
	TMA	16..250	300..2500	150%
	Ekip Dip LS/I	40..250	1..10xIn	100%
	Ekip Dip LIG	40..250	1..10xIn	100%
	Ekip Dip LSI	40..250	1..10xIn	100%
	Ekip Dip LSIG	40..250	1..10xIn	100%
	Ekip M Dip I		1..10xIn	100%
	Ekip M Dip LIU	40..160	6..13xIn	100%
	Ekip G Dip LS/I	40..250	1..10xIn	100%
	Ekip Touch LSI	40..250	1.5..10xIn	100%
	Ekip Touch LSIG	40..250	1.5..10xIn	100%
	Ekip Hi-Touch LSI	40..250	1.5..10xIn	100%
	Ekip Hi-Touch LSIG	40..250	1.5..10xIn	100%
	Ekip M Touch LRIU	40..250	1.5..10xIn	100%
XT7	Ekip Dip LS/I	320...1600	1...10xIn	100%
	Ekip Dip LIG	320...1600	1...10xIn	100%
	Ekip Dip LSI	320...1600	1...10xIn	100%
	Ekip Dip LSIG	320...1600	1...10xIn	100%
	Ekip M Dip I		1...10xIn	100%
	Ekip G Dip LS/I	320...1600	1...10xIn	100%
	Ekip Touch LSI	320...1600	1.5...10xIn	100%
	Ekip Touch LSIG	320...1600	1.5...10xIn	100%
	Ekip Hi-Touch LSI	320...1600	1.5...10xIn	100%
	Ekip Hi-Touch LSIG	320...1600	1.5...10xIn	100%
	Ekip M Touch LRIU	320...1600	1.5...10xIn	100%
	Ekip G Touch LSIG	320...1600	1.5...10xIn	100%
	Ekip G Hi-Touch LSIG	320...1600	1.5...10xIn	100%

(1) This satisfies the requirements of the IEC 60947-2 Standard, section 8.3.3.1.2.

Insulation distances

Clearances for installation in metallic cubicles

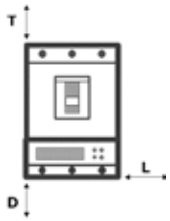
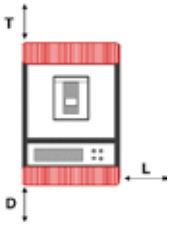
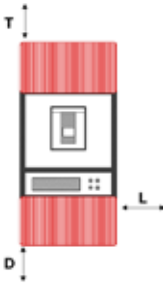
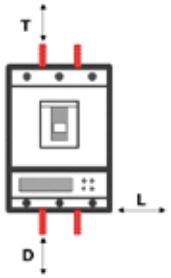
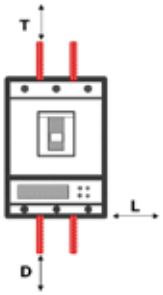
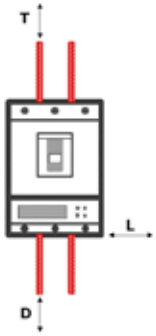
This section provides the compliance clearances for the installation of the circuit-breaker inside a metal cubicle.
The cubicle is the reference for the metallic parts of the switchgear assembly adjacent to the circuit-breaker and is used as a reference to define the clearances to be observed to permit the free evacuation of ionized gases and metal vapors and to prevent the ignition of adjacent parts. The clearances refer to the tests carried out in compliance with the IEC 60947-2 Standard.
The installation modality in relation to the type of circuit-breaker and the compulsory protections that must be used depending on the connection terminals is summarized in the tables below.
For further details about installation, please see the related instructions provided with the circuit-breaker.

		LTC	HTC	HTC-ES	PB 25mm	PB 100mm	PB 200mm
XT1	F	-	R	-	S	R	R
	EF	-	R	-	-	S	R
	ES	-	-	-	-	-	S
	FC Cu	-	R	-	S	R	R
	FC CuAl 1x1.5...70	-	R	-	S	R	R
	FC CuAl 1x35...95	-	S	-	-	-	-
	FB	-	R	-	S	R	R
	MC	-	S	-	-	-	-
	R	S	-	-	-	-	-
XT2	F	-	R	-	S	R	R
	EF	-	S	-	-	S	R
	ES	-	-	-	-	-	S
	FC Cu	-	R	-	S	R	R
	FC CuAl 1x1...95	-	R	-	S	R	R
	FC CuAl 1x70...185	-	S	-	-	-	-
	FC CuAl 2x35...70	-	S	-	-	-	-
	FB	-	R	-	S	R	R
	MC	-	S	-	-	-	-
	R	S	-	-	-	-	-
XT3	F	-	R	-	S	R	R
	EF	-	R	-	-	S	R
	ES	-	-	-	-	-	S
	FC Cu	-	R	-	S	R	R
	FC CuAl 1x35...150	-	R	-	S	R	R
	FC CuAl 1x95...185	-	R	-	S	R	R
	FC CuAl 2x35...120	-	S	-	-	-	-
	FB	-	R	-	S	R	R
	MC	-	S	-	-	-	-
	R	S	-	-	-	-	-

		LTC	HTC	HTC-ES	PB 25mm	PB 100mm	PB 200mm
XT4	F	-	R	-	S	R	R
	EF	-	S	-	-	S	R
	ES	-	-	-	-	-	S
	FC Cu	-	R	-	S	R	R
	FC CuAl 1x1...150	-	R	-	S	R	R
	FC CuAl 2x35...120	-	S	-	-	-	-
	FB	-	R	-	S	R	R
	MC	-	S	-	-	-	-
	R	S	-	-	-	-	-
XT7 **XT7 M**	F	R	R	-	-	R	R
	EF	-	R	-	-	S	R
	ES	-	-	R	-	-	S
	HR/VR	S	-	-	-	-	-
	FC CuAl 4x240	-	S	-	-	-	-
	FC CuAl 2x185...240	S	R	-	-	S	R

Insulation distances

Alternating Current (AC) Application

		No accessories			Low terminal cover (LTC)			High terminal cover (HTC)			Phase separators 25mm			Phase separators 100mm			Phase separators 200mm		
																			
		T	D	L	T	D	L	T	D	L	T	D	L	T	D	L	T	D	L
XT1	U < 440 V	*	*	*	25	20	20	10	5	20	0	0	20	0	0	20	0	0	20 (1)
	440 V ≤ U ≤ 500V	*	*	*	25	20	20	10	5	20	0	0	20	0	0	20	0	0	20 (1)
	500 V < U ≤ 690V	*	*	*	25	20	20	10	5	20	0	0	20	0	0	20	0	0	20 (1)
XT2	U < 440 V	*	*	*	30	25	10	20	15	10	5	0	10	0	0	10	0	0	10 (1)
	440 V ≤ U ≤ 500V	*	*	*	50	45	20	40	35	20	25	20	20	0	0	20	0	0	20 (1)
	500 V < U ≤ 690V	*	*	*	50	45	20	40	35	20	25	20	20	0	0	20	0	0	20 (1)
XT3	U < 440 V	*	*	*	50	20	20	45	15	20	25	0	20	0	0	20	0	0	20 (1)
	440 V ≤ U ≤ 500V	*	*	*	50	20	20	45	15	20	25	0	20	0	0	20	0	0	20 (1)
	500 V < U ≤ 690V	*	*	*	50	20	20	45	15	20	25	0	20	0	0	20	0	0	20 (1)
XT4	U < 440 V	*	*	*	30	25	10	25	20	10	5	0	10	0	0	10	0	0	10 (2)
	440 V ≤ U ≤ 500V	*	*	*	50	45	20	45	40	20	25	20	20	10	5	20	0	0	20 (2)
	500 V < U ≤ 690V	*	*	*	50	45	20	45	40	20	25	20	20	10	5	20	0	0	20 (2)
XT4X**	U ≤ 690V AC	*	*	*	100	100	50	80	80	50	75	75	50	50	50	50	0	0	20 (2)
XT7	U < 440 V	50	10	20	50	10	20	5	0	5	N/A	N/A	N/A	0	0	20	0	0	20 (1)
	440 V ≤ U ≤ 500V	100	10	20	100	10	20	40	10	5	N/A	N/A	N/A	50	0	20	0	0	20 (1)
	500 V < U ≤ 690V	100	10	20	100	10	20	40	10	5	N/A	N/A	N/A	50	0	20	0	0	20 (1)

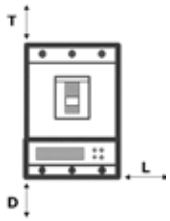
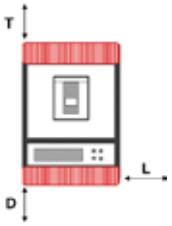
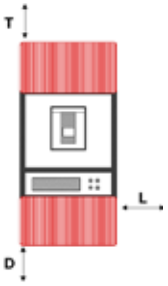
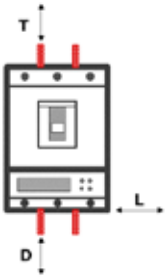
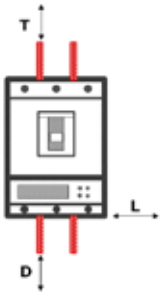
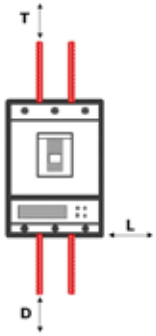
* Not allowed

** For details about allowed terminals configurations see XT4 instruction manual

(1) In case of ES terminals, this distance must be added to the maximum lateral dimension of the terminals

(2) In case of ES terminals, this distance must be 70 mm and must be added to the maximum lateral dimension of the terminals

Direct Current (DC) Application

		No accessories			Low terminal cover (LTC)			High terminal cover (HTC)			Phase separators 25mm			Phase separators 100mm			Phase separators 200mm		
																			
		T	D	L	T	D	L	T	D	L	T	D	L	T	D	L	T	D	L
XT1	U ≤ 250V	*	*	*	25	20	20	10	5	20	0	0	20	0	0	20	0	0	20 (1)
	250V < U ≤ 500V	*	*	*	25	20	20	10	5	20	0	0	20	0	0	20	0	0	20 (1)
XT2	U ≤ 250V	*	*	*	50	45	50	40	35	50	25	20	50	0	0	50	0	0	50 (1)
	250V < U ≤ 500V	*	*	*	50	45	50	40	35	50	25	20	50	0	0	50	0	0	50 (1)
XT3	U ≤ 250V	*	*	*	50	20	20	45	15	20	25	0	20	0	0	20	0	0	20 (1)
	250V < U ≤ 500V	*	*	*	50	20	20	45	15	20	25	0	20	0	0	20	0	0	20 (1)
XT4	U ≤ 250V	*	*	*	30	25	20	25	20	20	5	0	20	0	0	20	0	0	20 (2)
	250V < U ≤ 500V	*	*	*	50	45	50	45	40	50	25	20	50	10	5	50	0	0	50 (2)
XT4X**	U ≤ 500V	*	*	*	*	*	*	*	*	*	25	20	50	*	*	*	*	*	*
	500V < U ≤ 750V	*	*	*	*	*	*	*	*	*	75	75	50	*	*	*	*	*	*
XT7	U ≤ 500V	50	10	20	50	10	20	5	0	5	N/A	N/A	N/A	0	0	20	0	0	20 (1)
	500V < U ≤ 750V	100	10	20	100	10	20	30	10	5	N/A	N/A	N/A	50	0	20	0	0	20 (1)

* Not allowed
** Considered only FC CuAl with PB 25mm configuration
(1) In case of ES terminals, this distance must be added to the maximum lateral dimension of the terminals
(2) In case of ES terminals, this distance must be 70 mm and must be added to the maximum lateral dimension of the terminals

Insulation distances

Minimum clearance between two side by side circuit-breakers

This section gives the clearances to be observed for side by side installation of SACE Tmax XT circuit-breakers in plants with voltages up to 690V AC.
The following table show the minimum center distance between two circuit-breaker side by side. When side by side breakers are different in size, the larger reference clearance should be considered.
In case of Tmax XT1 up to XT4, the values are valid only when they have an HTC or a phase separator is inserted in the slot formed when placing the two fixed circuit-breakers side by side.

	Circuit-breaker width (mm)		Centre distance I (mm)	
	3 poles	**4 poles**	**3 poles**	**4 poles**
XT1	76	102	76 (1)	102 (1)
XT2	90	120	90 (1)	120 (1)
XT3	105	140	105	140
XT4	105	140	105 (1)	140 (1)
XT7	210	280	210	280

(1) with phases separators or HTC between two circuit-breakers (see Fig. 1 and Fig. 2)

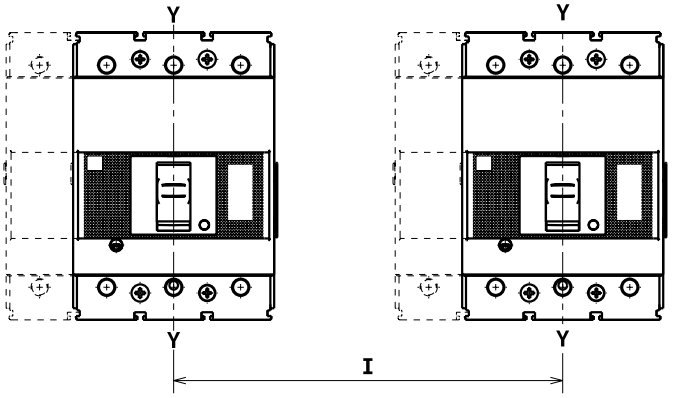


Fig. 1
Side by side XT1... XT4 with HTC

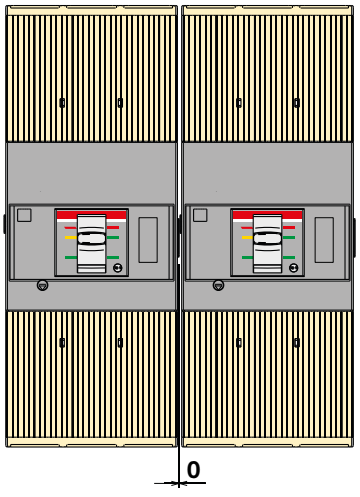


Fig. 1

Fig. 2
Side by side XT1...XT4 with phase separators

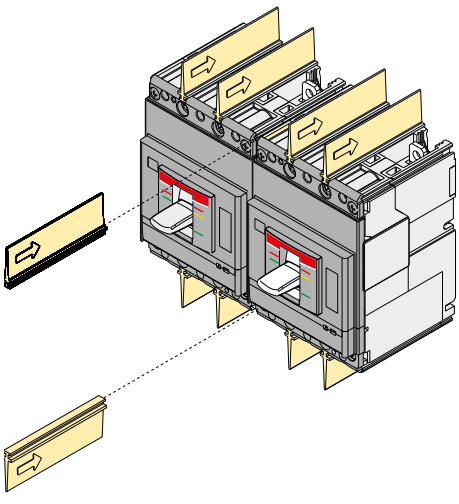
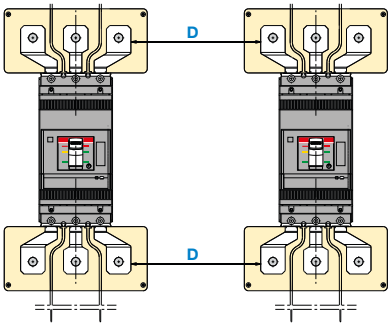
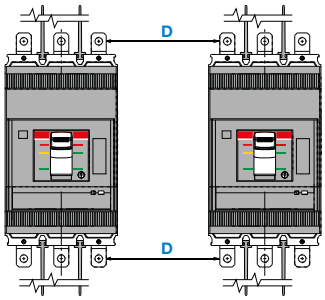
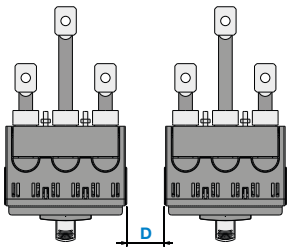


Fig. 2

If the conditions written above are not fulfilled, SACE Tmax XT circuit-breakers can be installed side by side with a minimum clearance D as shown in the following table:

Circuit-breaker	Terminals	D [mm]
XT1-XT3 F-P	ES	35
	EF	35
	Other types of terminals	25
XT2-XT4 F-P-W	ES	120
	EF	35
	Other types of terminals	25

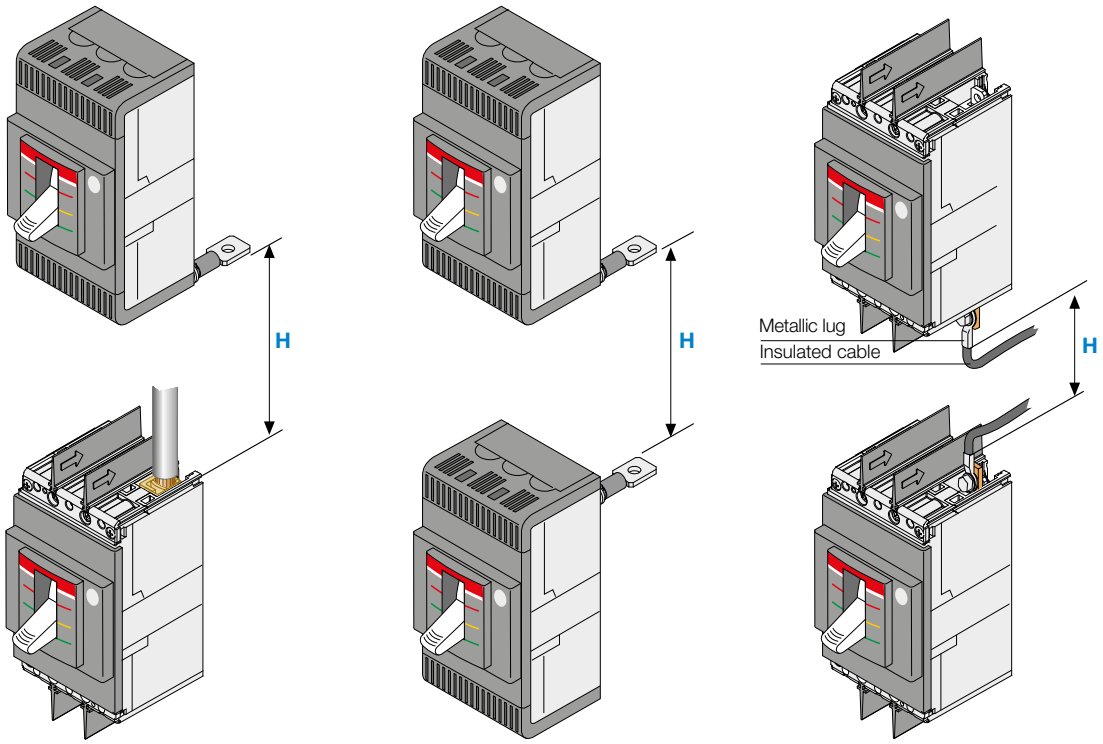
Circuit-breakers with front extended spread terminals ES	Circuit-breakers with front extended terminals EF	Adjustable rear terminals R and low terminal covers LTC
		

Insulation distances

Minimum clearance between two superimposed circuit-breakers

This section gives the clearances H to meet for superimposed mounting of the SACE Tmax XT circuit-breakers in installations with voltages up to 690Vac. Verify that the bare bars or connection cables do not reduce the recommended clearances.
The distances given in the table refer to the maximum overall dimensions of the circuit-breakers in the different versions (F/W/P), with terminals and metallic lugs of insulated cables included, for example.
When superimposed circuit-breakers are different in size, the larger reference clearance should be considered.

Circuit-breaker	H [mm]
XT1	80
XT2	100
XT3	140
XT4	150
XT7	180

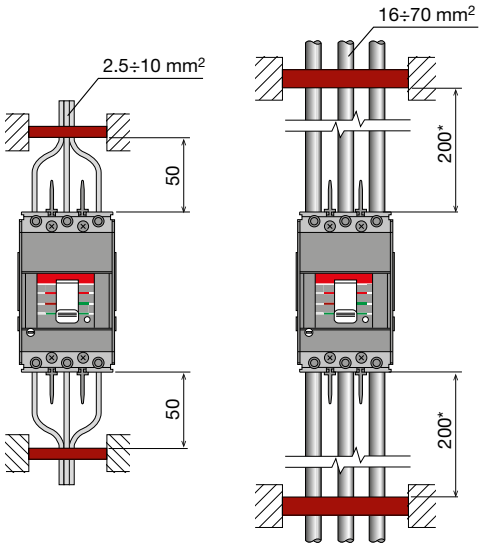


In case of cables with metallic lugs, an insulating screen behind the metallic lugs (on the rear of the circuit-breaker) or high terminal covers is mandatory.

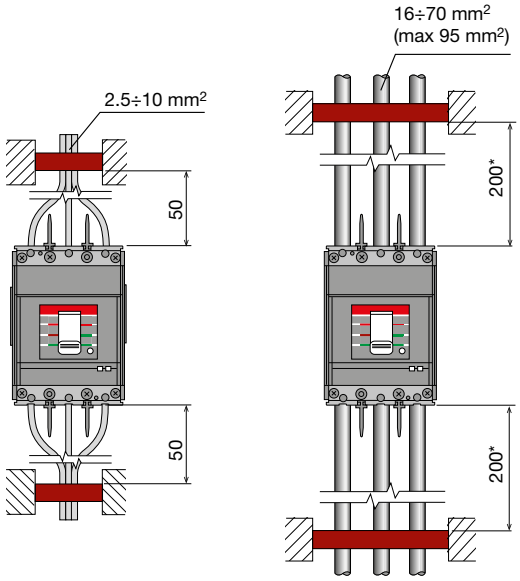
The first insulated anchor

For the Tmax XT molded-case circuit-breakers, the figure below gives an example of the maximum recommended distance (in mm) within which the first insulated anchor should be positioned according to the highest admissible peak current value of the circuit-breaker and according to the cross-sectional area of the cable.
The maximum recommended distance is also valid for busbar connections. For further information and details circuit-breaker instruction manuals should be consulted.

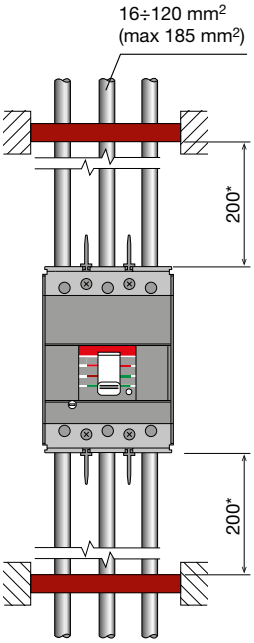
SACE Tmax XT1



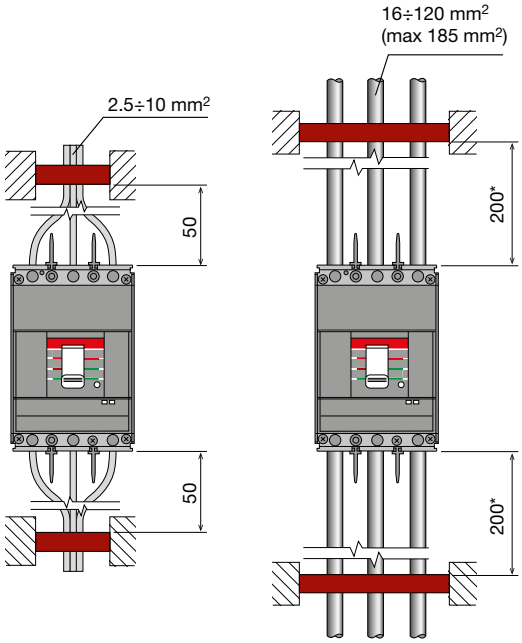
SACE Tmax XT2



SACE Tmax XT3



SACE Tmax XT4



Special applications

Use of apparatus at 400Hz

The circuit-breakers used for power distribution can operate in alternating current at different frequencies from 50/60Hz (reference frequencies for the rated performances of the apparatus) as long as the appropriate derating coefficients are applied.
At 400Hz, the performance of the circuit-breakers is reclassified to take the following phenomena into account:

- an increase in the skin effect and increased inductive reactance (which are directly proportional to the frequency) overheat the conductors or the copper components that normally carry the current in the circuit-breaker;
- lengthening of the hysteresis loop and reduction of the magnetic saturation value, which consequently varies the forces associated with the magnetic field at a given current value.

These phenomena influence the behaviour of both the thresholds of the thermal-magnetic trip units as well as the current carrying capacity of the circuit-breaker.
All the circuit-breakers in the SACE Tmax XT family equipped with thermal-magnetic or electronic Ekip Dip trip units (except for the Ekip M-I and Ekip M-LIU) can be used in 400Hz installations with the modifications described below.
The trip thresholds of the thermal components decrease as the frequency increases due to the reduced conductivity of the materials and to the increase in the associated thermal phenomena.
Vice versa, the magnetic thresholds (I3) increase in accordance to Km multiplication factor, due to induced magnetic fields. The circuit-breakers with electronic trip units do not undergo any changes of the trip thresholds, but the maximum current carrying capacity may be reduced.
The following tables refer to circuit-breakers with a breaking capacity up to 36kA for the XT1, XT2, XT3 and XT4.

XT1 160 - TMF/TMD 16÷100 A

XT1B 160 **XT1C 160** **XT1N 160**		**I1 (400Hz)**			**I3**		
	In	**MIN**	**MED**	**MAX**	**I3 (50Hz)**	**km**	**I3 (400Hz)**
	16	10	12	14	450	2	900
	20	13	15	18	450	2	900
	25	16	20	23	450	2	900
	32	20	25	29	450	2	900
	40	25	31	36	450	2	900
	50	32	38	45	500	2	1000
	63	40	48	57	630	2	1260
	80	50	61	72	800	2	1600
	100	63	77	90	1000	2	2000

XT2 160 - TMD/TMA 1.6÷100 A

XT2N 160		I1 (400Hz)			I3		
	In	MIN	MED	MAX	I3 (50Hz)	km	I3 (400Hz)
	1.6	1	1.2	1.4	16	1.2	19.2
	2	1.3	1.5	1.8	20	1.2	24
	2.5	1.6	2	2.3	25	1.2	30
	3.2	2	2.5	2.9	32	1.2	38.4
	4	2.5	3.1	3.6	40	1.2	48
	5	3.2	3.8	4.5	50	1.2	60
	6.3	4	4.8	5.7	63	1.2	75.6
	8	5	6.1	7.2	80	1.2	96
	10	6.3	7.7	9	100	1.2	120
	12.5	7.9	9.6	11.3	125	1.2	150
	16	10	12	14	300	1.2	360
	20	13	15	18	300	1.2	360
	25	16	20	23	300	1.2	360
	32	20	25	29	320	1.2	384
	40	25	31	36	300...400	1.2	360...480
	50	32	38	45	300...500	1.2	360...600
	63	40	48	57	300...630	1.2	360...756
	80	50	61	72	400...800	1.2	480...960
	100	63	77	90	500...1000	1.2	600...1200

XT3 250 - TMD/TMA 63÷160 A

XT3N 250		I1 (400Hz)			I3		
	In	MIN	MED	MAX	I3 (50Hz)	km	I3 (400Hz)
	63	40	48	57	630	2	1260
	80	50	61	72	800	2	1600
	100	63	77	90	1000	2	2000
	125	79	96	113	1250	2	2500
	160	101	122	144	1600	2	3200

XT4 160 - TMD/TMA 16÷160 A

XT4N 160		I1 (400Hz)			I3		
	In	MIN	MED	MAX	I3 (50Hz)	km	I3 (400Hz)
	16	10	12	14	300	1.2	360
	20	13	15	18	300	1.2	360
	25	16	20	23	300	1.2	360
	32	20	25	29	320	1.2	384
	40	25	31	36	300...400	1.2	360...480
	50	32	38	45	300...500	1.2	360...600
	63	40	48	57	315...630	1.2	378...756
	80	50	61	72	400...800	1.2	480...960
	100	63	77	90	500...1000	1.2	600...1200
	125	79	96	113	625...1250	1.2	750...2400
	160	101	122	144	800...1600	1.2	960...1920

Special applications

XT2 160 - Ekip trip units 10÷100 A*

XT2N 160		I1 (400Hz)
	In	MAX
	10	10
	25	25
	63	63
	100	100
	160	125

* Not valid for the Ekip Touch, Ekip M-I, Ekip M-LIU and Ekip M-LRIU trip units

XT4 250 - Ekip trip units 160÷200 A*

XT4N 250		I1 (400Hz)
	In	MAX
	250	200

* Not valid for the Ekip Touch, Ekip M-I, Ekip M-LIU and Ekip M-LRIU trip units

XT4 160 - Ekip trip units 40÷160 A*

XT4N 160		I1 (400Hz)
	In	MAX
	40	40
	63	63
	100	100
	160	160

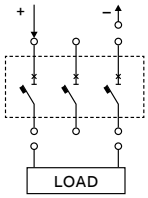
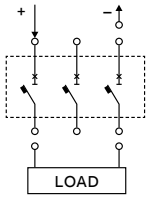
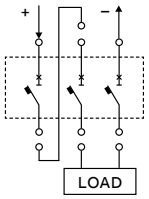
* Not valid for the Ekip Touch, Ekip M-I, Ekip M-LIU and Ekip M-LRIU trip units

Use of direct current apparatus

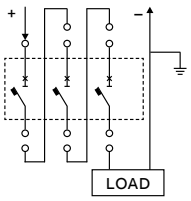
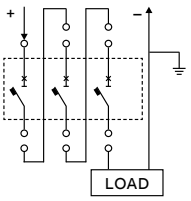
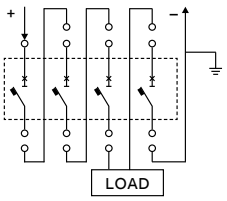
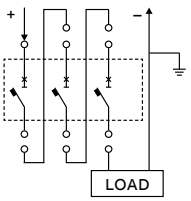
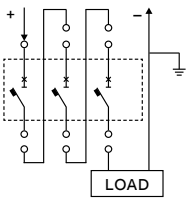
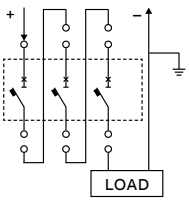
Variation in magnetic tripping

The thermal-magnetic trip units of the SACE Tmax XT circuit-breakers are suitable for use in direct current applications. For the protection thresholds against short-circuits, correction values (Km) must be used, according to the type of distribution network and to the number of poles to be connected in series (the thermal threshold does not undergo any alteration).
The correction value to be used can be found in the following tables.

Connection diagrams of poles in an insulated network

Insulated network			
Un	**≤250**	**≤500**	
Protection + insulation function			
XT1	1.3	-	-
XT2	1.3	-	1.15
XT3	1.3	-	1.15
XT4	1.3	1.3	-

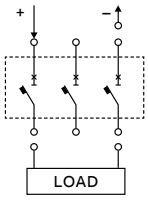
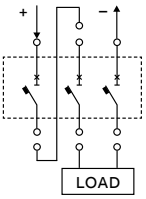
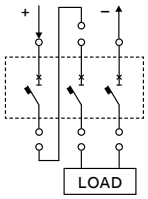
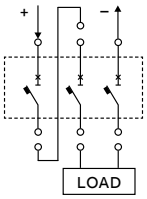
Connection diagrams of poles in a network with one grounded polarity

Network with one grounded polarity			
Un	**≤250**	**≤500**	
Protection + insulation function			
Protection function			
XT1	1	-	-
XT2	1.15	-	1.15
XT3	1.15	-	1.15
XT4	1.15	1.15	-

Note: in the considered connections, the earthed polarity is the negative one.

Special applications

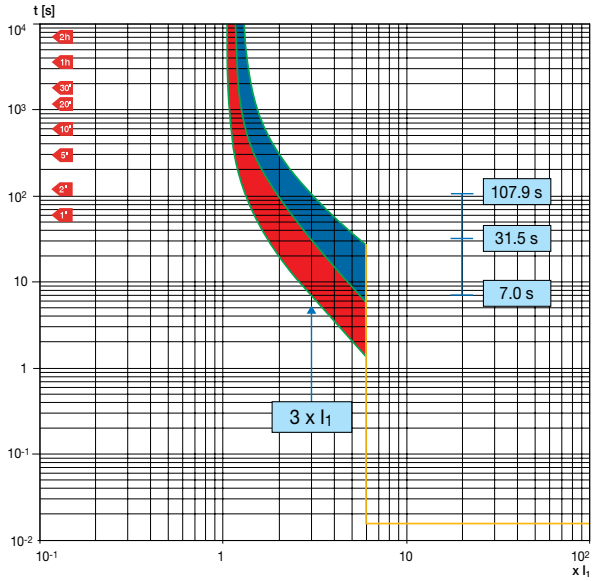
Connection diagrams of poles in switch-disconnectors

Switch-disconnectors				
Un	**≤250**	**≤500**		**≤750**
Protection + insulation function				
XT1	■	■	-	-
XT3	■	■	-	-
XT4	■	■	-	-
XT7	■	■	■	■

Characteristic curves
Example of curves reading

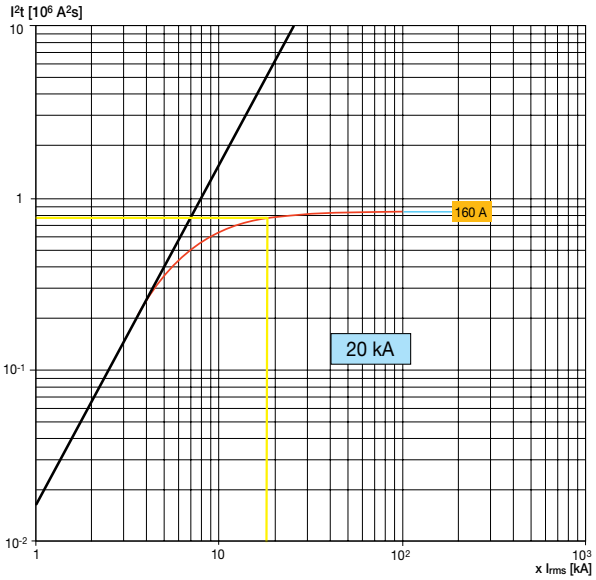
Example 1 - XT3N 250
Trip curves for distribution - (thermal magnetic trip unit)

Let us consider an XT3N 250 TMD In=250 A circuit-breaker. The trip time of the thermal protection varies considerably depending on the conditions when the overload occurs, i.e. whether the circuit-breakers is at the thermal regime (either cold or hot trip conditions). For example, for an overload current $3xI_1$, the trip time ranges from 107.9 s to 31.5 s for cold tripping and from 31.5 s to 7.0 s for hot tripping. For fault current values higher than 2500 A, the circuit-breaker trips with the instantaneous magnetic protection I_3.



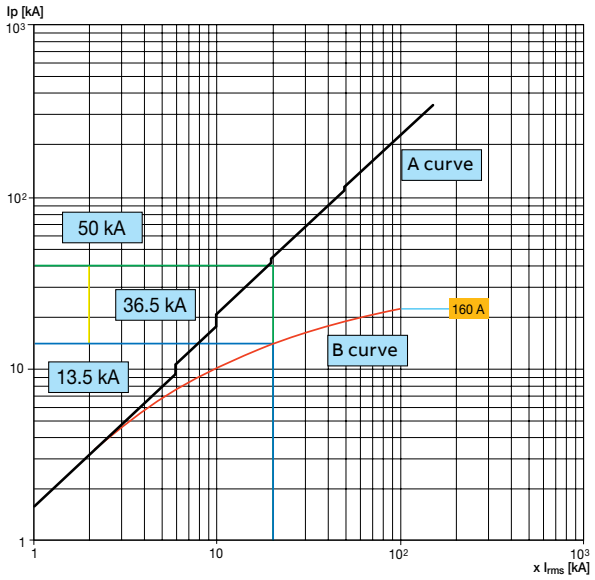
Example 2 - XT2N 160
Specific let-through energy curves

The following figure shows an example of the graph of the specific let-through energy of the XT2N 160 In=160A circuit-breaker at 220/230V. The prospective symmetrical short-circuit current is indicated on the abscissas, whereas the values of the specific let-through energy expressed in A^2s are shown on the ordinate.
The circuit-breaker lets through a value of I^2t equal to 0.76 · 10^6 · A^2s in correspondence with a short-circuit current of 20 kA.



Characteristic curves
Example of curves reading

Example 3 - XT2N 160
Limitation curves
The figure below gives the trend of the limitation curves of the XT2N 160 In=160 A circuit-breaker. The effective value of the prospective symmetrical short-circuit current is given on the abscissa of the graph, whereas the peak value of the short-circuit current is indicated on the ordinate.
The limiting effect can be evaluated by comparing the peak value corresponding to the prospective short-circuit current (curve A) with the peak limited value (curve B), at the same value of symmetrical short-circuit current.

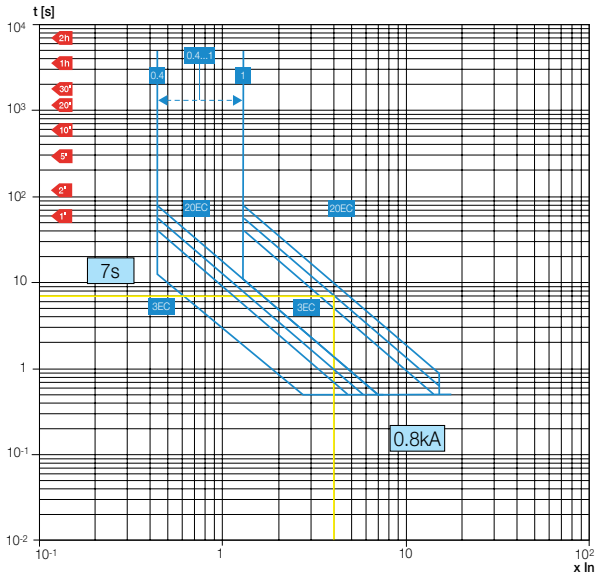


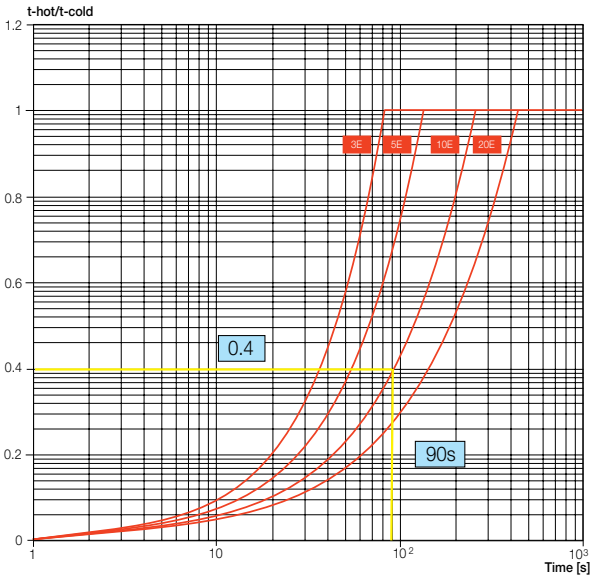
For a fault current of 20 kA, the XT2N 160 circuit-breaker with a thermal magnetic trip unit In =160 A limits the peak prospective short-circuit current to 13.5 kA at a voltage of 500 V, with a reduction of 36.5 kA in relation to the peak value of the prospective short-circuit current.

Example 4 - XT4N 250 Ekip M-LIU
Cold trip / hot trip curves

The first curve shows the time of intervention of the trip unit in case of fault under cold conditions. Each curve is related to a single operating class defined by Standard IEC 60947-4-1 (3E, 5E, 10E or 10E). The second curve, hot trip, must be read in relation with the previous one. Considering the time the circuit-breaker has remained open after the first trip (t-off on the abscissa), the t-hot/t-cold ratio can be identified on the ordinate.

Once the cold trip time has been identified on the first graph in relation to a fault current, the hot trip time can be calculated on the second graph, based on t-off and class of intervention. For a XT4N 250 In=200A in the operating class 10E, given a fault current of 0.8kA (4xIn), the cold trip time for intervention is 7s. If we consider a t_{off} = 90s, t-hot/t-cold = 0.4, the hot trip time results 2.8s.



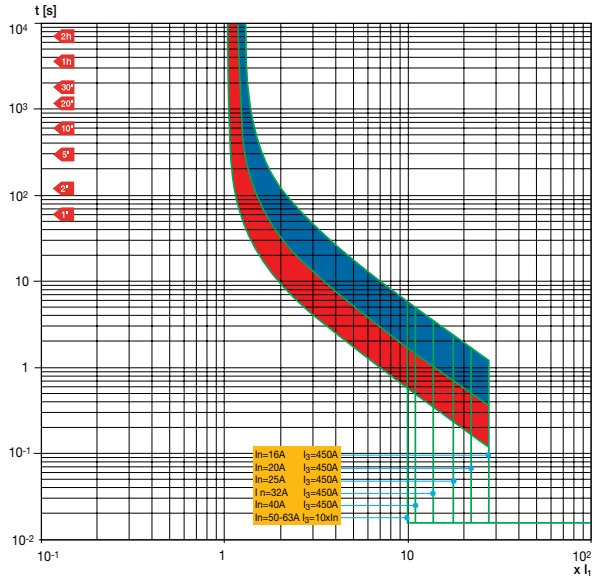


Characteristic curves

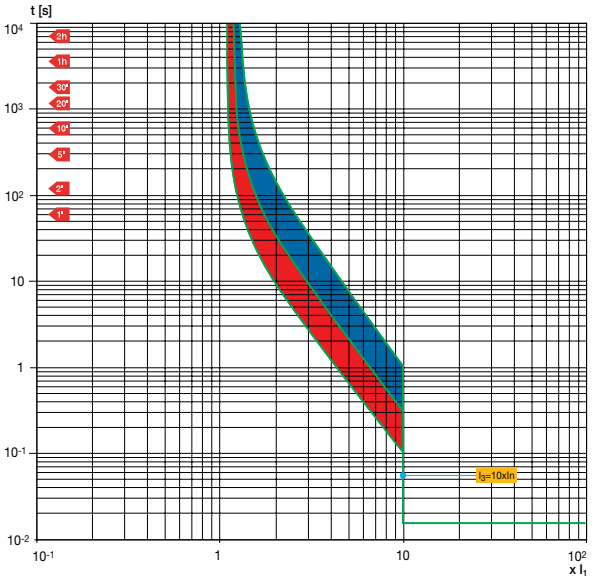
Trip curves with thermal magnetic trip unit

Trip curves for distribution

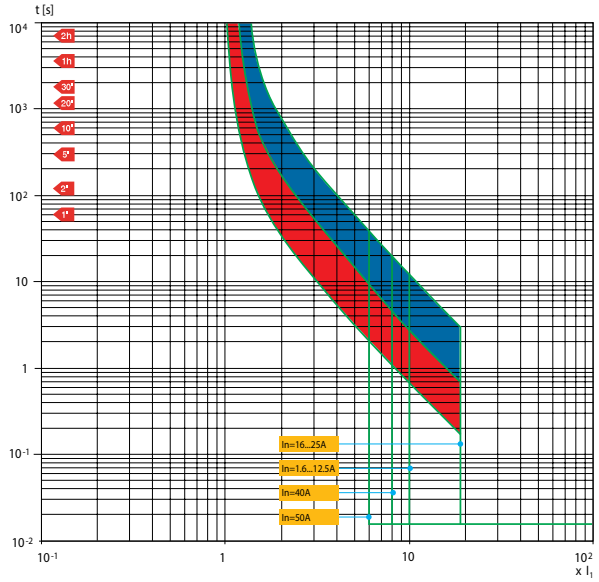
XT1 160 TMD In=16...63A



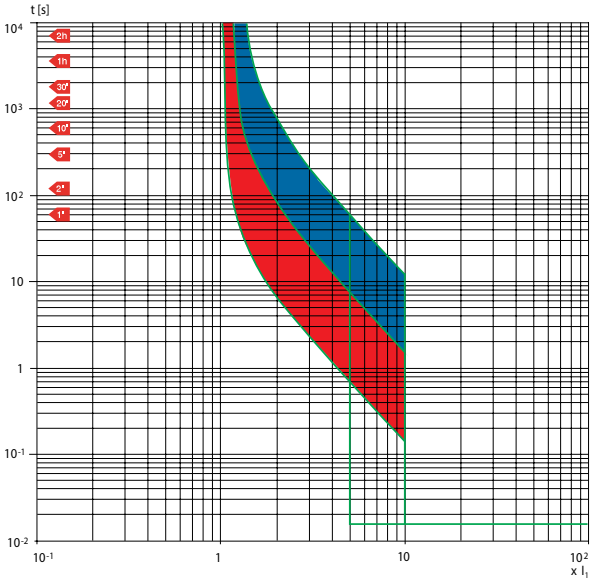
XT1 160 TMD In=80...160A



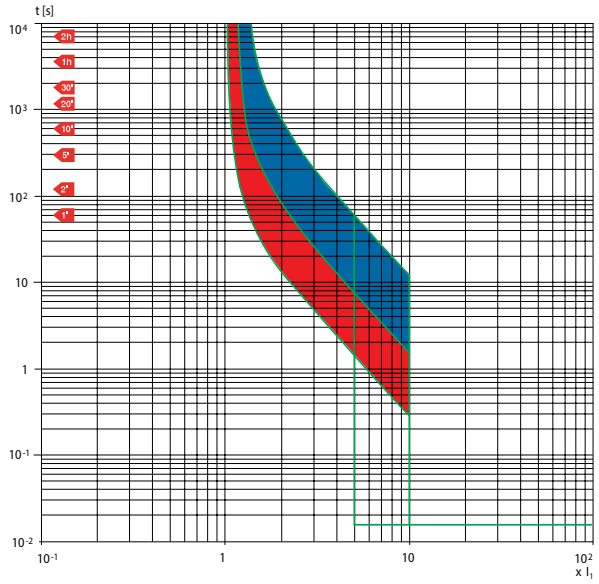
XT2 160 TMA In=1.6...50A



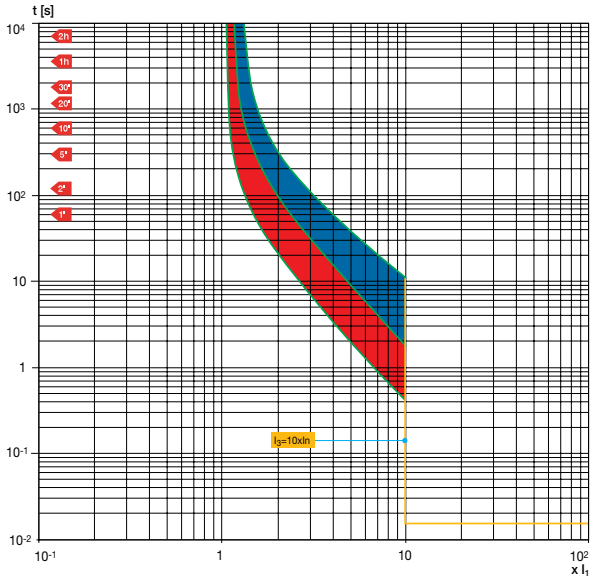
XT2 160 TMA In=63...160A



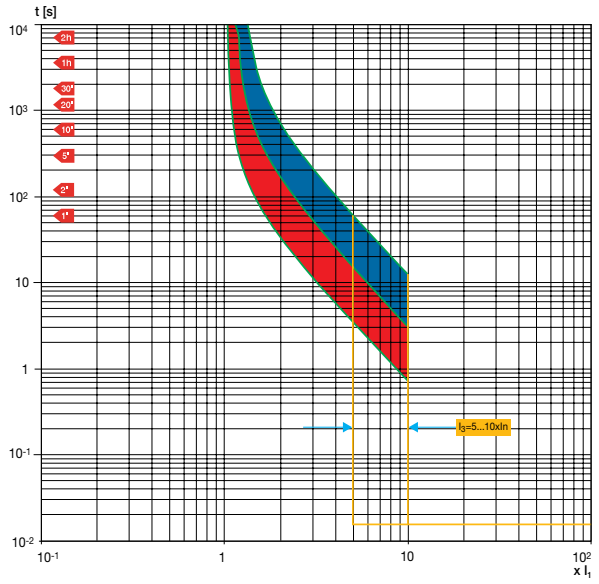
XT2 160 TMA In=100A



XT3 250 TMD In=63...250A



XT4 250 TMA In=16...250A

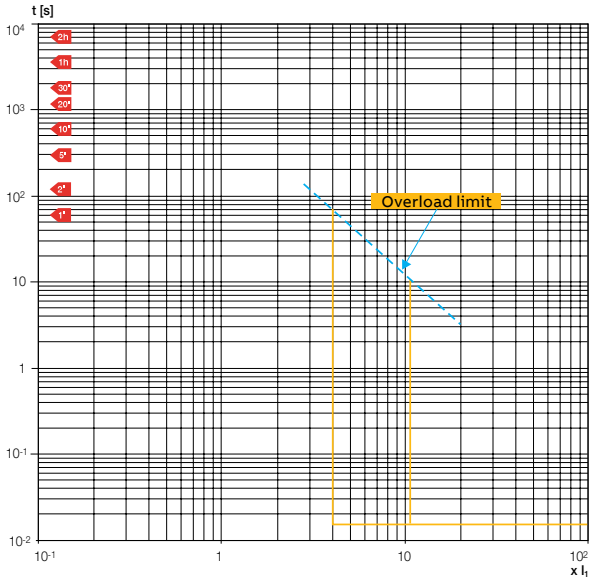


Characteristic curves

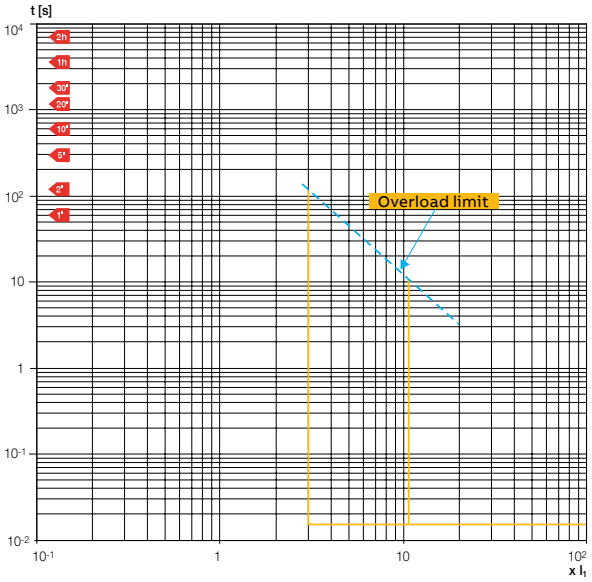
Trip curves with thermal magnetic trip unit

Trip curves for motor protection

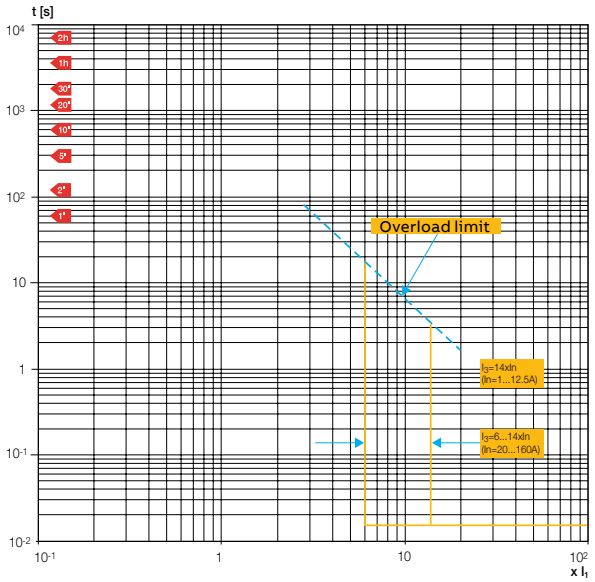
XT1 125 MA In=3.2...6.3A



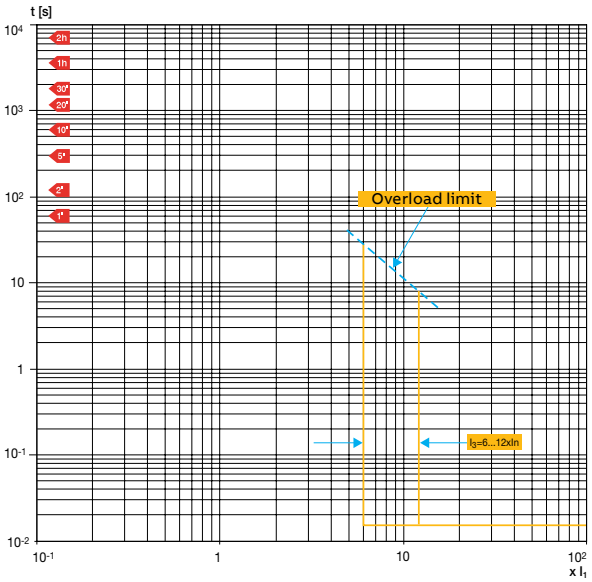
XT1 125 MA In=16...125A



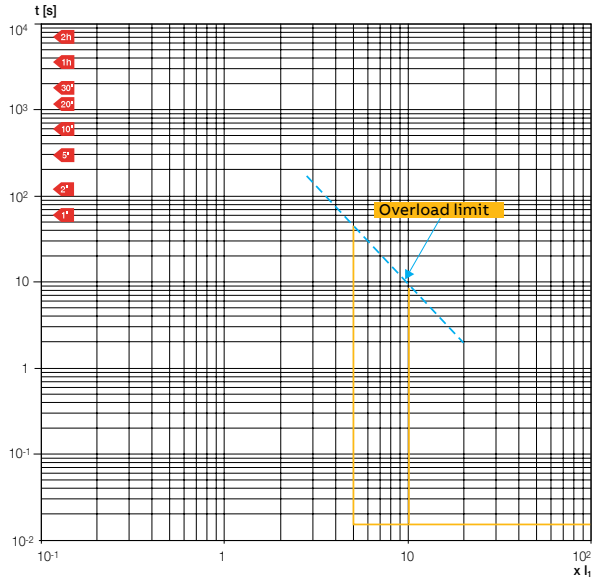
XT2 160 MF/MA In=1...160A



XT3 250 MA In=100...250A



XT4 200 MA In=10...200A

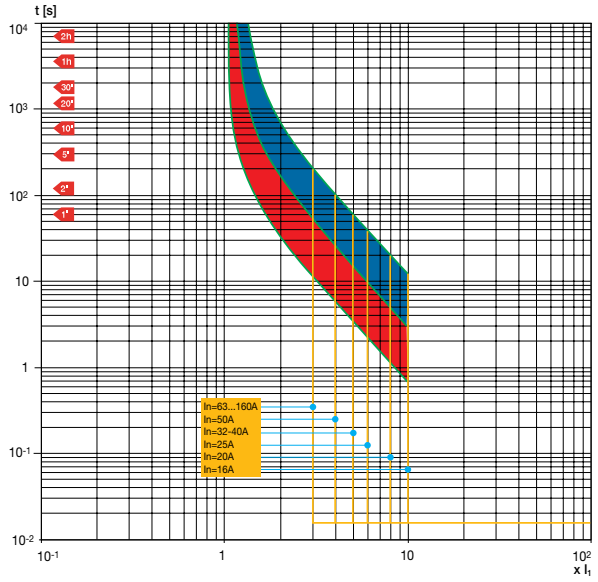


Characteristic curves

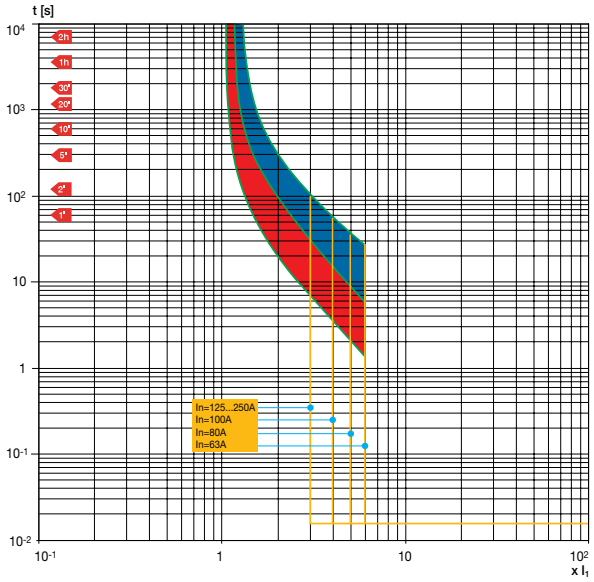
Trip curves with thermal magnetic trip unit

Trip curves for generator protection

XT2 160 TMG In=16...160A



XT3 250 TMG In=63...250A

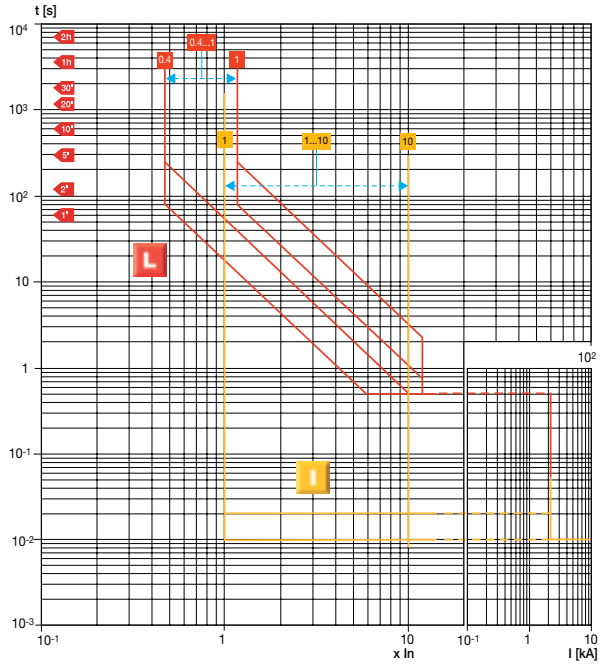


Characteristic curves

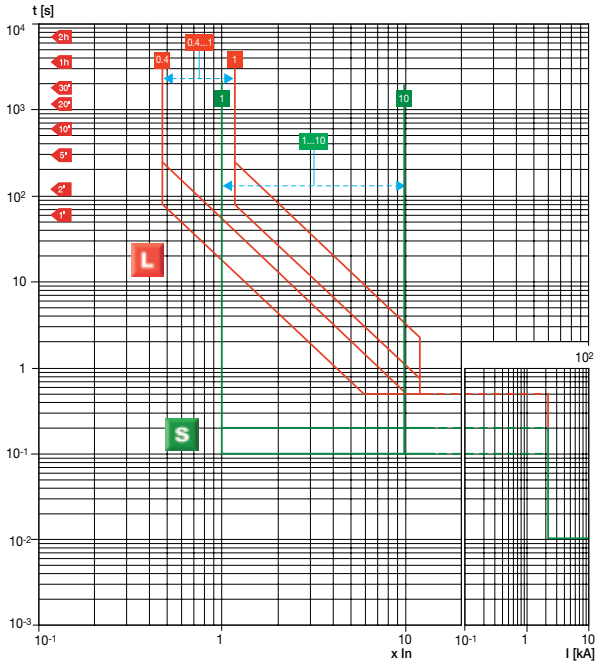
Trip curves with electronic trip unit Ekip Dip

Trip curves for distribution

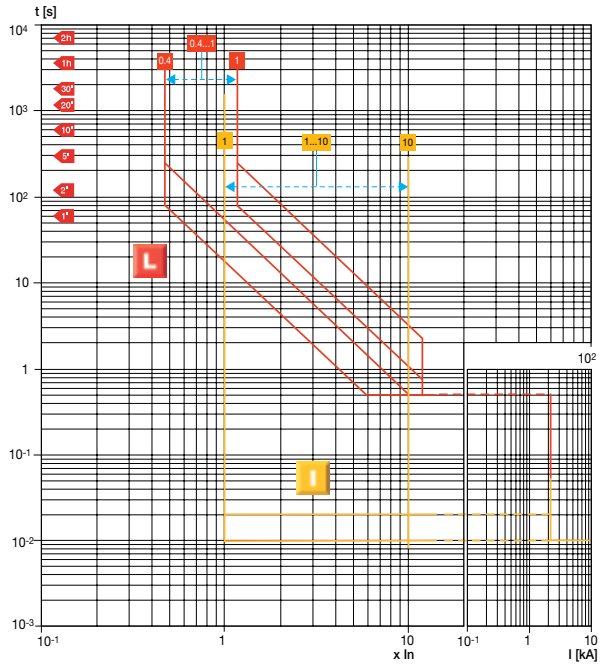
XT2 Ekip LS/I
L-I functions



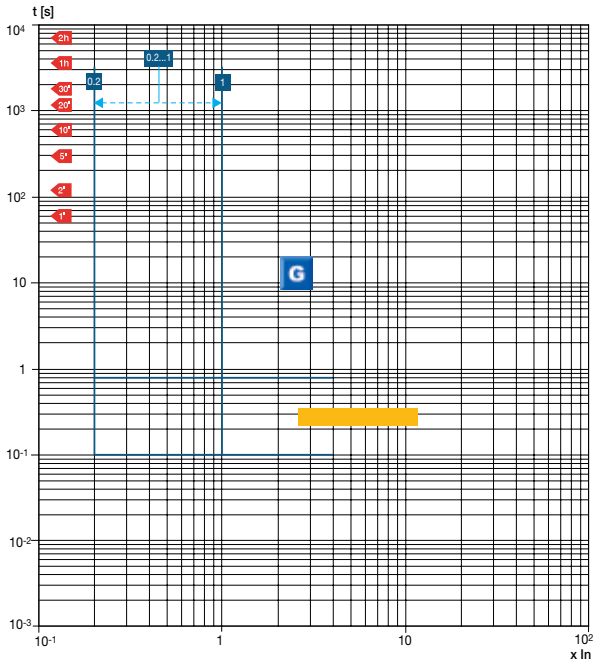
XT2 Ekip LS/I
L-S functions



XT2 Ekip LIG
L-I functions



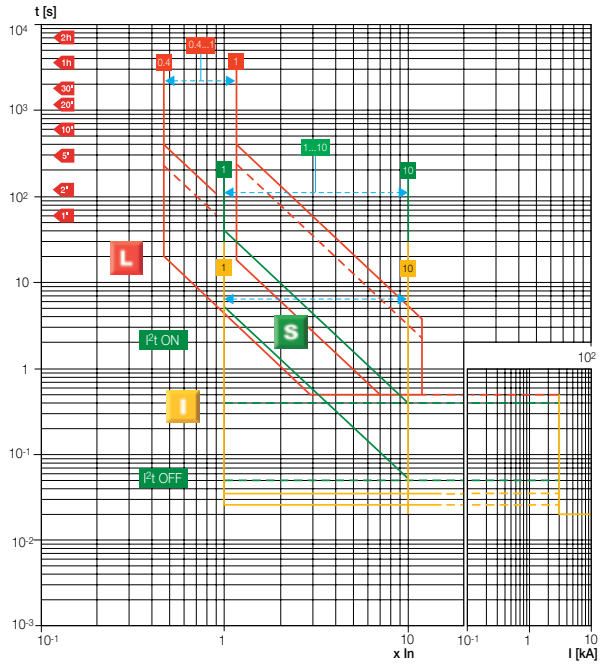
XT2 Ekip LIG
G function



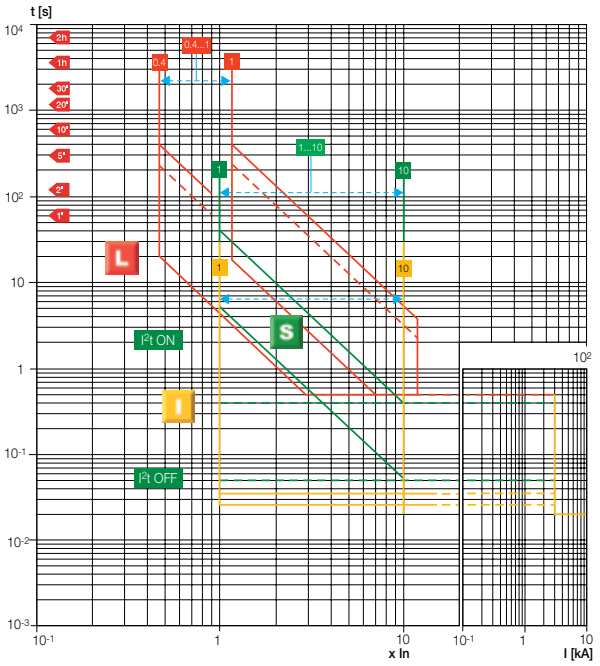
Characteristic curves

Trip curves with electronic trip unit Ekip Dip

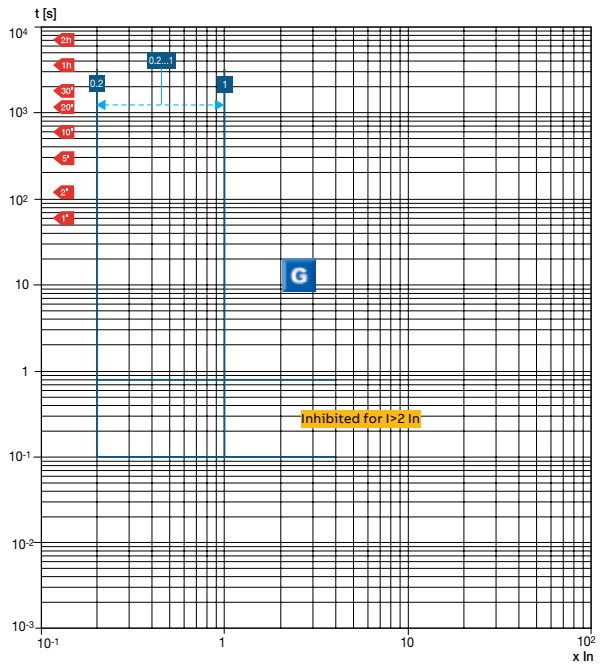
XT2 Ekip LSI
L-S-I functions



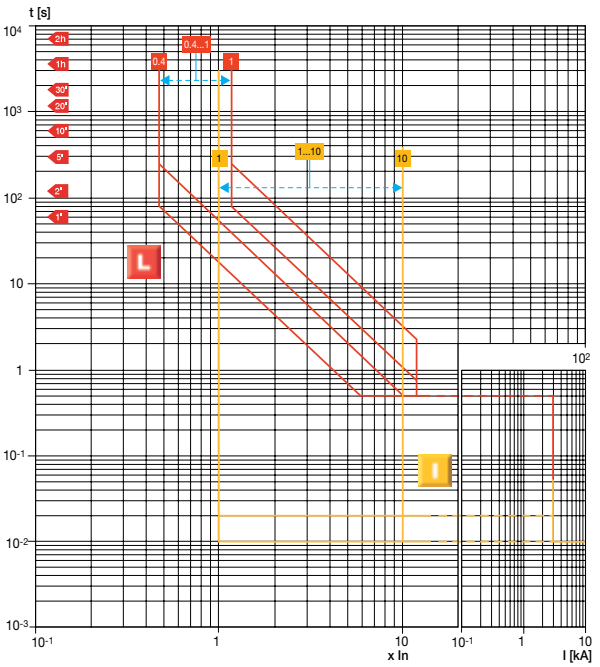
XT2 Ekip LSIG
L-S-I functions



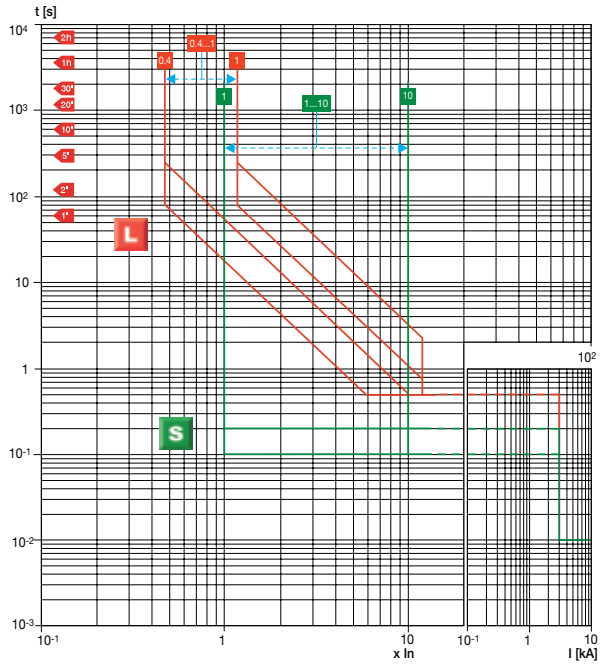
XT2 Ekip LSIG
G function



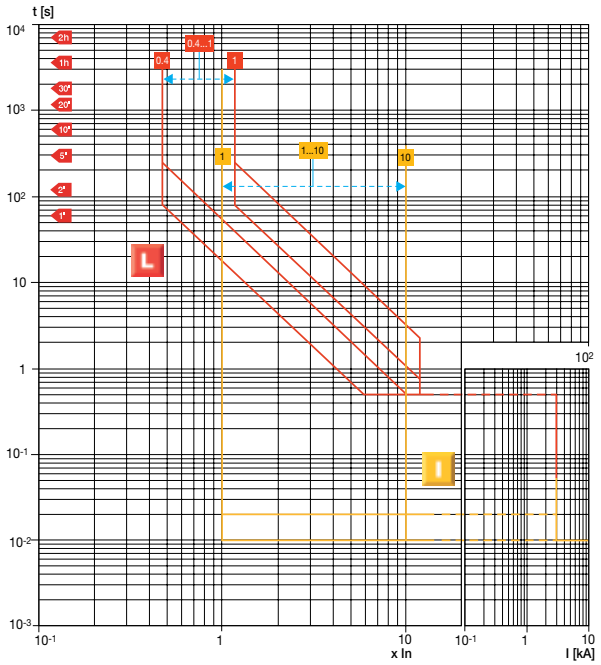
XT4 Ekip LS/I
L-I functions



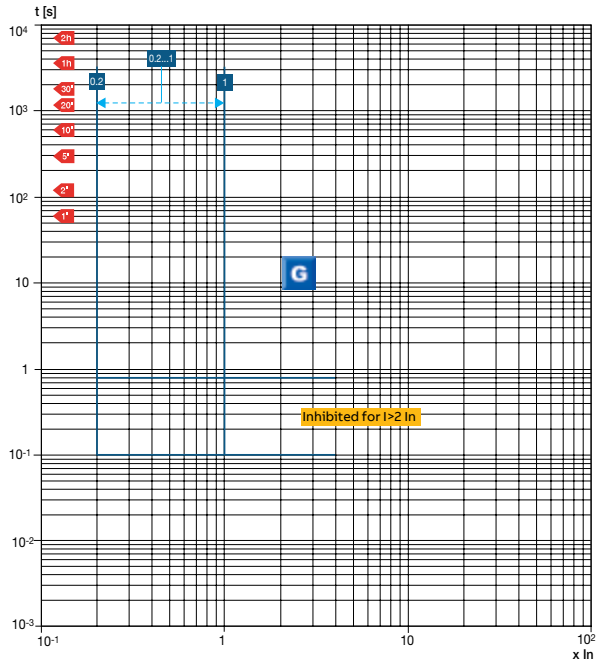
XT4 Ekip LS/I
L-S functions



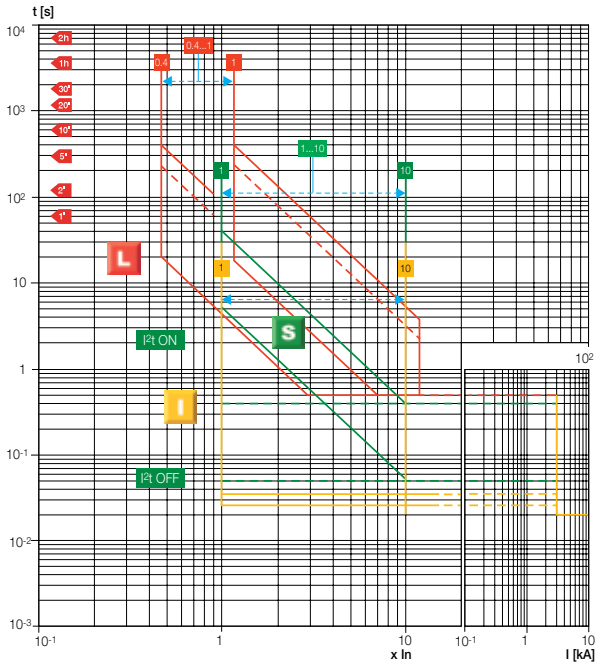
XT4 Ekip LIG
L-I functions



XT4 Ekip LIG
G function



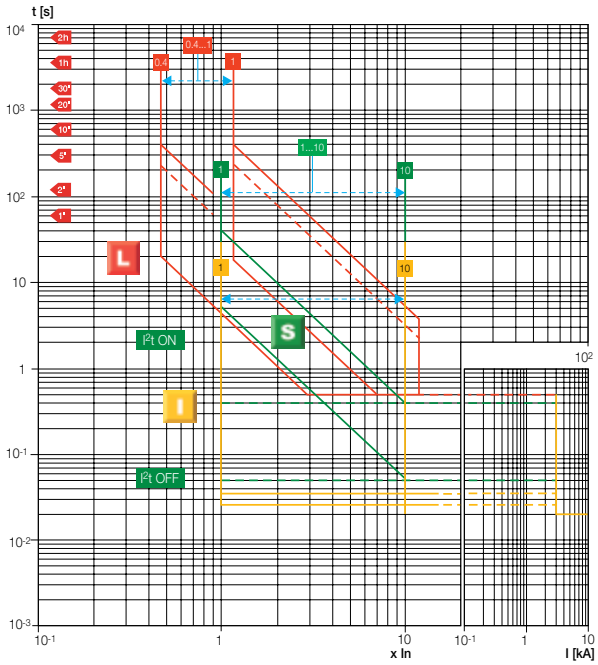
XT4 Ekip LSI
L-S-I functions



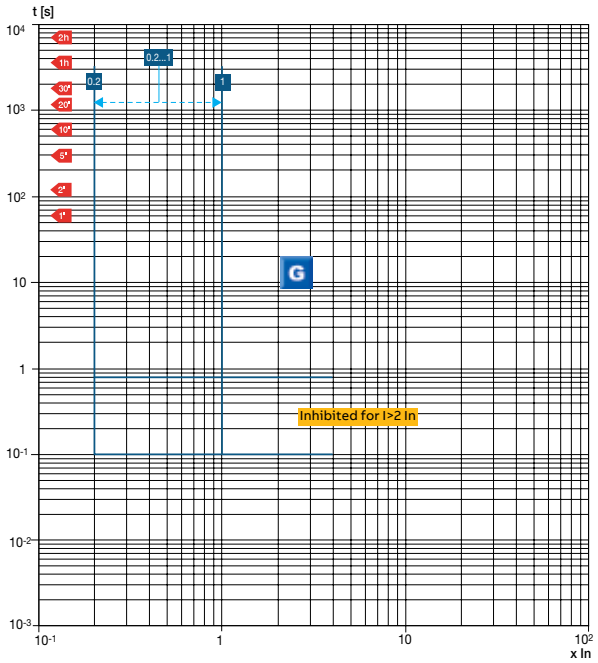
Characteristic curves

Trip curves with electronic trip unit Ekip Dip

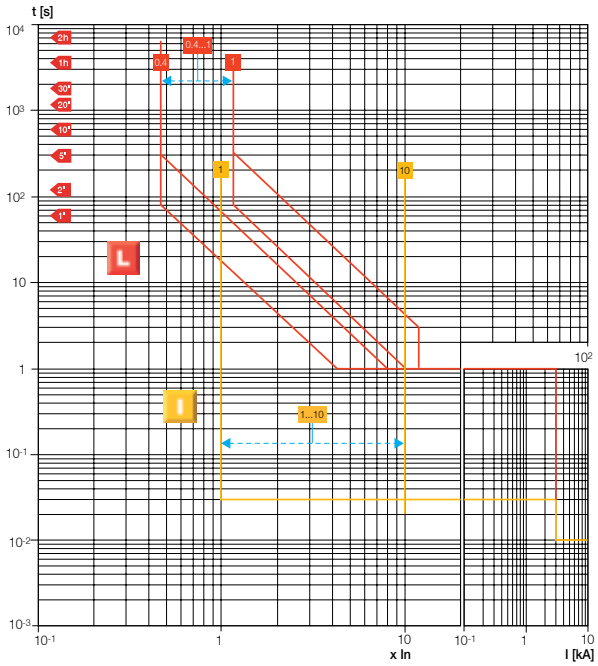
XT4 Ekip LSIG, Ekip E-LSIG
L-S-I functions



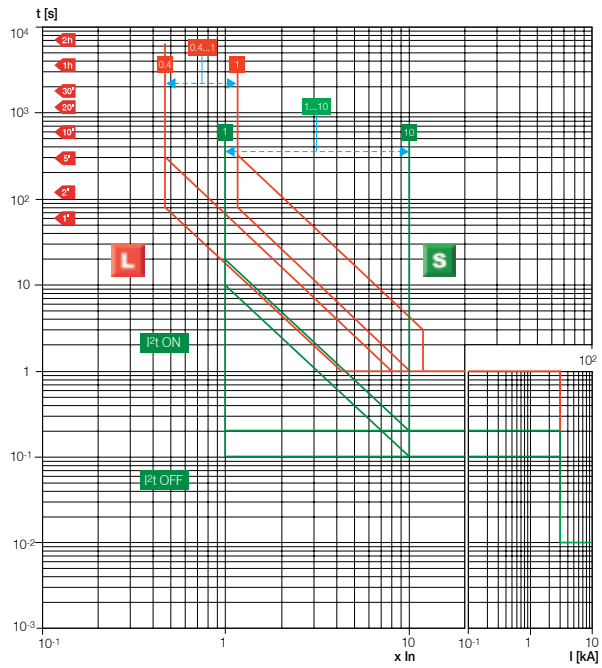
XT4 Ekip LSIG, Ekip E-LSIG
G function



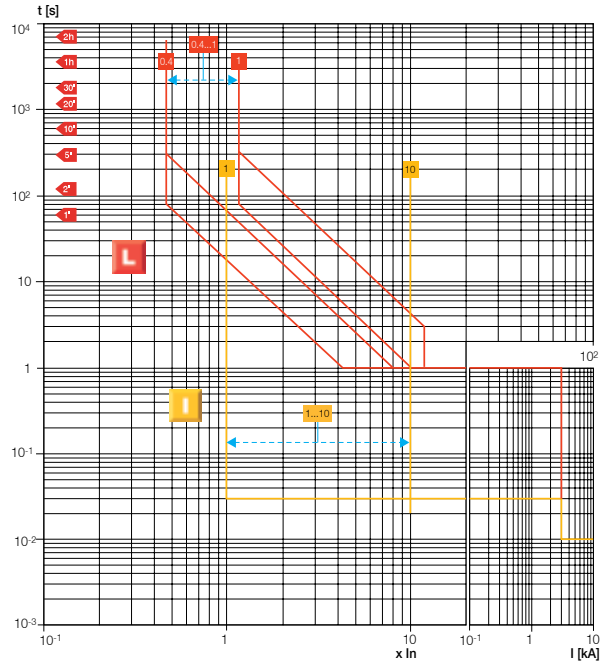
XT7 - XT7 M Ekip Dip LS/I
L-I functions



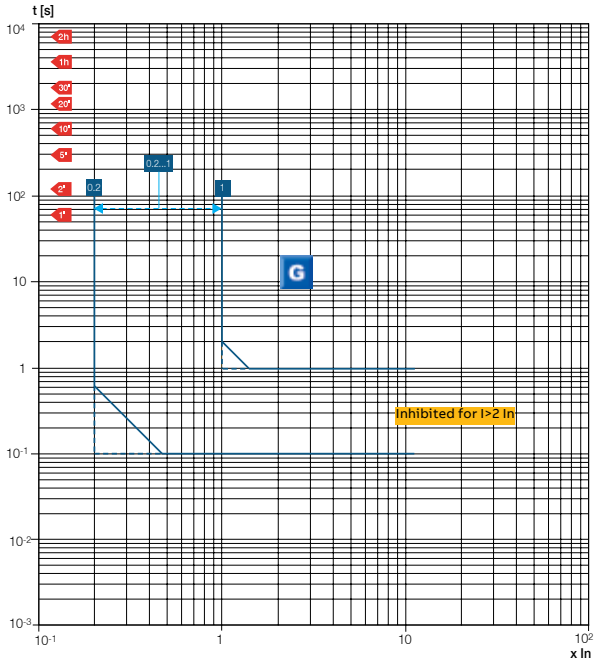
XT7 - XT7 M Ekip Dip LS/I
L-S functions



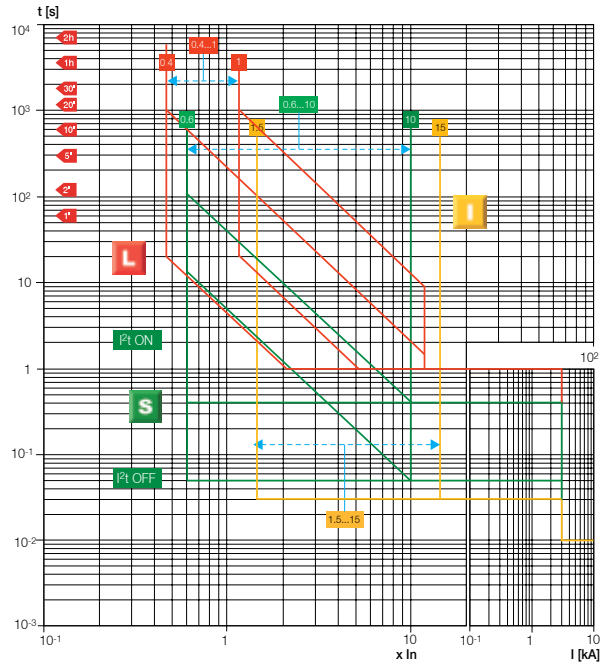
XT7 - XT7 M Ekip Dip LIG
L-I functions



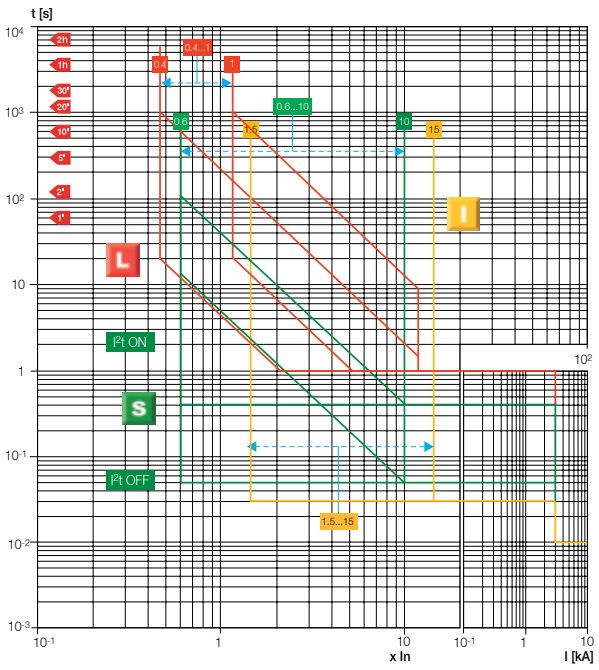
XT7 - XT7 M Ekip Dip LIG
G function



XT7 - XT7 M Ekip Dip LSI
L-S-I functions



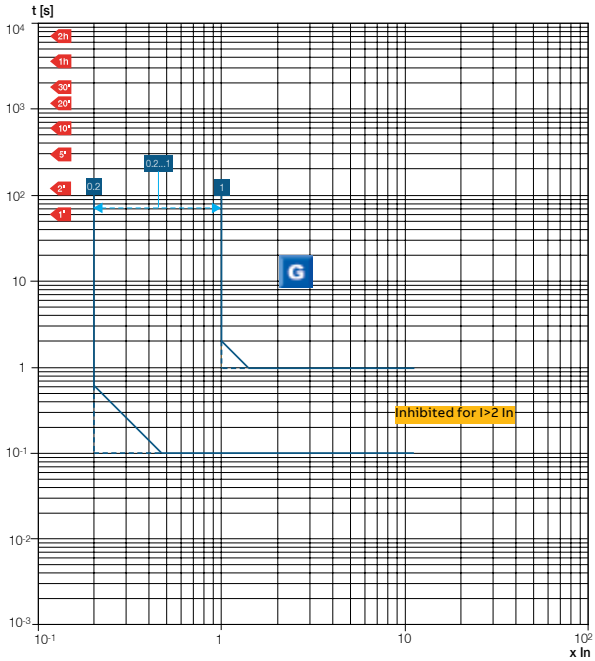
XT7 - XT7 M Ekip Dip LSIG
L-S-I functions



Characteristic curves

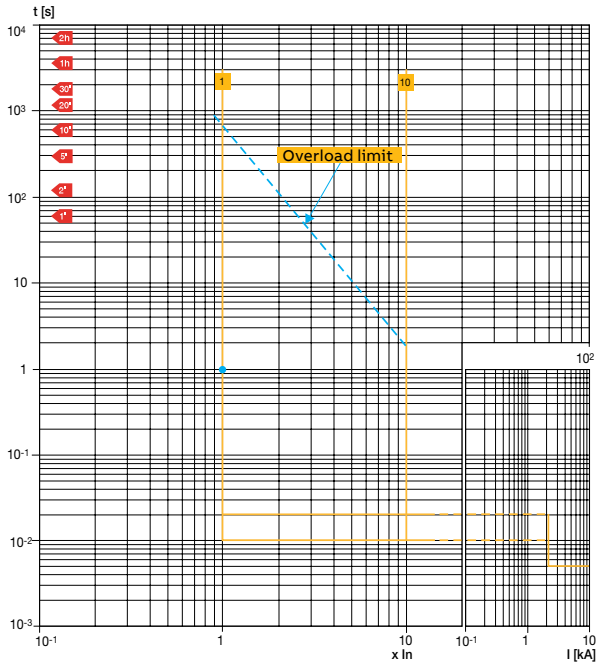
Trip curves with electronic trip unit Ekip Dip

XT7 - XT7 M Ekip Dip LSIG
G function

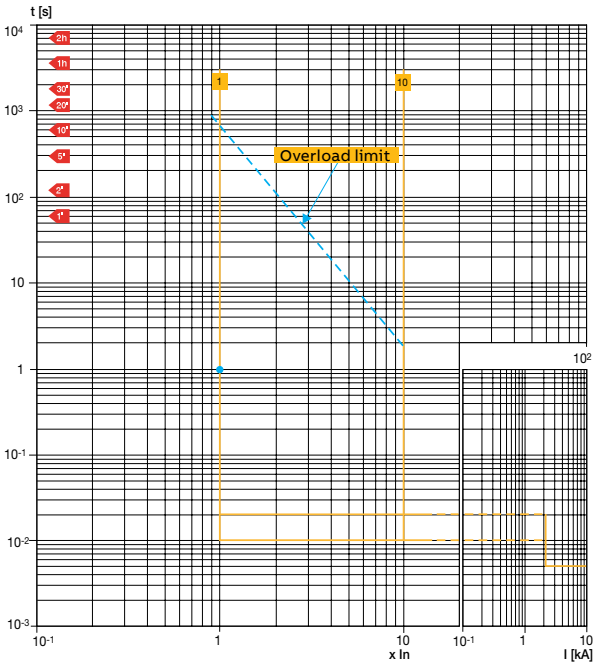


Trip curves for motor protection

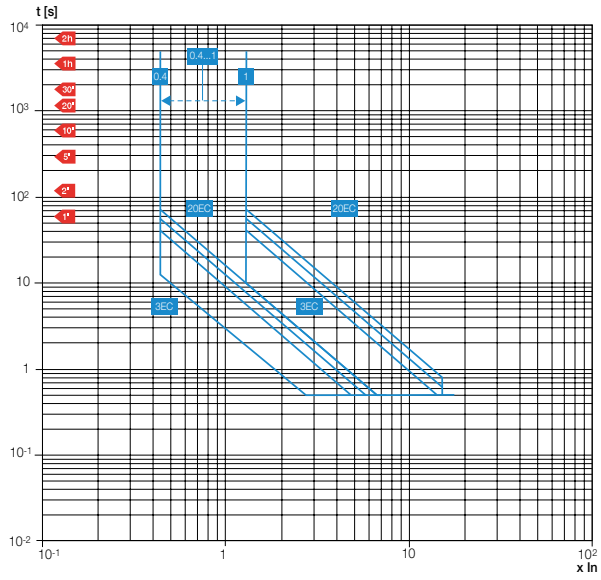
XT2 Ekip I
I function



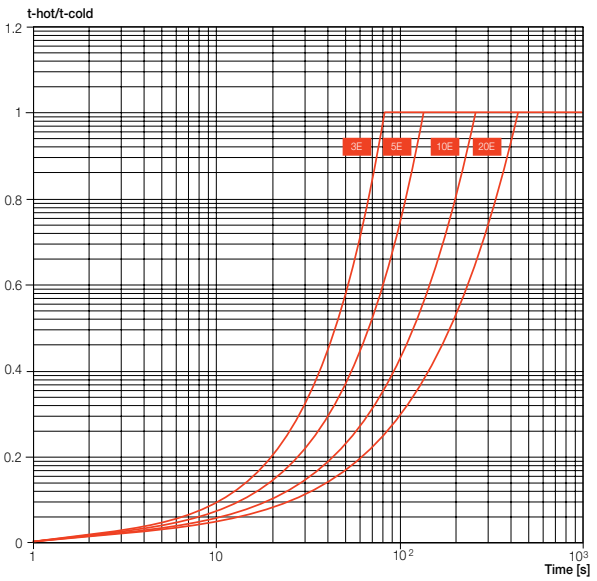
XT4 Ekip I
I function



XT2 - XT4 Ekip M-LIU
L function (cold trip)



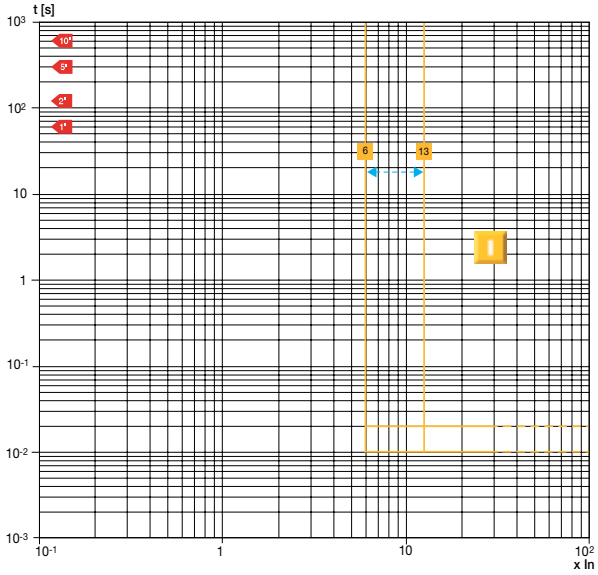
XT2 - XT4 Ekip M-LIU
(hot trip)



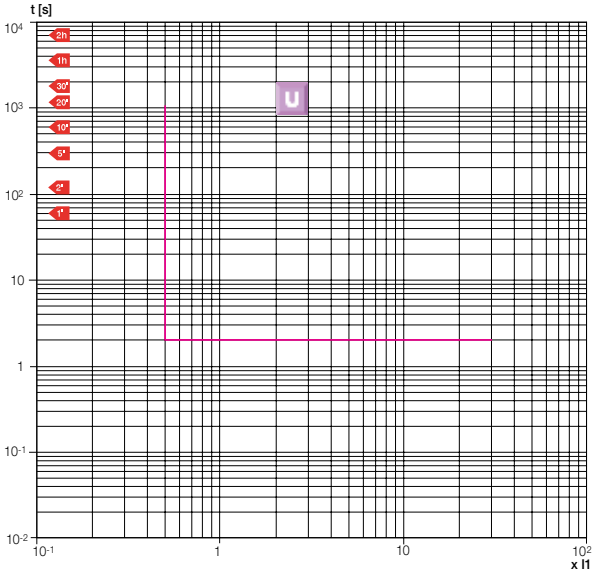
Characteristic curves

Trip curves with electronic trip unit Ekip Dip

XT2 - XT4 Ekip M-LIU
I function



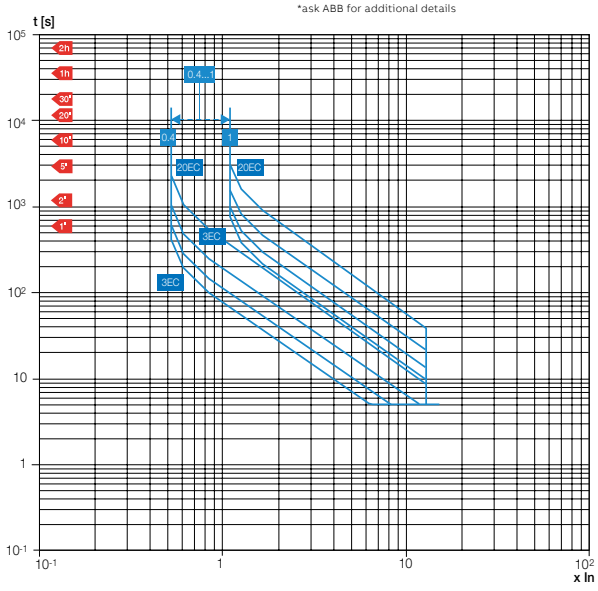
XT2 - XT4 Ekip M-LIU
U function



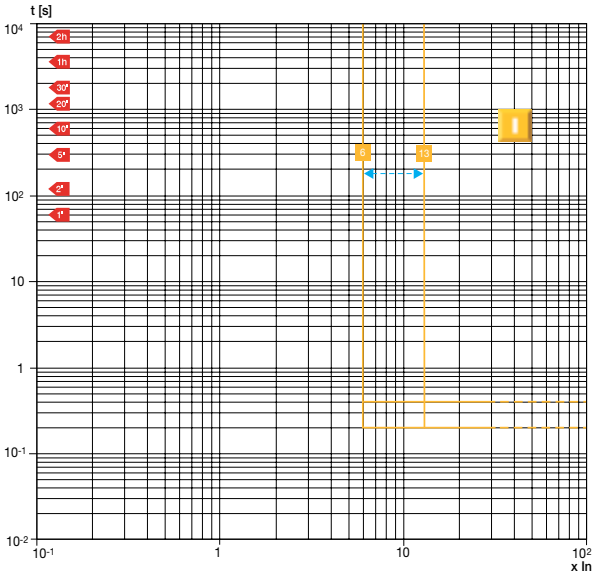
XT2 - XT4 Ekip M-LRIU
L function (cold trip)

Hot trip*	3E	5E	10E	20E
Thermal memory reset time	200s	320s	600s	1200s

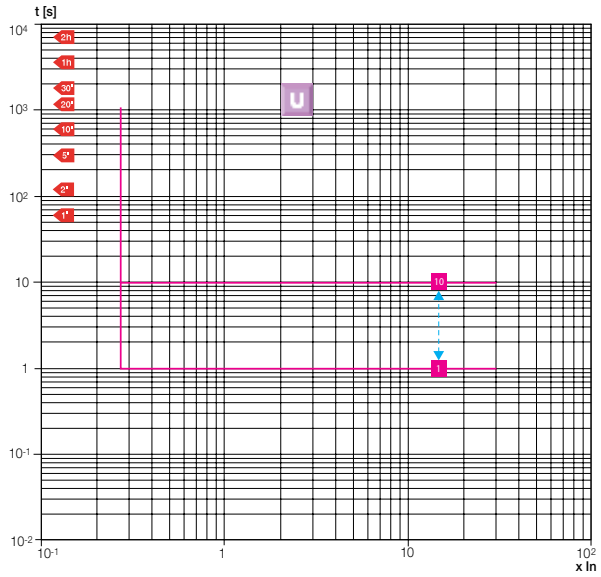
*ask ABB for additional details



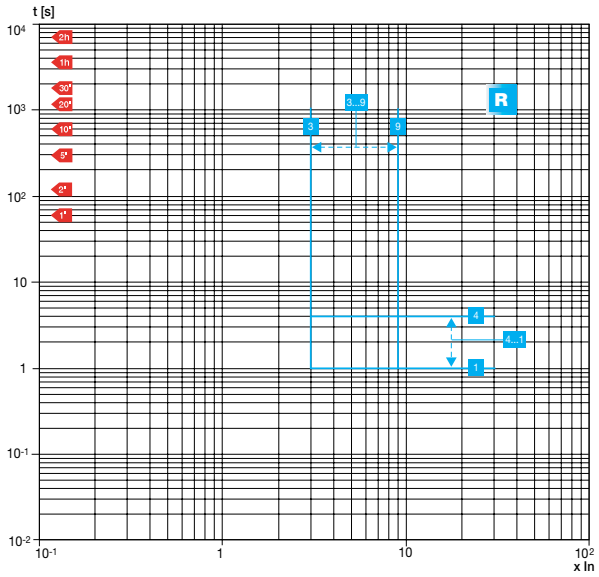
XT2 - XT4 Ekip M-LRIU
I function



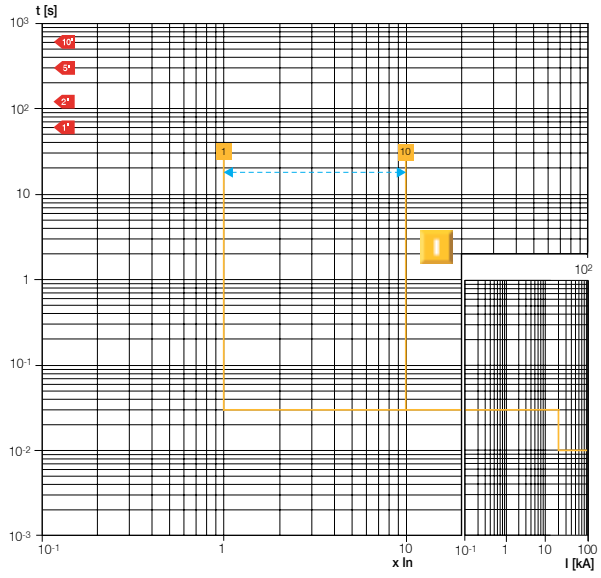
XT2 - XT4 Ekip M-LRIU
U function



XT2 - XT4 Ekip M-LRIU
R function



XT7 - XT7 M Ekip M Dip I
I function

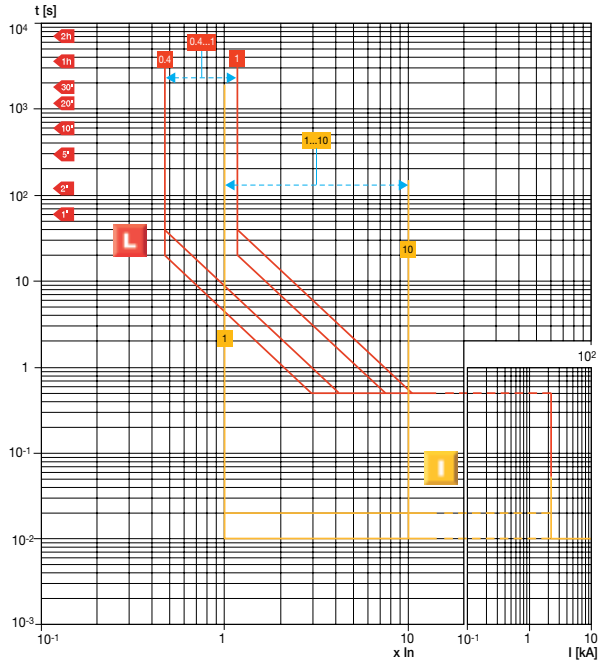


Characteristic curves

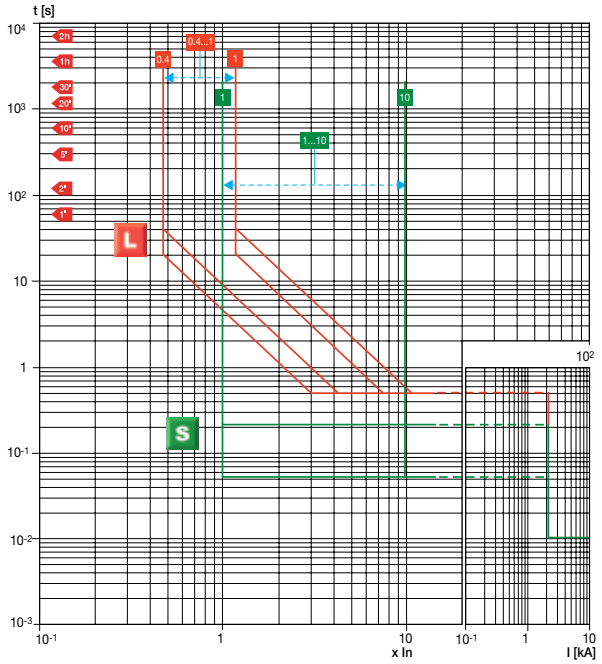
Trip curves with electronic trip unit Ekip Dip

Trip curves for generator protection

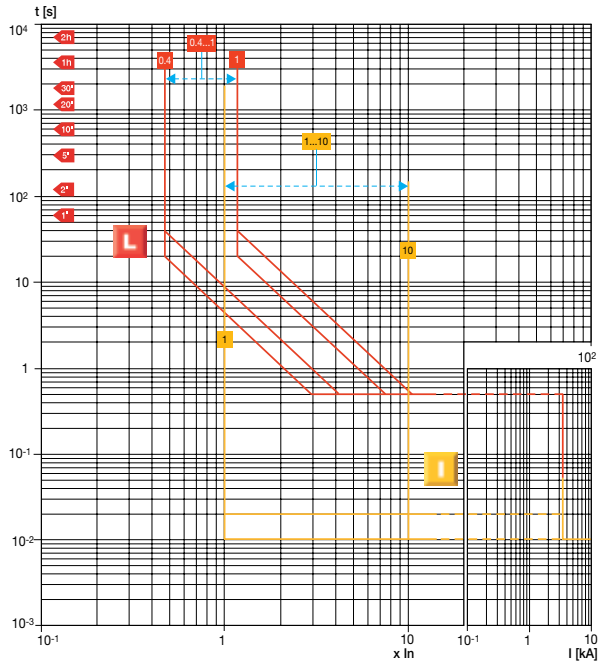
XT2 Ekip G-LS/I
L-I functions



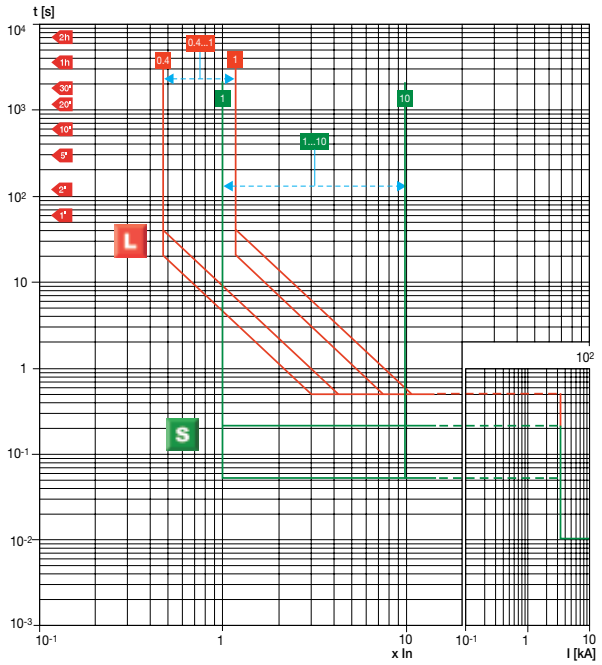
XT2 Ekip G-LS/I
L-S functions



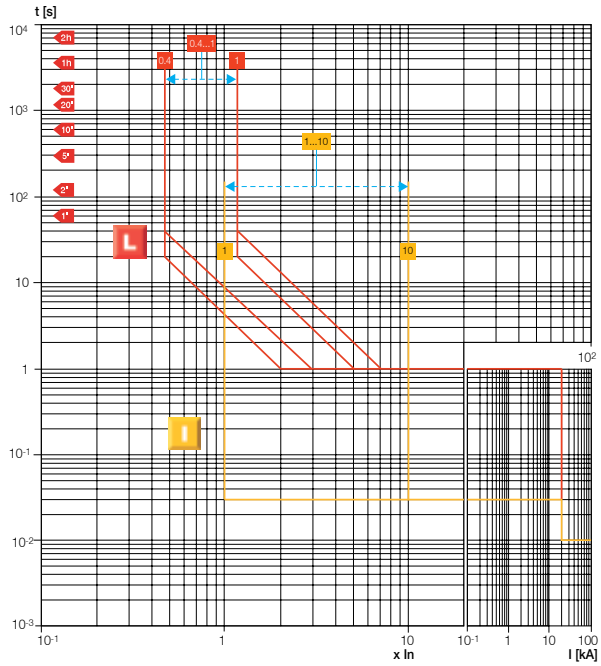
XT4 Ekip G-LS/I
L-I functions



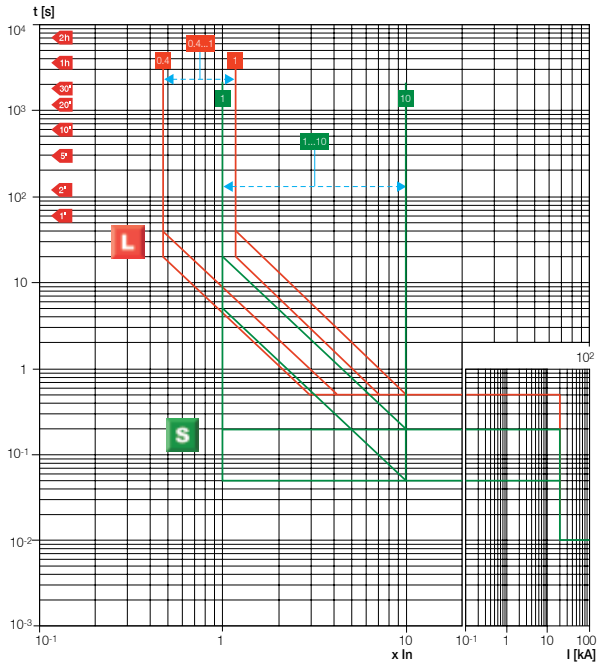
XT4 Ekip G-LS/I
L-S functions



XT7 - XT7 M Ekip G Dip LS/I
L-I functions



XT7 - XT7 M Ekip G Dip LS/I
L-S functions

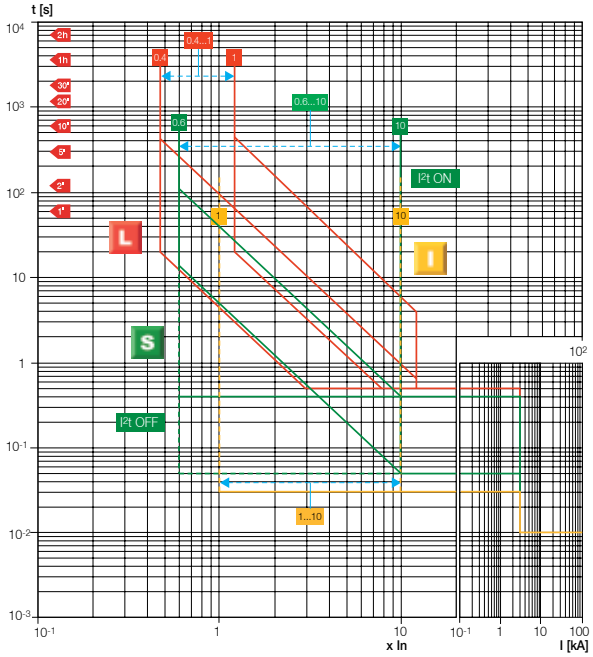


Characteristic curves

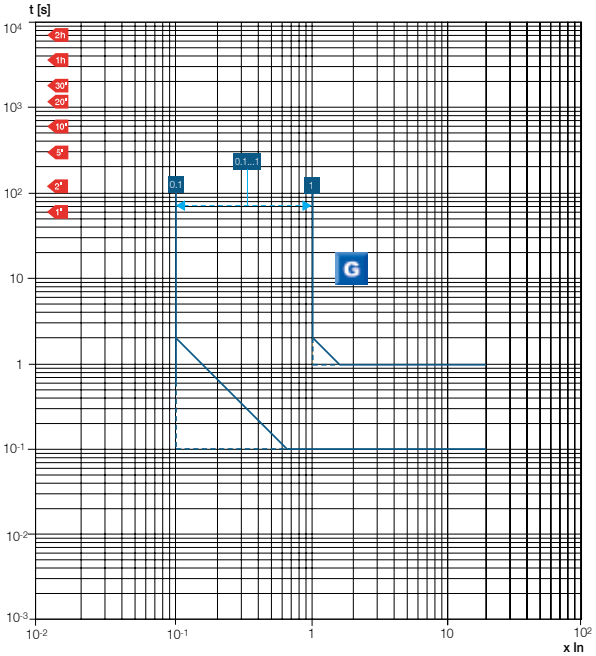
Trip curves with electronic trip unit Ekip Touch and Hi-Touch

Trip curves for distribution

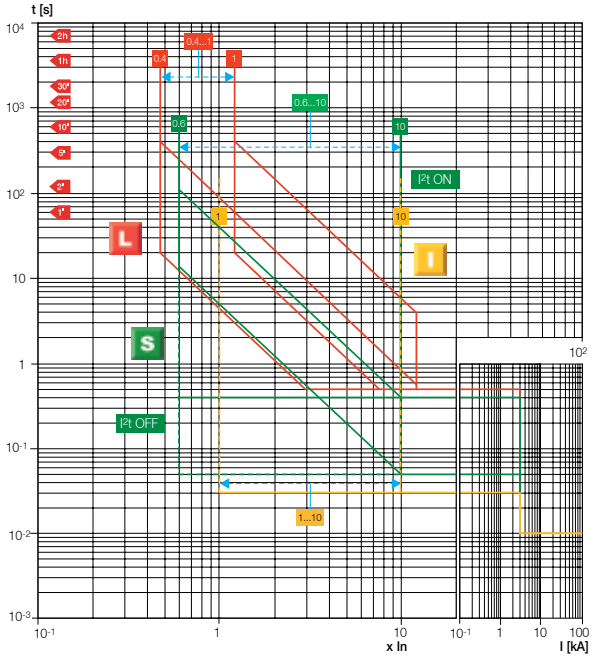
XT2
Ekip Touch LSI • Ekip Touch LSIG • Ekip Touch Measuring LSI • Ekip Touch Measuring LSIG • Ekip Hi-Touch LSI- Ekip Hi-Touch LSIG • L – S – I function



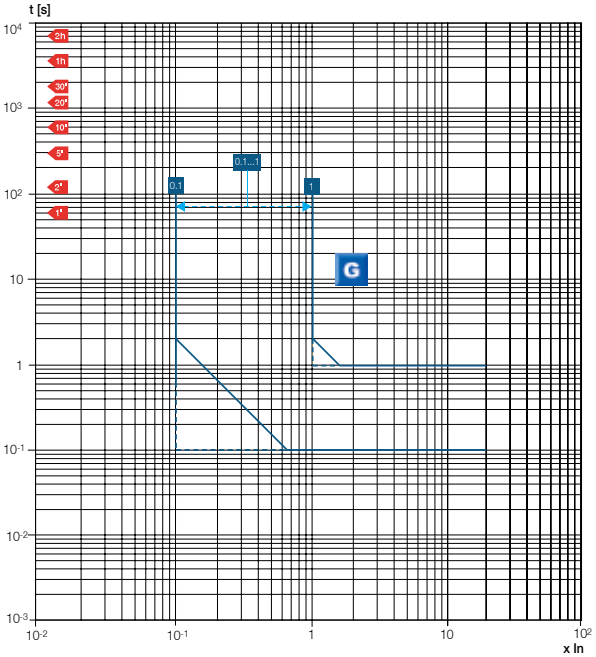
XT2
Ekip Touch LSIG • Ekip Touch Measuring LSIG • Ekip Hi-Touch LSIG • G function



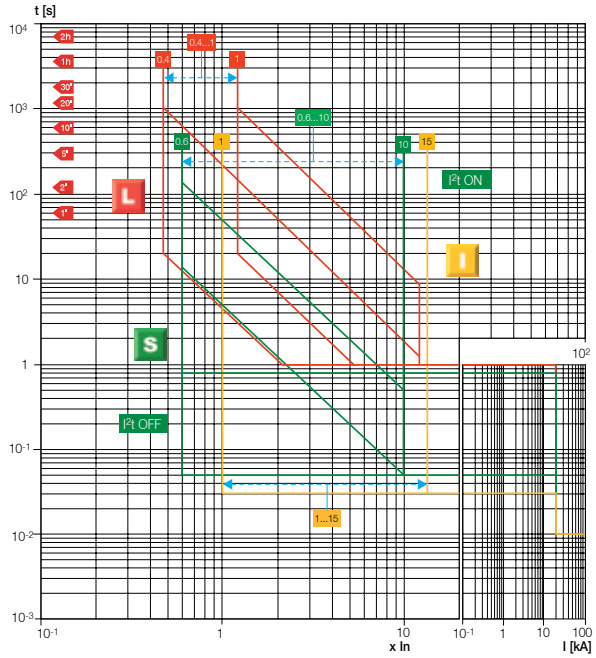
XT4
Ekip Touch LSI • Ekip Touch LSIG • Ekip Touch Measuring LSI • Ekip Touch Measuring LSIG • Ekip Hi-Touch LSI • Ekip Hi-Touch LSIG • L – S – I function



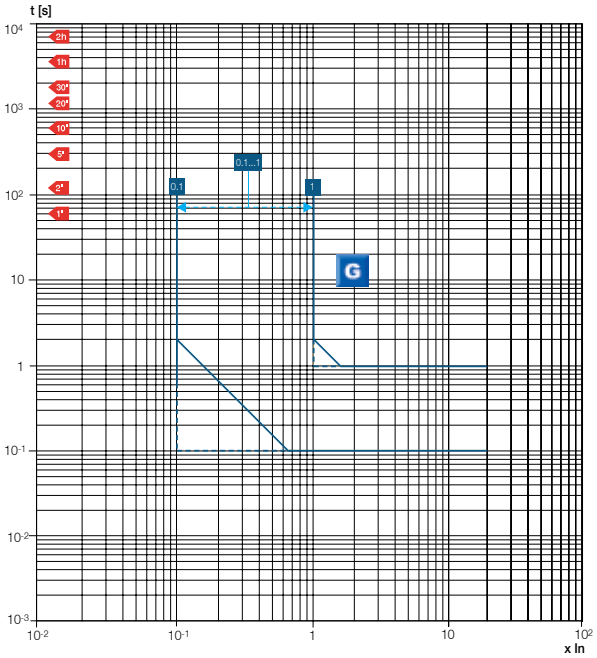
XT4
Ekip Touch LSIG • Ekip Touch Measuring LSIG • Ekip Hi-Touch LSIG • G function



XT7 – XT7 M • Ekip Touch LSI • Ekip Touch LSIG • Ekip Touch Measuring LSI • Ekip Touch Measuring LSIG • Ekip Hi-Touch LSI • Ekip Hi-Touch LSIG • L – S – I function



XT7 – XT7 M • Ekip Touch LSIG • Ekip Touch Measuring LSIG • Ekip Hi-Touch LSIG • G function

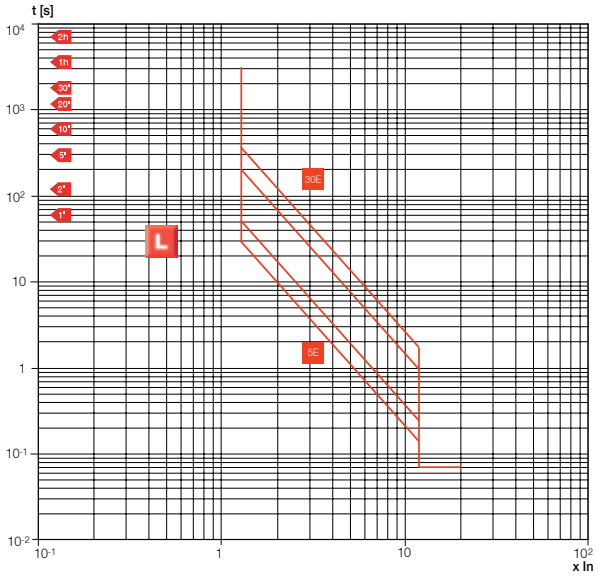


Characteristic curves

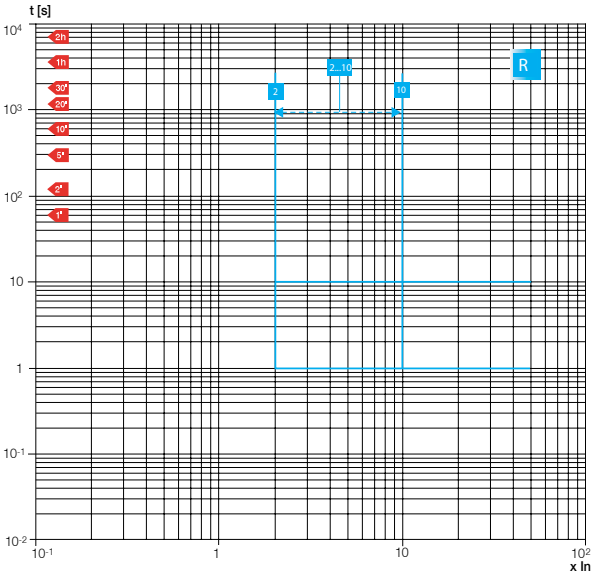
Trip curves with electronic trip unit Ekip Touch and Hi-Touch

Trip curves for motor protection

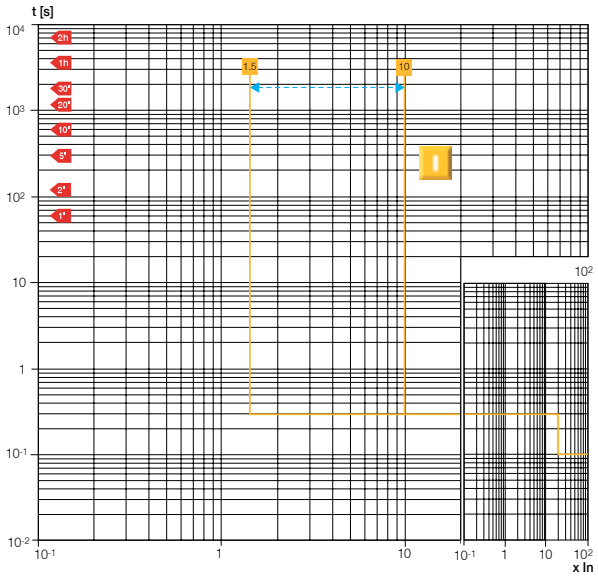
XT2 Ekip M Touch LRIU
L function (cold trip)



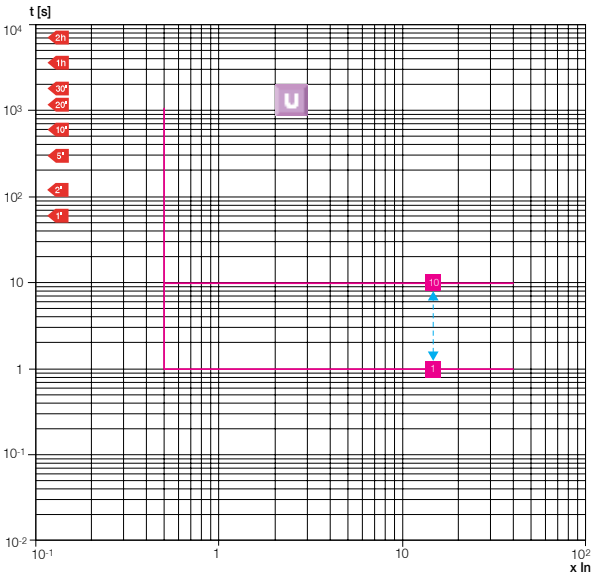
XT2 Ekip M Touch LRIU
R function



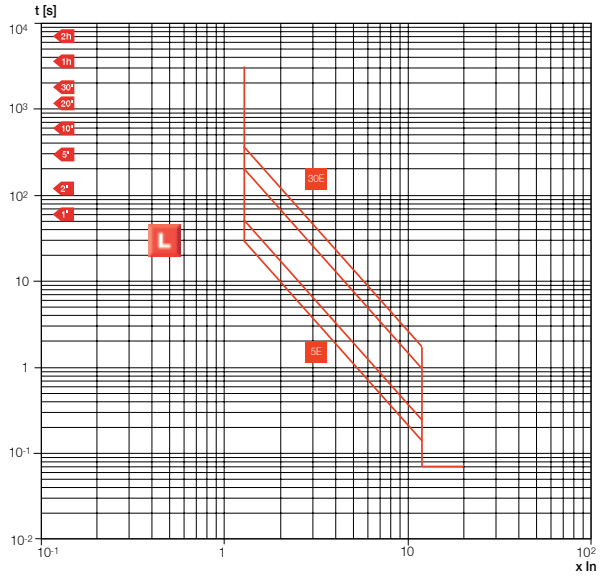
XT2 Ekip M Touch LRIU
I function



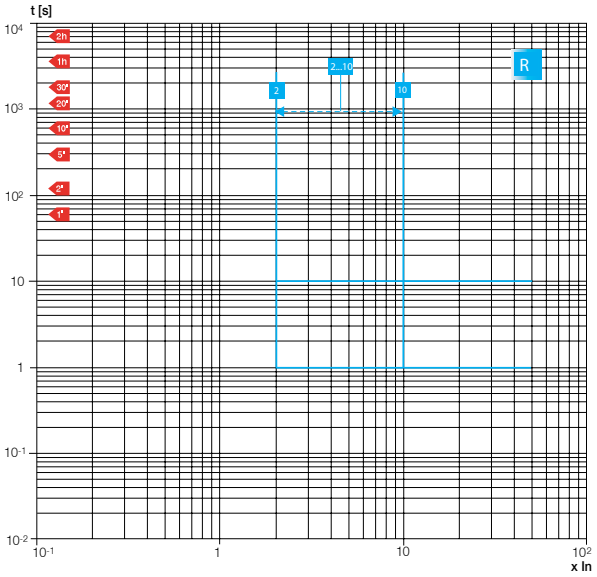
XT2 Ekip M Touch LRIU
U function



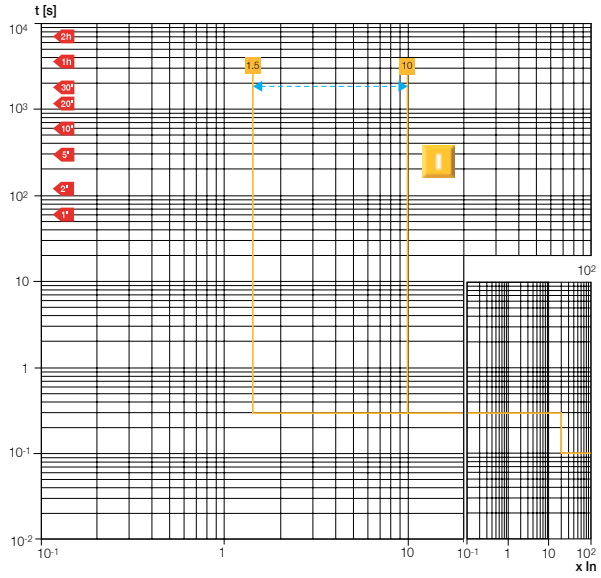
XT4Ekip M Touch LRIU
L function (cold trip)



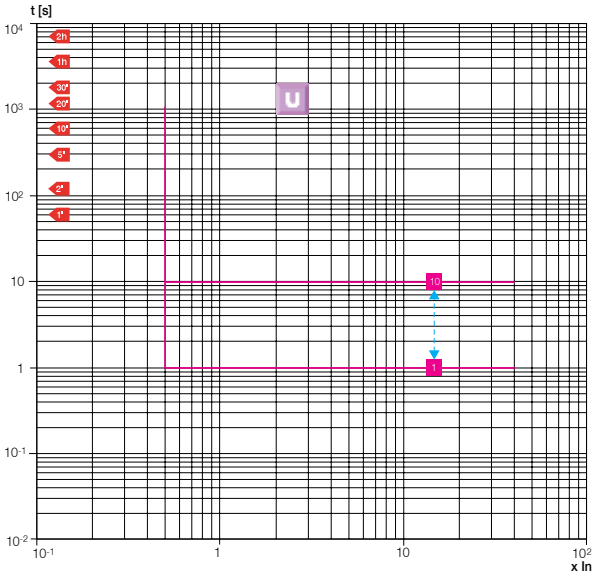
XT4 Ekip M Touch LRIU
R function



XT4 Ekip M Touch LRIU
I function



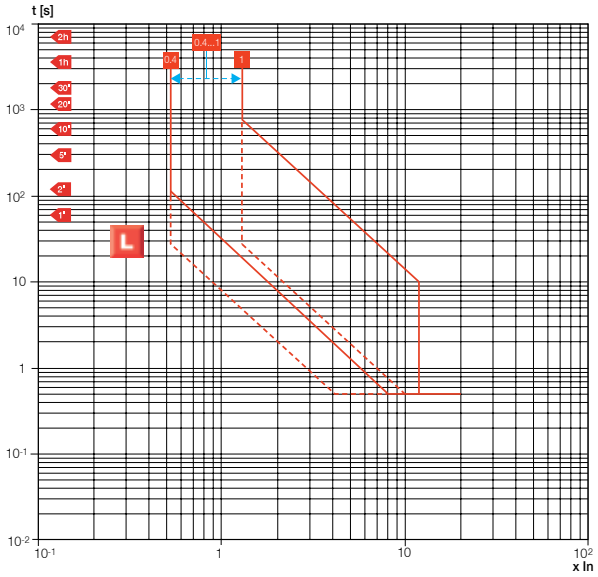
XT4 Ekip M Touch LRIU
U function



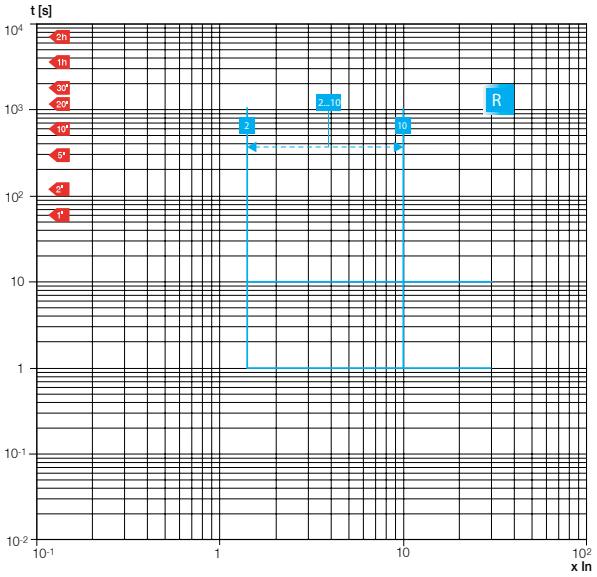
Characteristic curves

Trip curve with electronic trip unit Ekip Touch and Hi-Touch

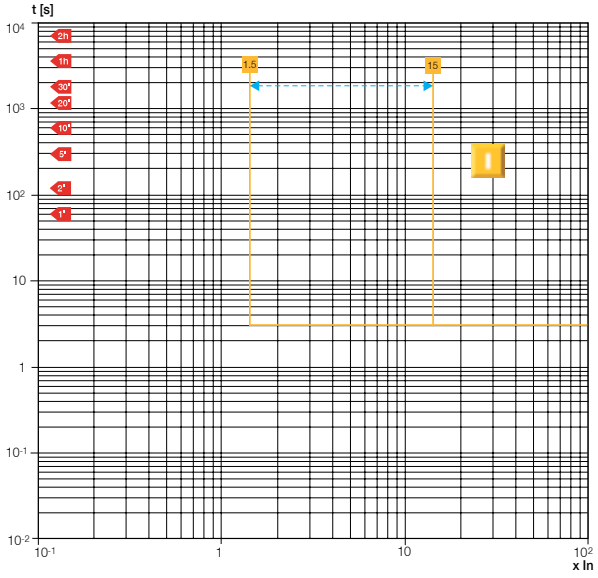
XT7 – XT7 M Ekip M Touch LRIU
L function (cold trip)



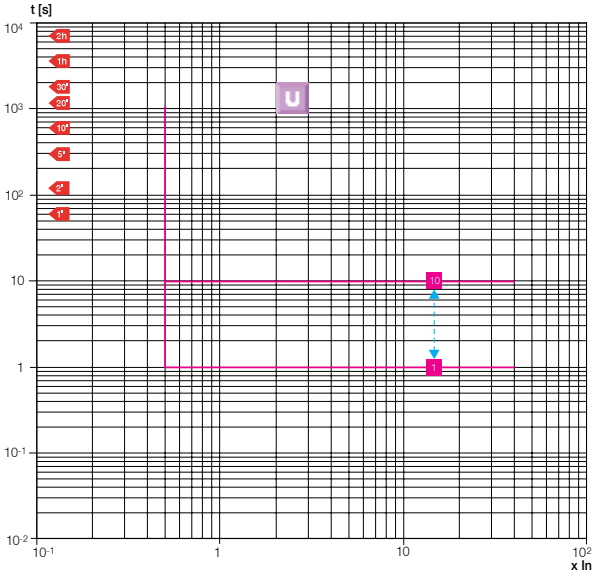
XT7 – XT7 M Ekip M Touch LRIU
R function



XT7 – XT7 M Ekip M Touch LRIU
I function

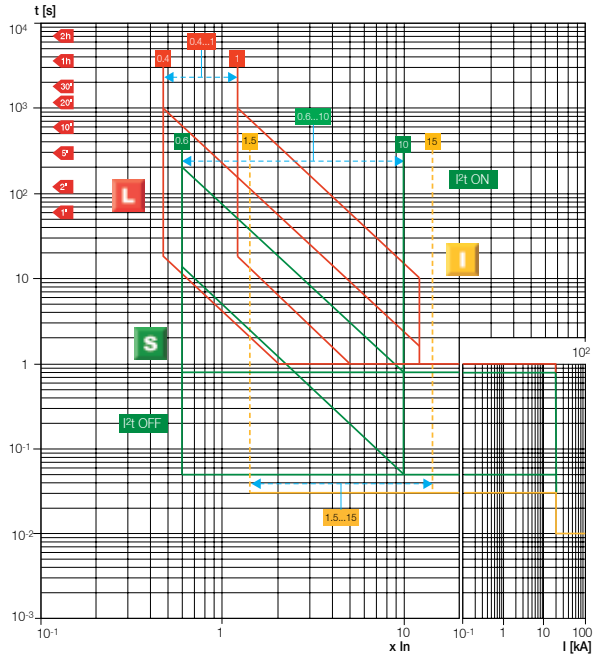


XT7 – XT7 M Ekip M Touch LRIU
U function

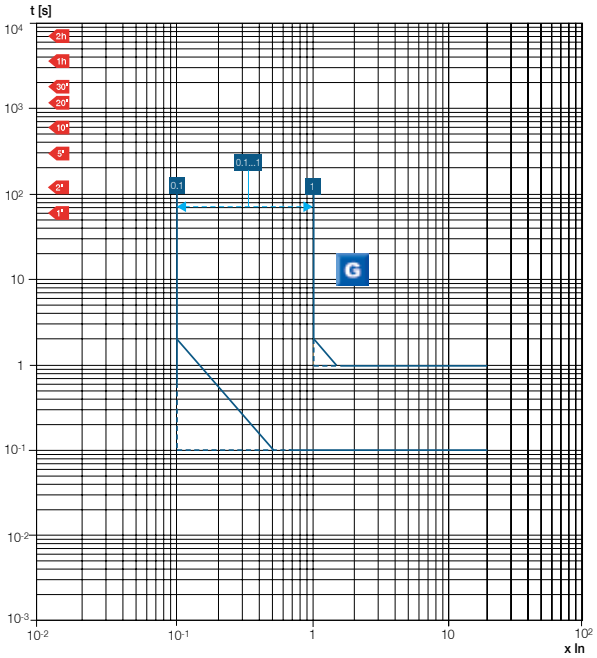


Trip curves for generator protection

XT7 – XT7 M Ekip G Touch LSIG / Ekip G Hi-Touch LSIG
L-S-I functions



XT7 – XT7 M Ekip G Touch LSIG / Ekip G Hi-Touch LSIG
G function

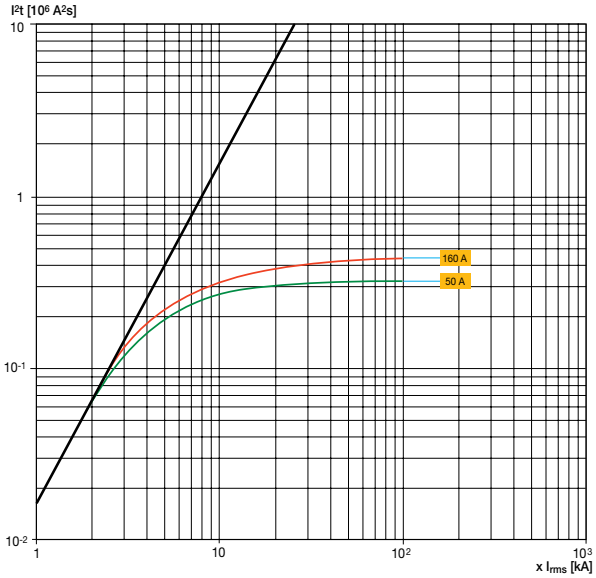


Characteristic curves

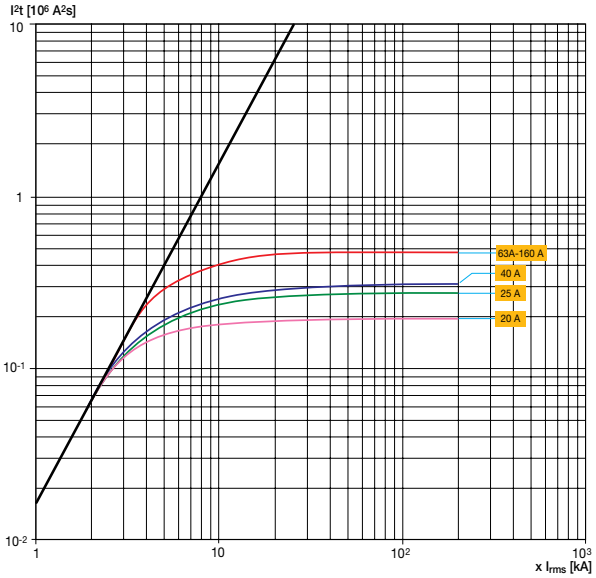
Specific let-through energy curves

240V

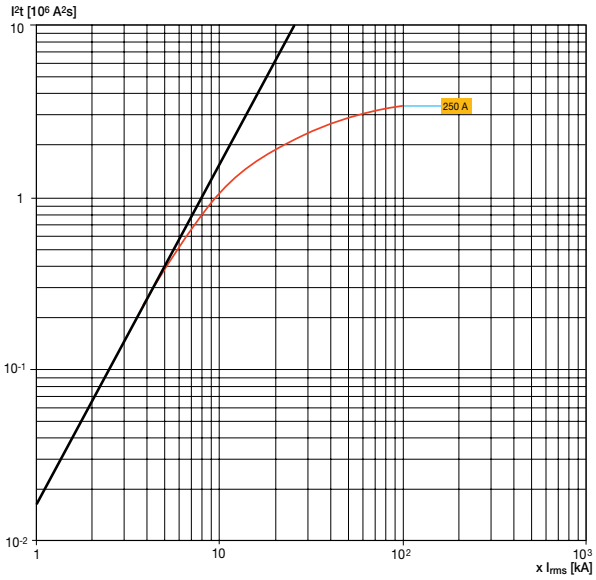
XT1
240V



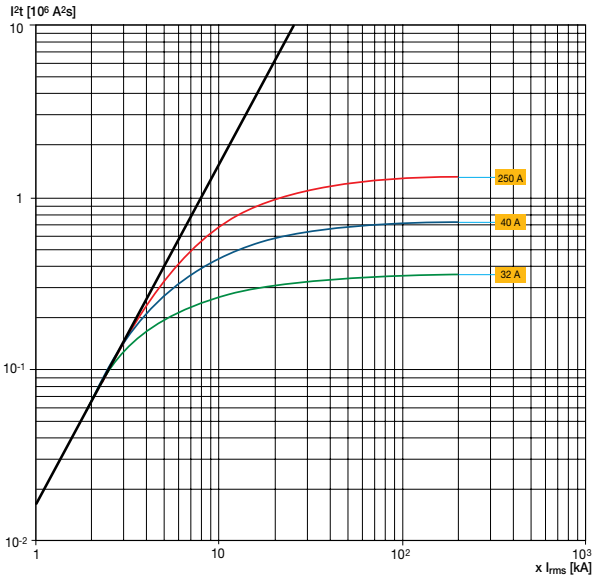
XT2
240V



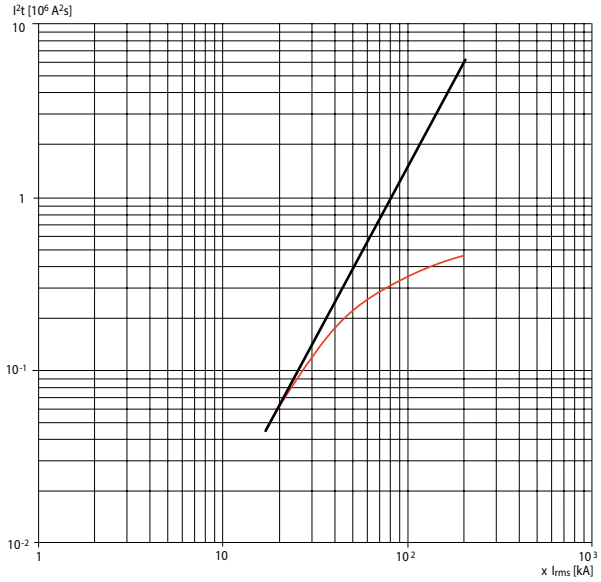
XT3
240V



XT4 N-S-H-L-V
240V



XT7 - XT7 M S-H-L
240V

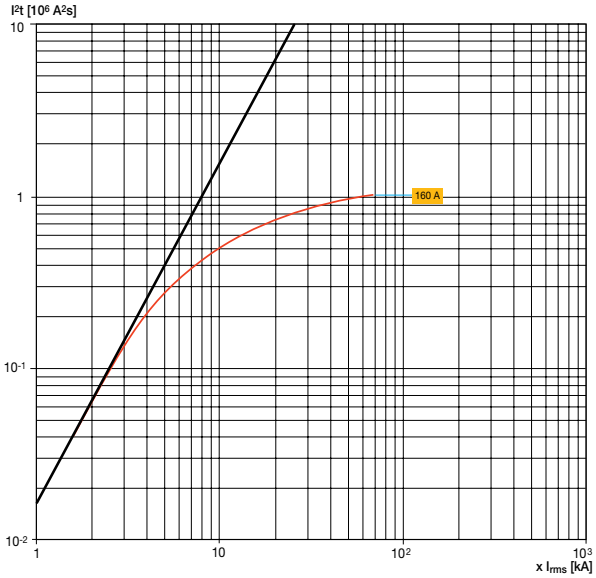


Characteristic curves

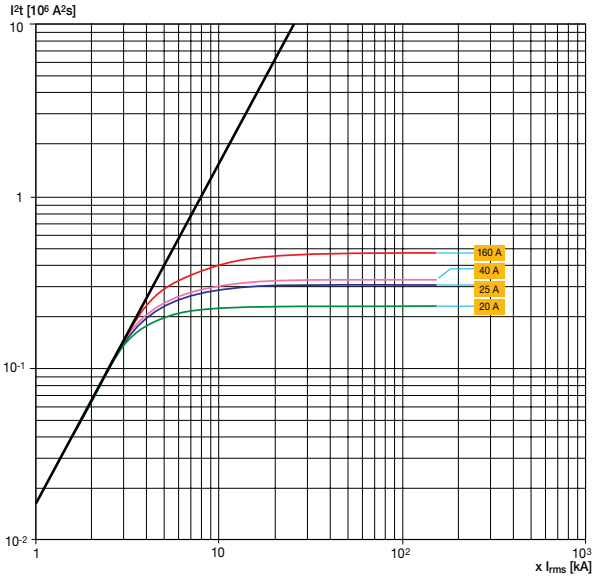
Specific let-through energy curves

415V

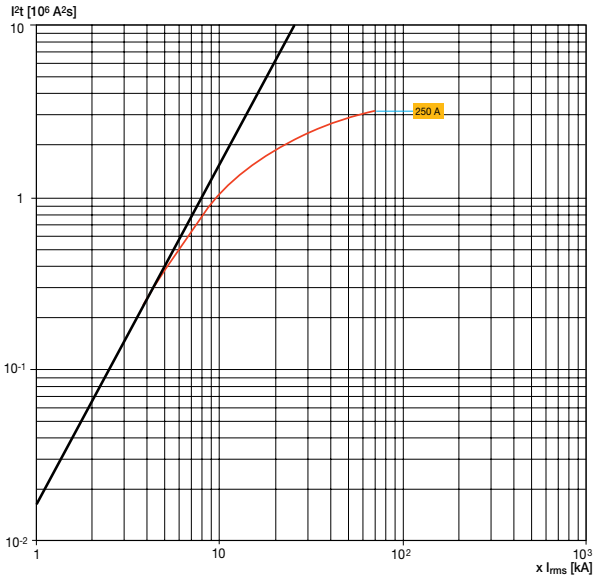
XT1
415V



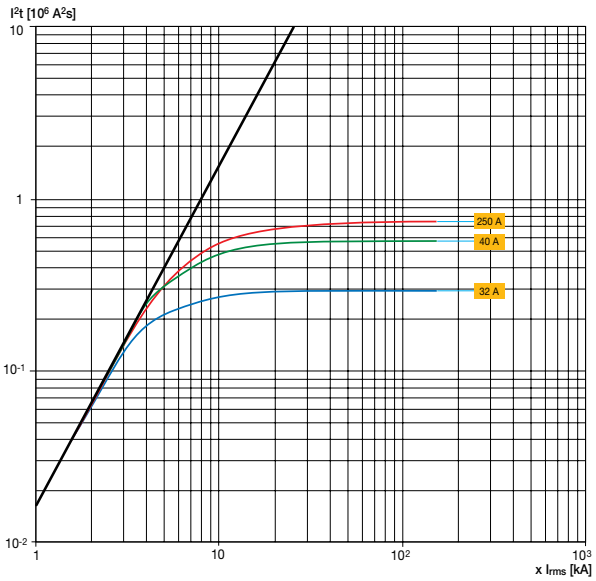
XT2
415V



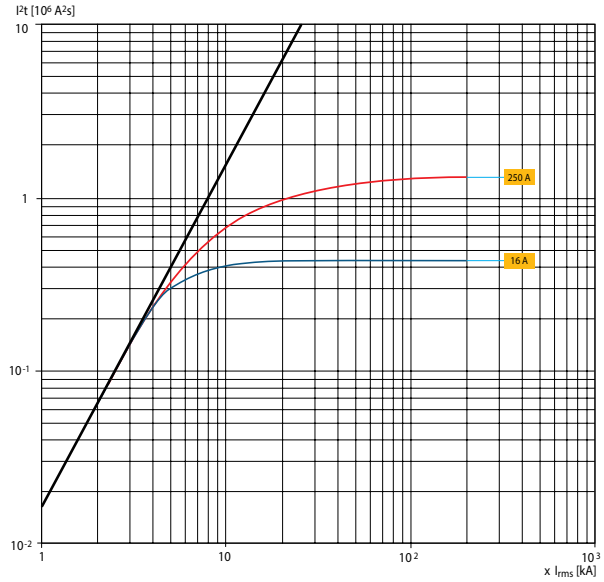
XT3
415V



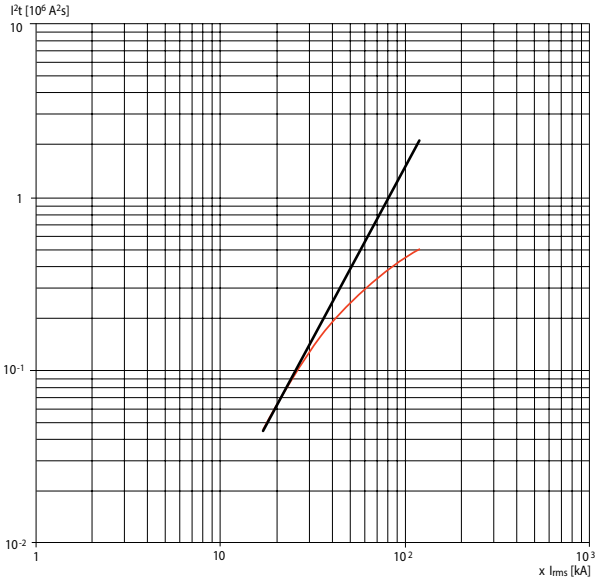
XT4 N-S-H-L-V
415V



XT4X
415V



XT7 - XT7 M S-H-L
415V

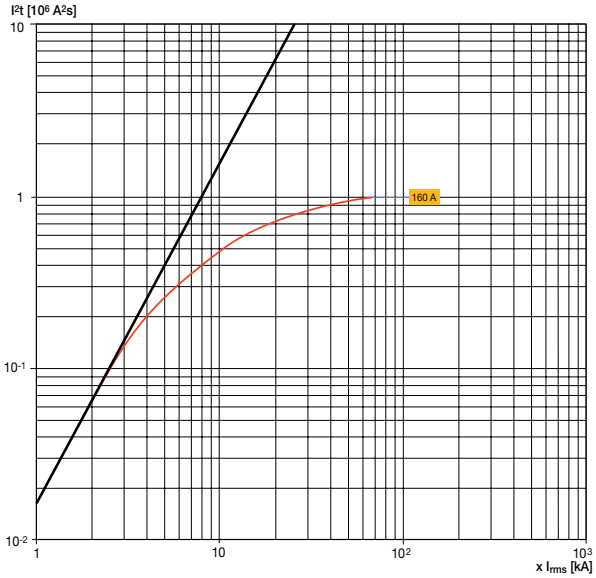


Characteristic curves

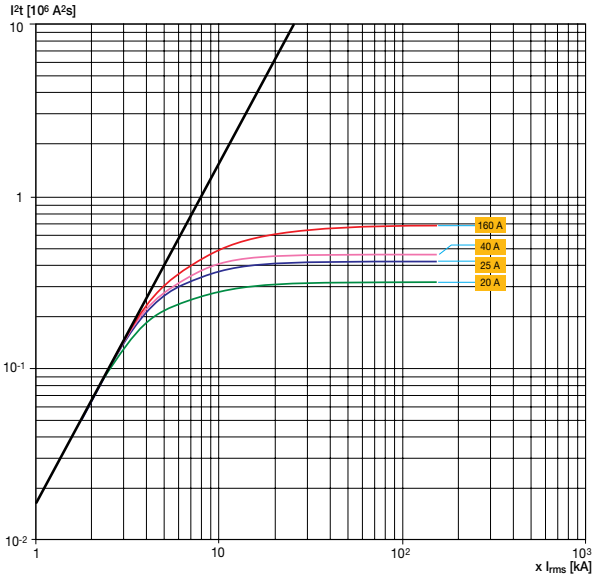
Specific let-through energy curves

440V

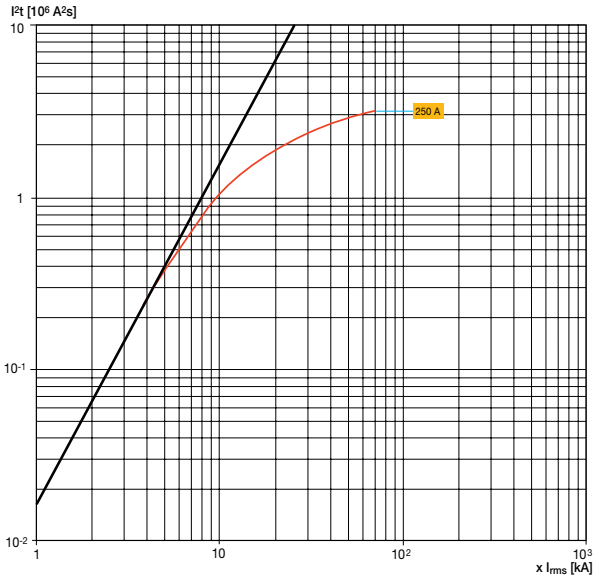
XT1
440V



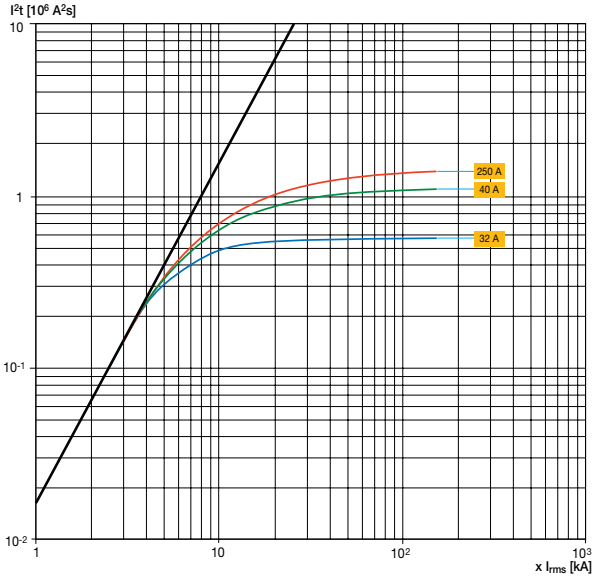
XT2
440V



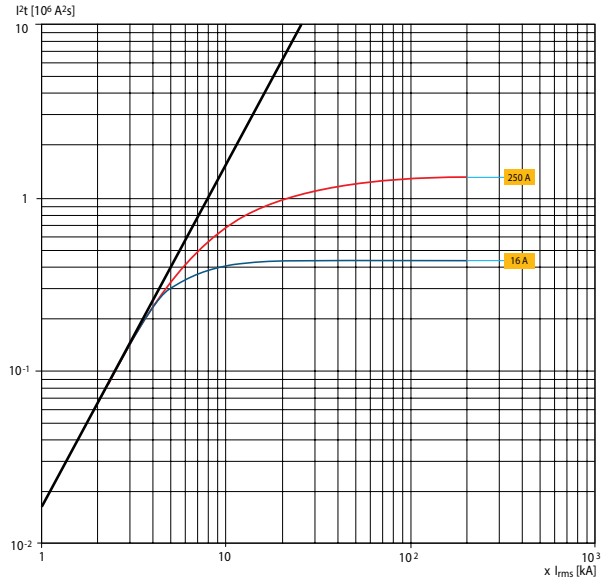
XT3
440V



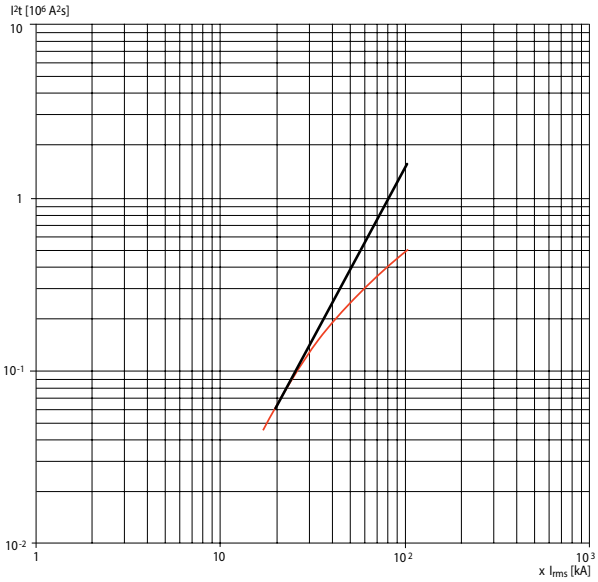
XT4 N-S-H-L-V
440V



XT4X
440V



XT7 - XT7 M S-H-L
440V

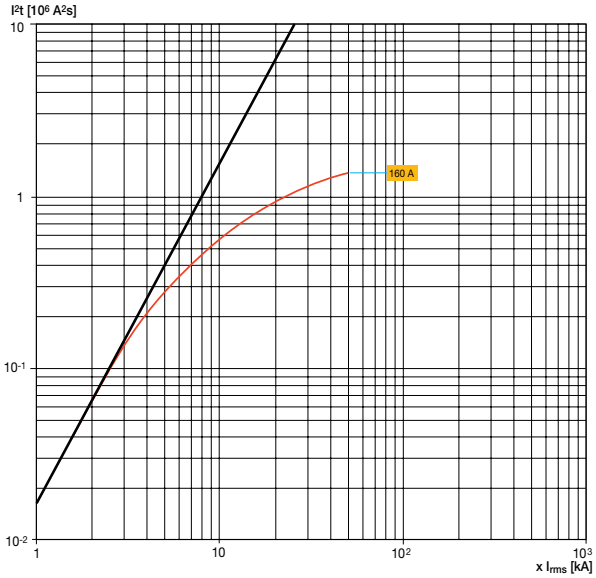


Characteristic curves

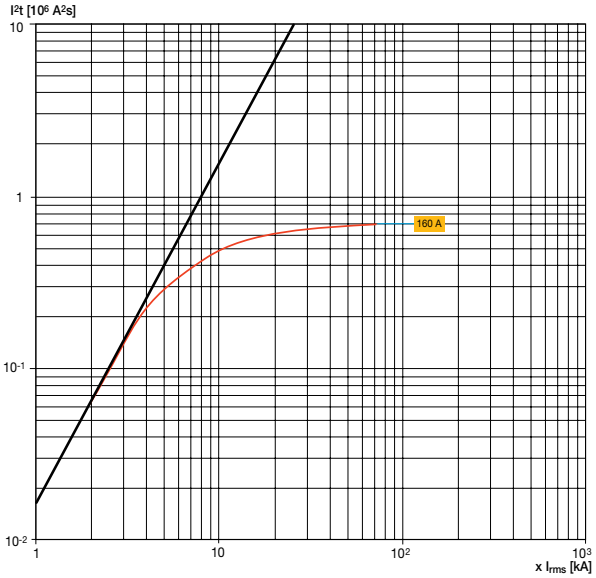
Specific let-through energy curves

500V

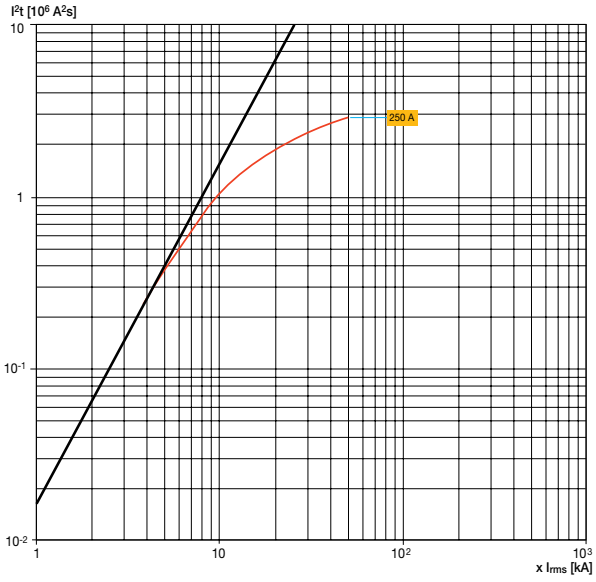
XT1
500V



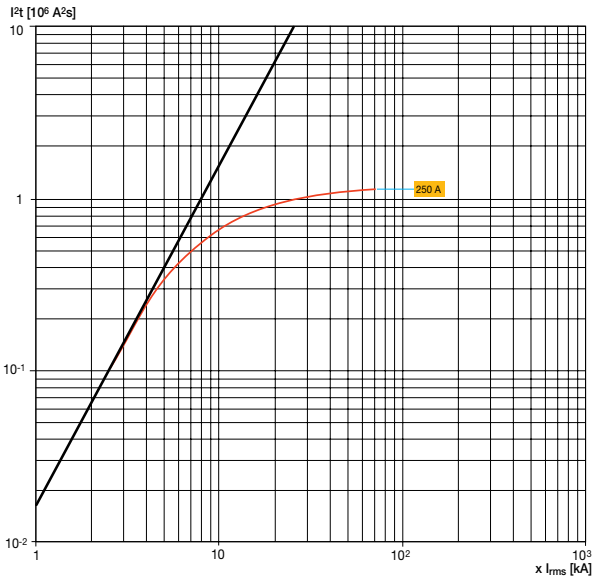
XT2
500V



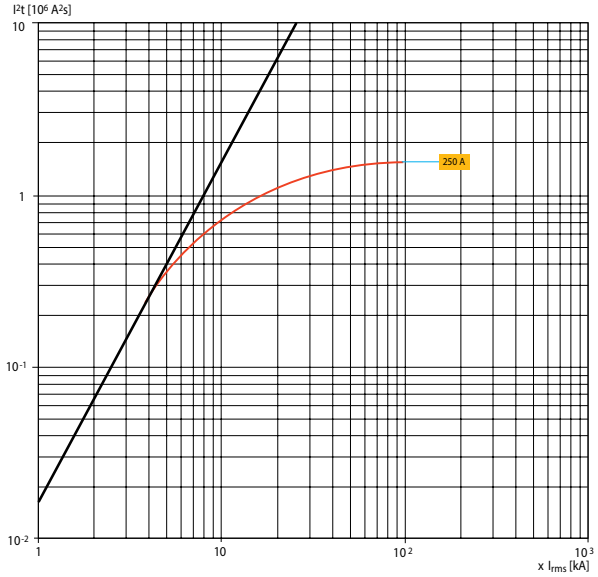
XT3
500V



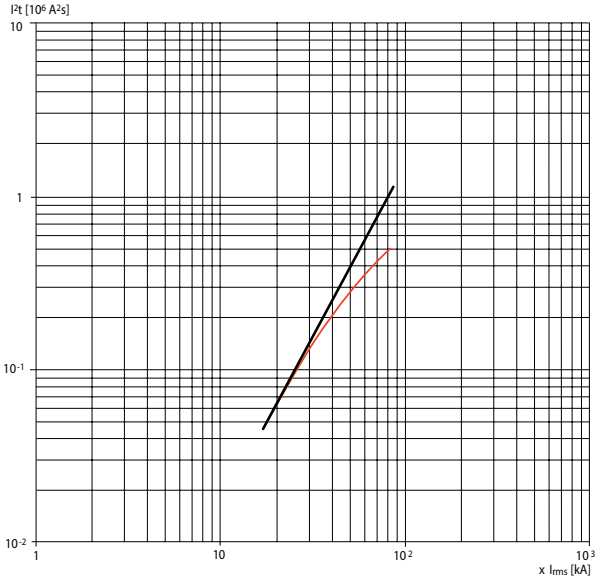
XT4 N-S-H-L-V
500V



XT4X
500V



XT7 - XT7 M S-H-L
500V

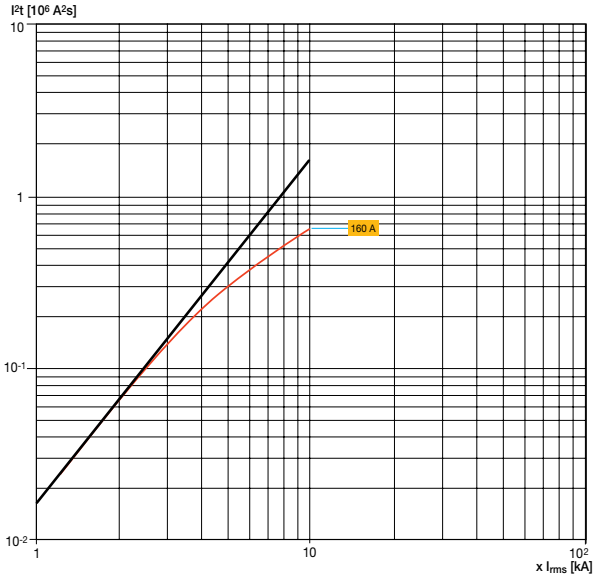


Characteristic curves

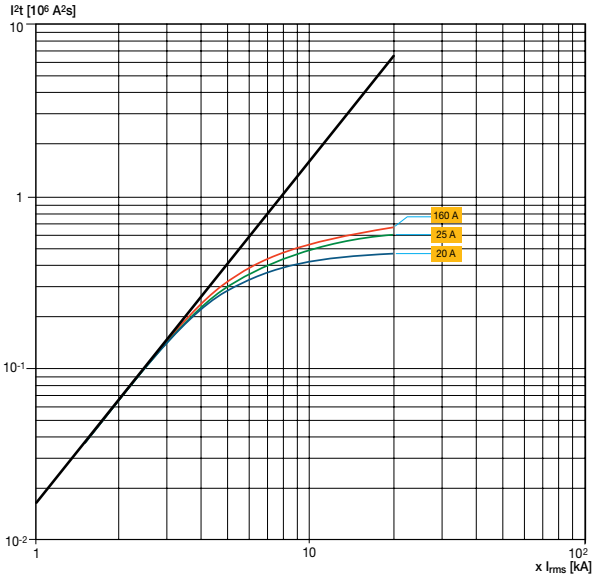
Specific let-through energy curves

690V

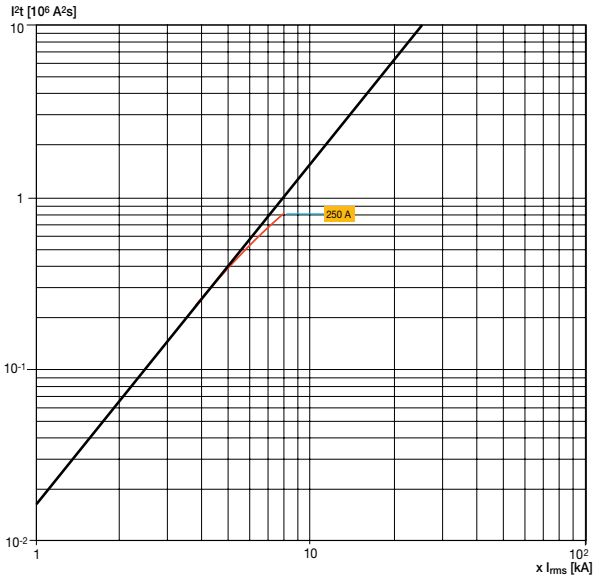
XT1
690V



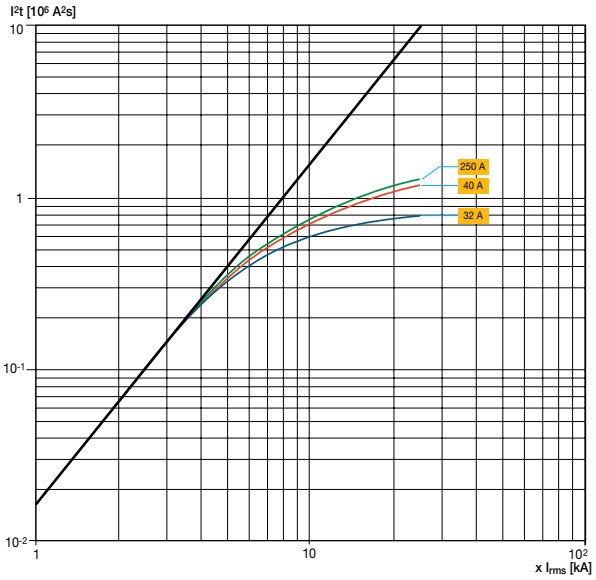
XT2
690V



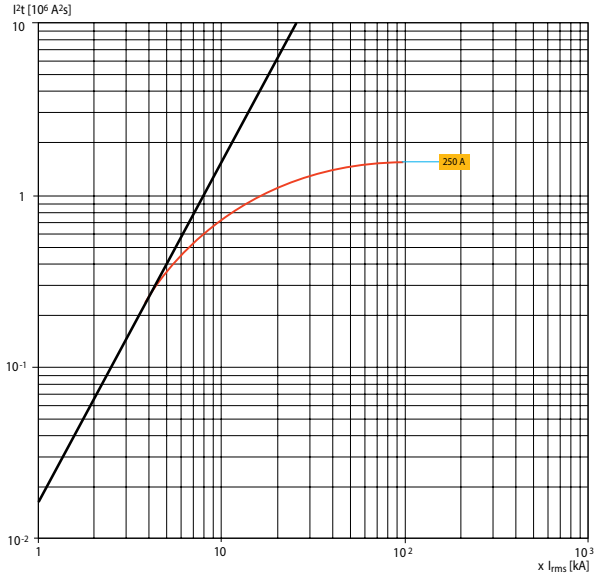
XT3
690V



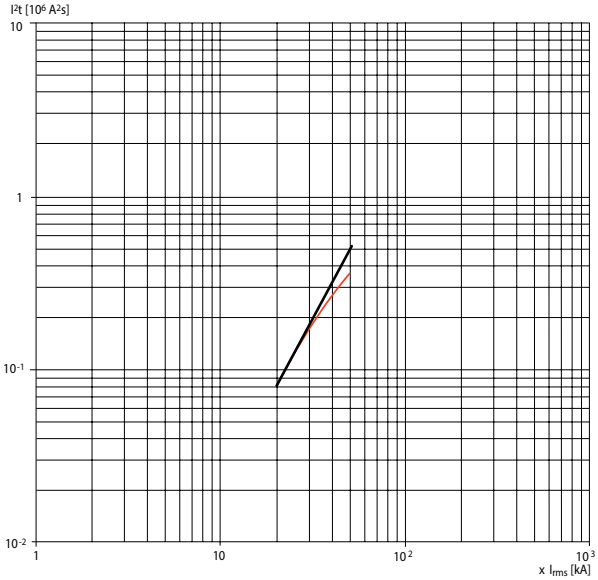
XT4 N-S-H-L-V
690V



XT4X
690V



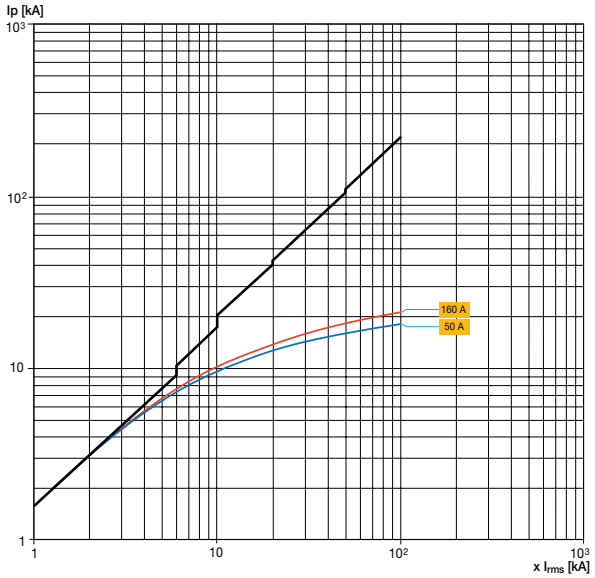
XT7 - XT7 M S-H-L
690V



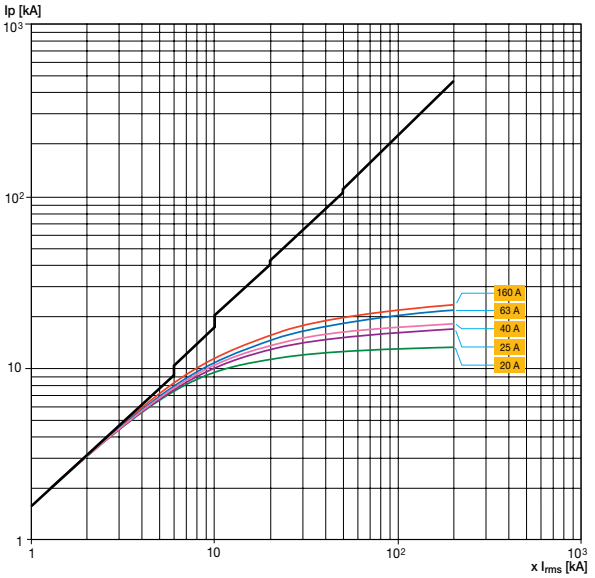
Characteristic curves
Limiting curves

240V

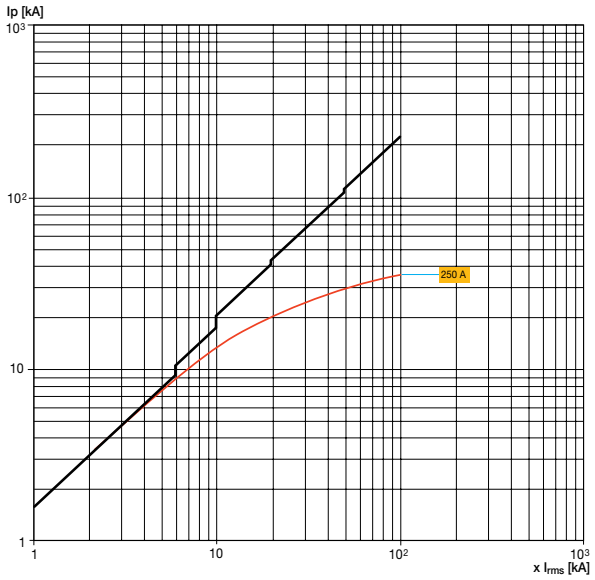
XT1
240V



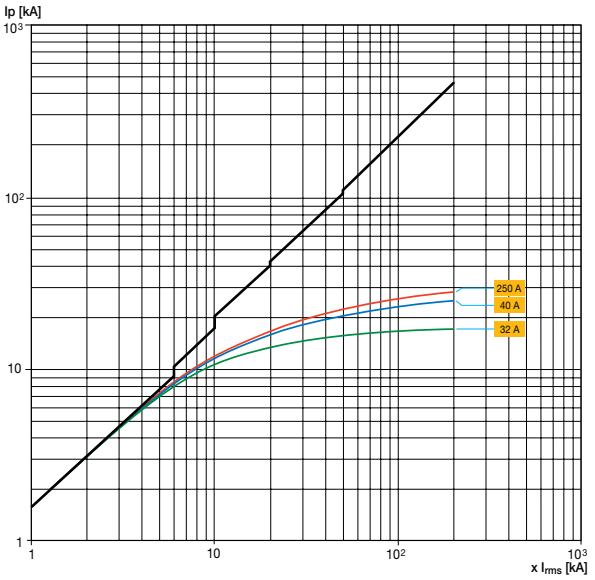
XT2
240V



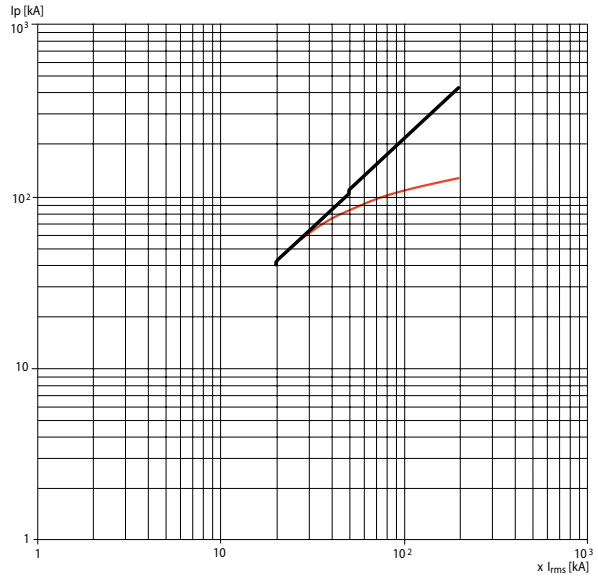
XT3
240V



XT4
240V



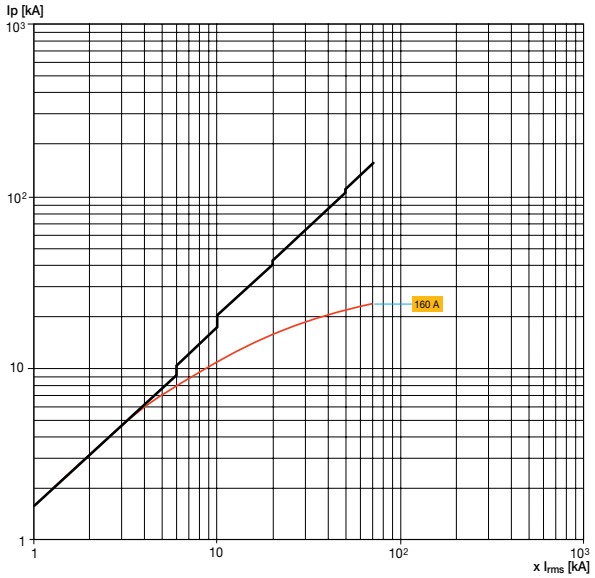
XT7 - XT7 M S-H-L
240V



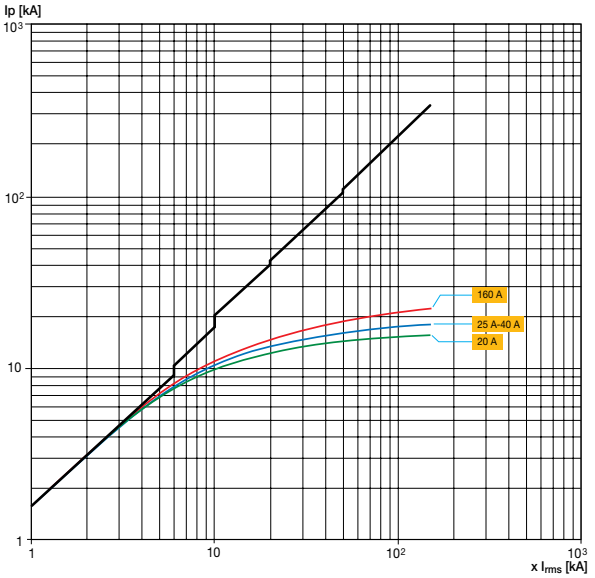
Characteristic curves
Limiting curves

415V

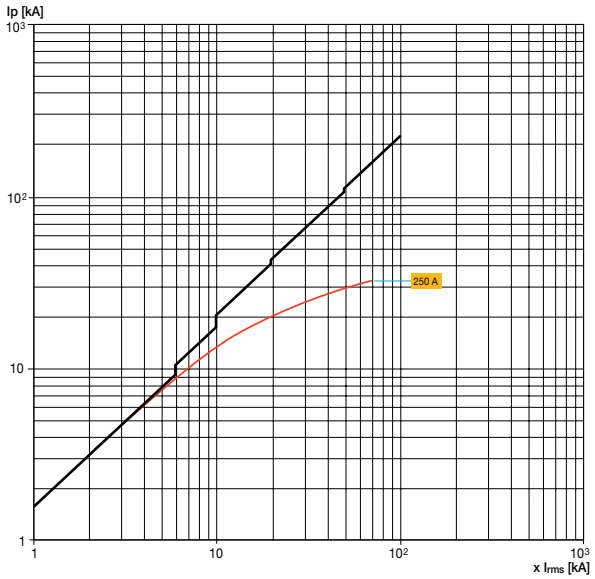
XT1
415V



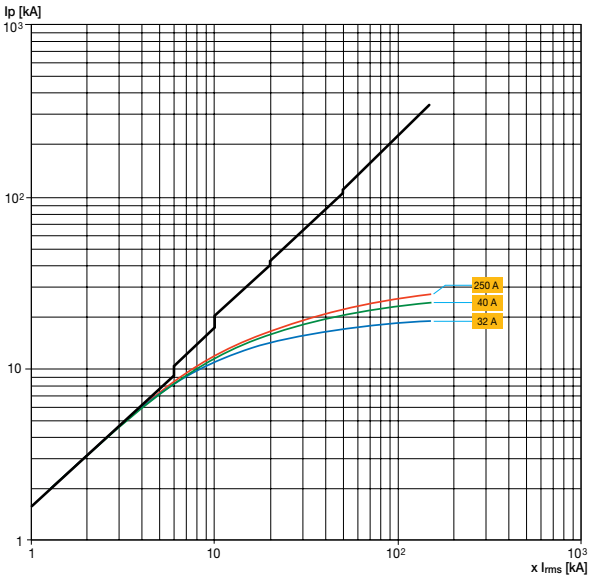
XT2
415V



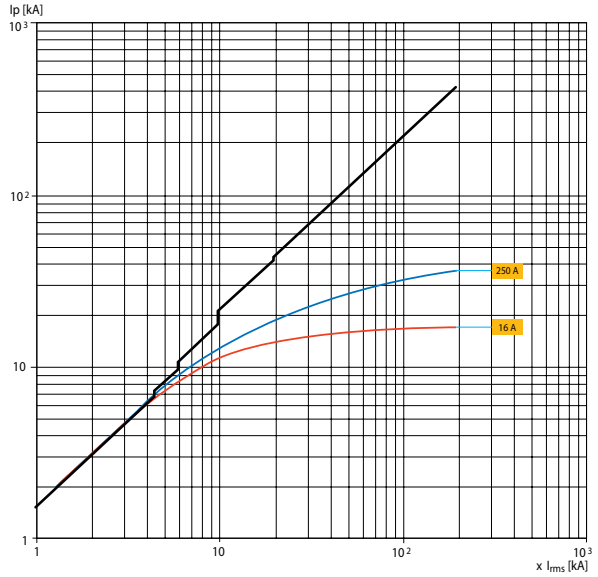
XT3
415V



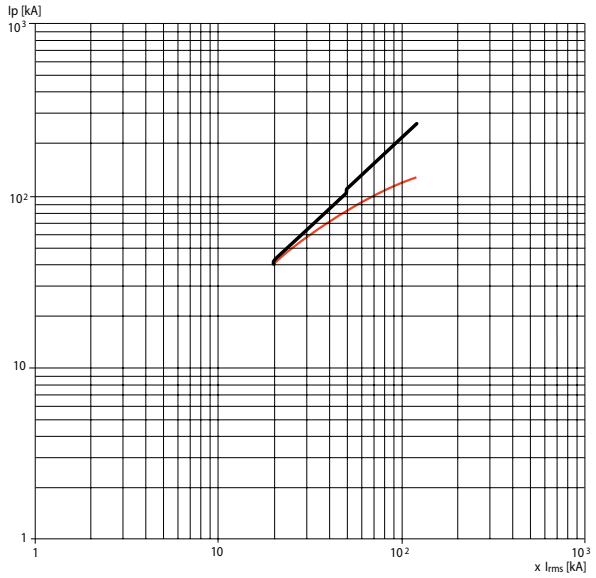
XT4 N-S-H-L-V
415V



XT4X
415V



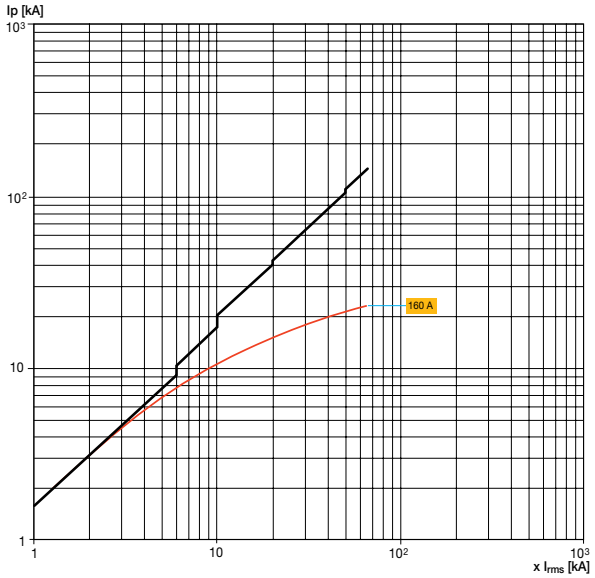
XT7 - XT7 M S-H-L
415V



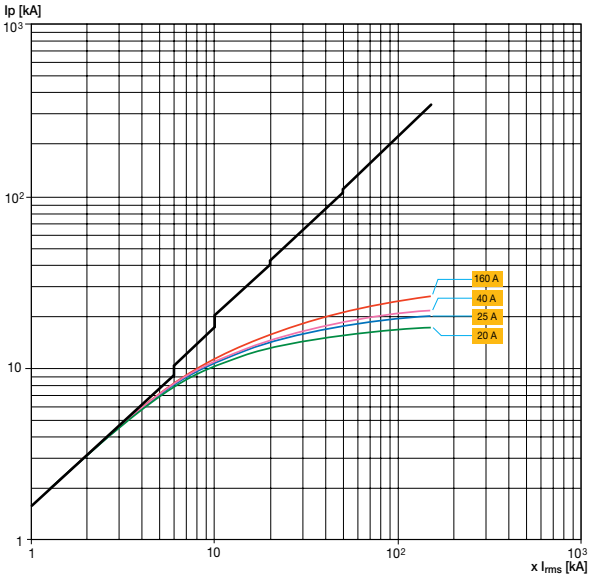
Characteristic curves
Limiting curves

440V

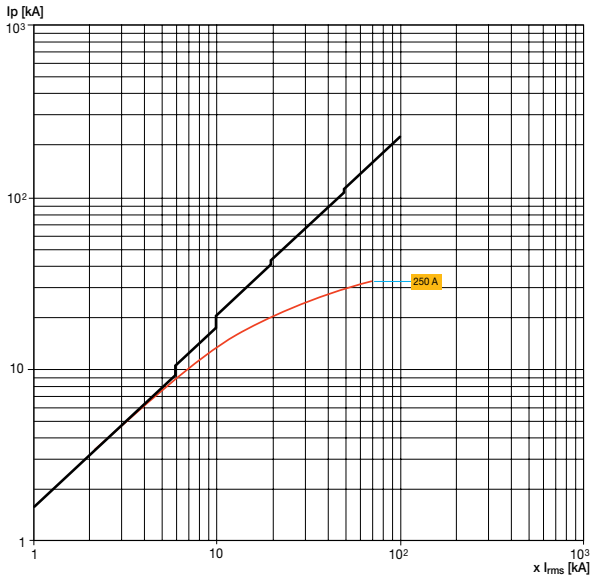
XT1
440V



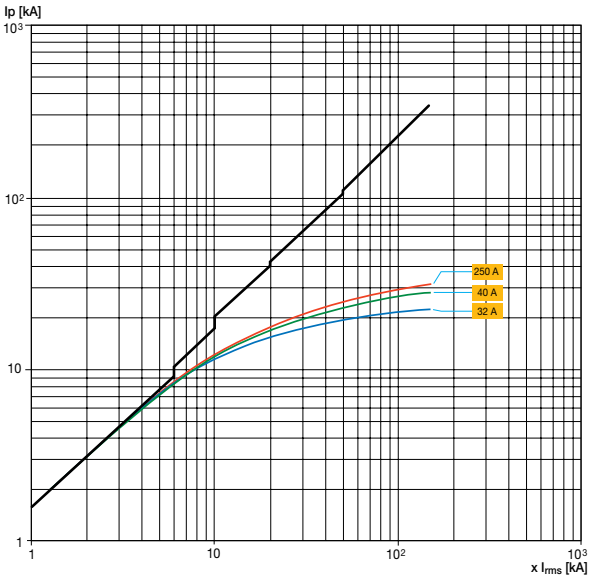
XT2
440V



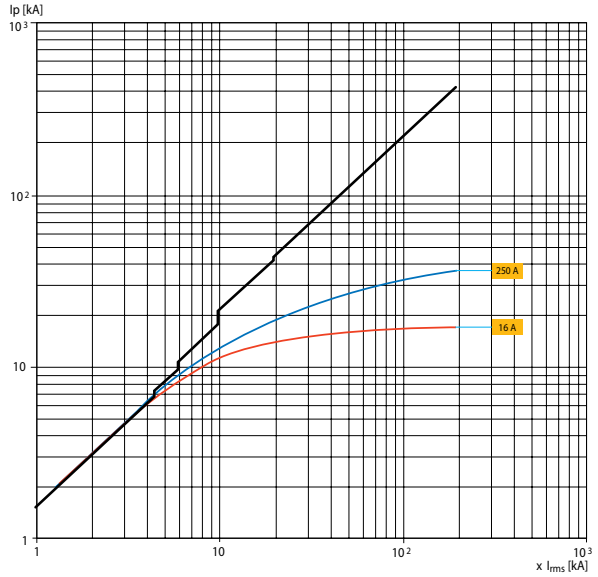
XT3
440V



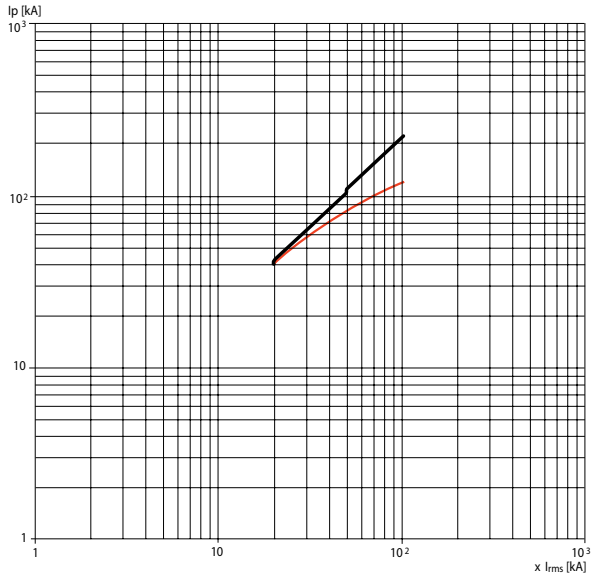
XT4 N-S-H-L-V
440V



XT4X
440V



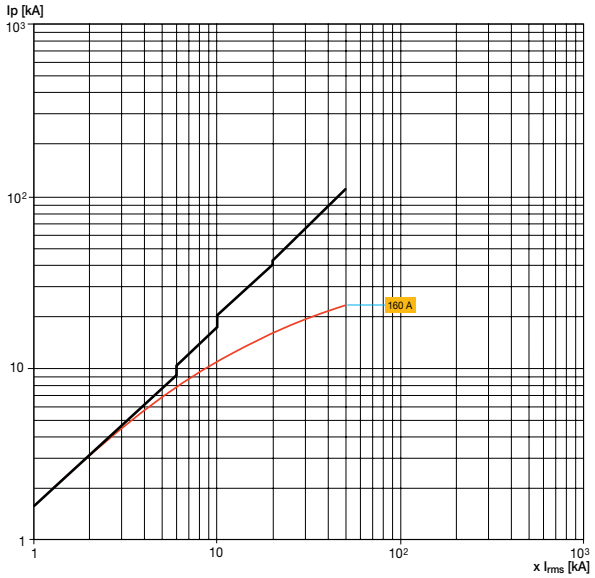
XT7 - XT7 M S-H-L
440V



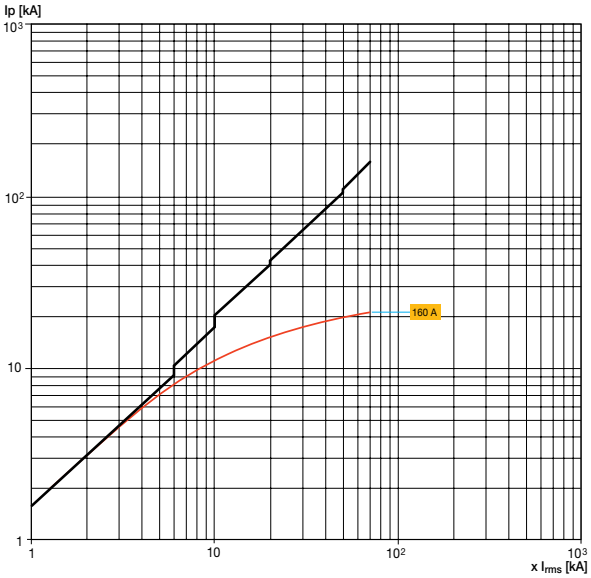
Characteristic curves
Limiting curves

500V

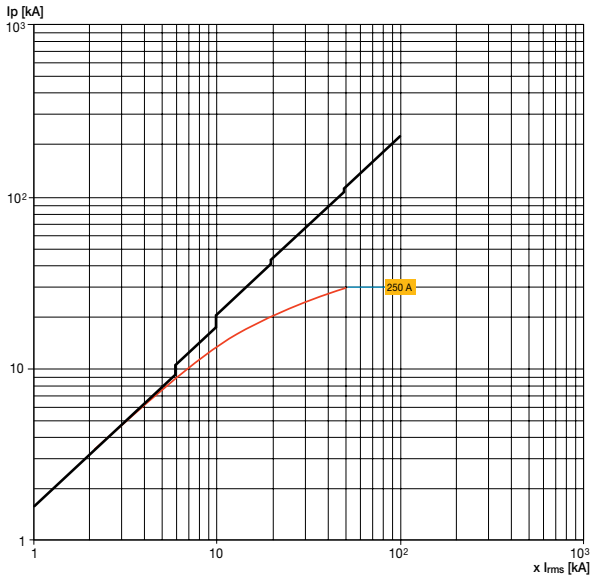
XT1
500V



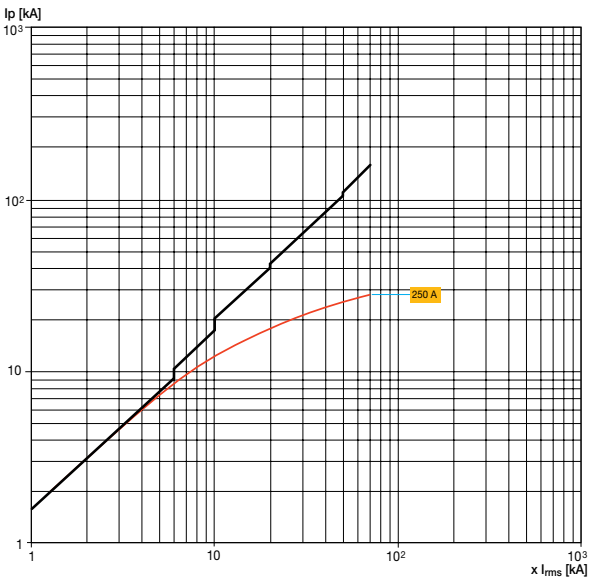
XT2
500V



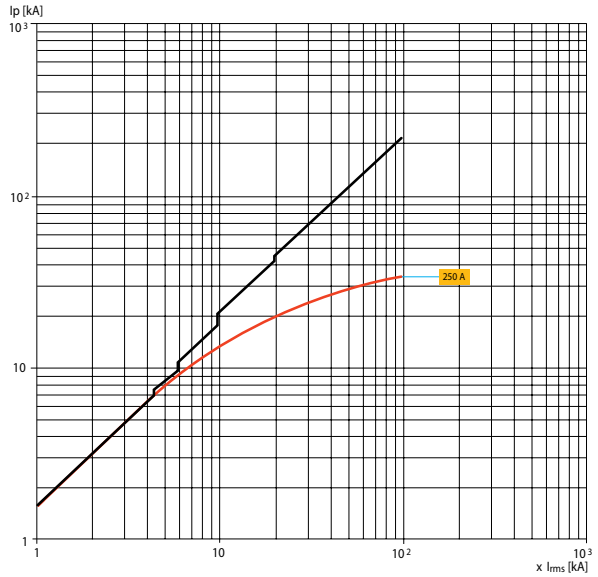
XT3
500V



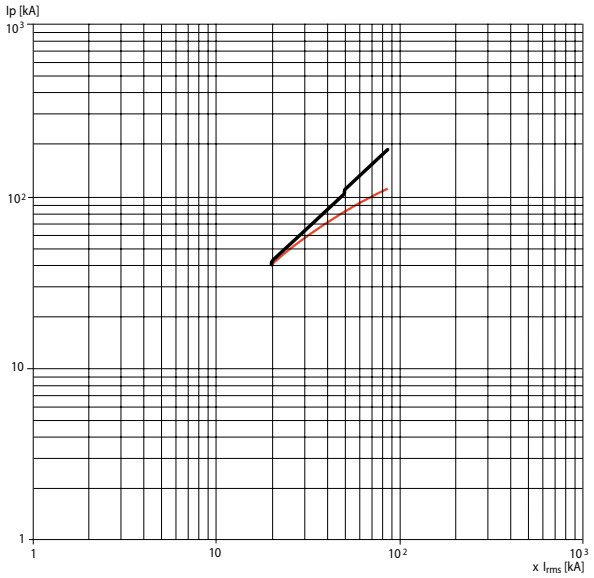
XT4 N-S-H-L-V
500V



XT4X
500V



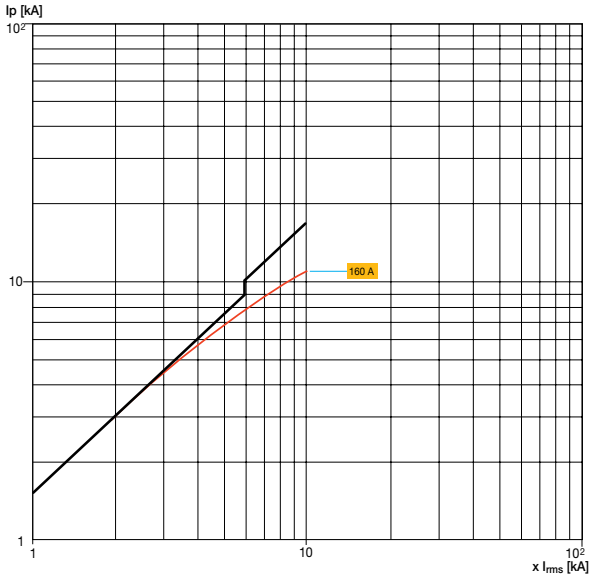
XT7 - XT7 M S-H-L
500V



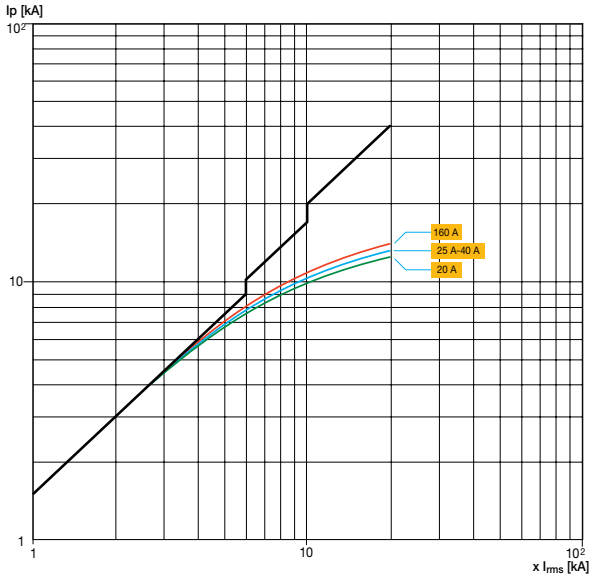
Characteristic curves
Limiting curves

690V

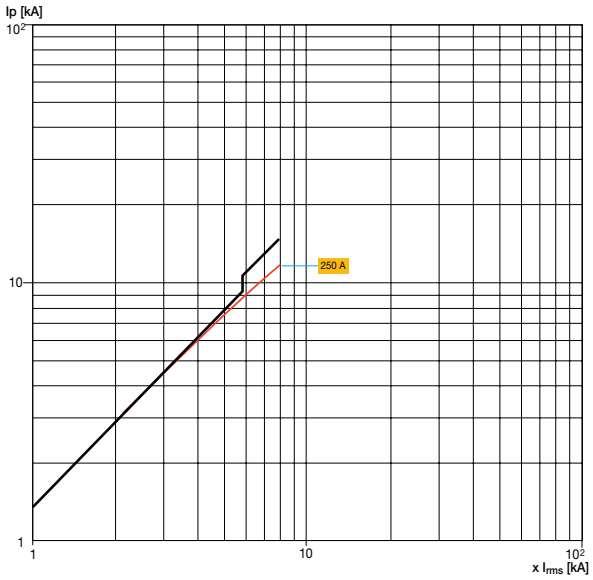
XT1
690V



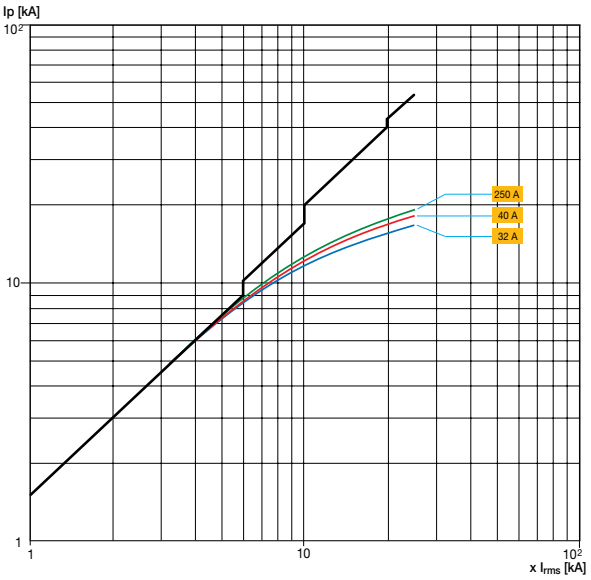
XT2
690V



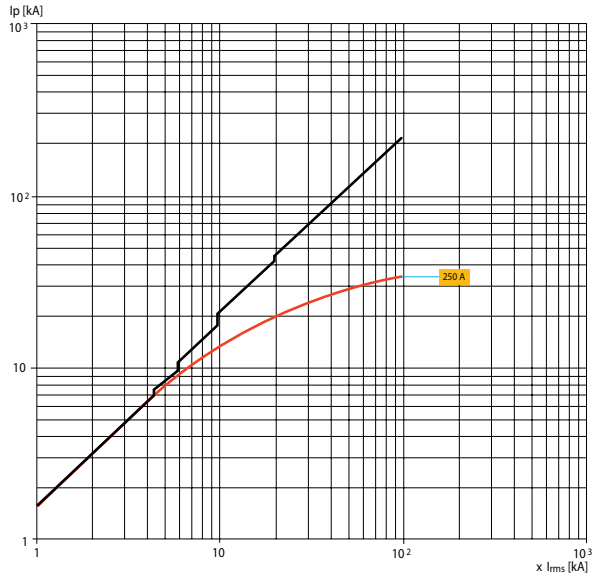
XT3
690V



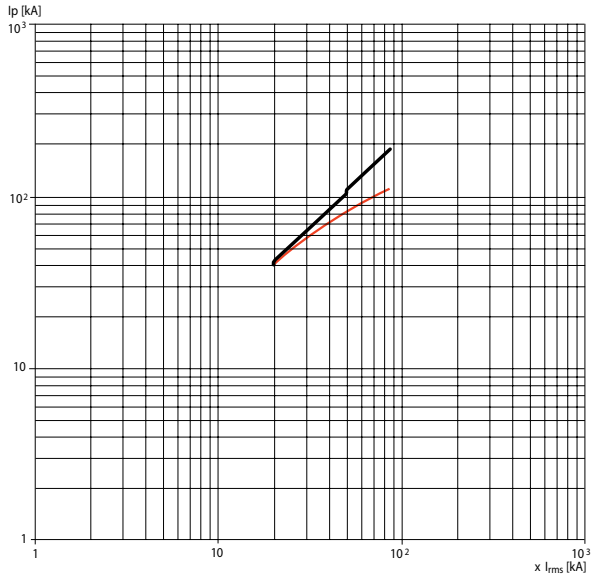
XT4 N-S-H-L-V
690V



XT4X
690V



XT7 - XT7 M S-H-L
690V



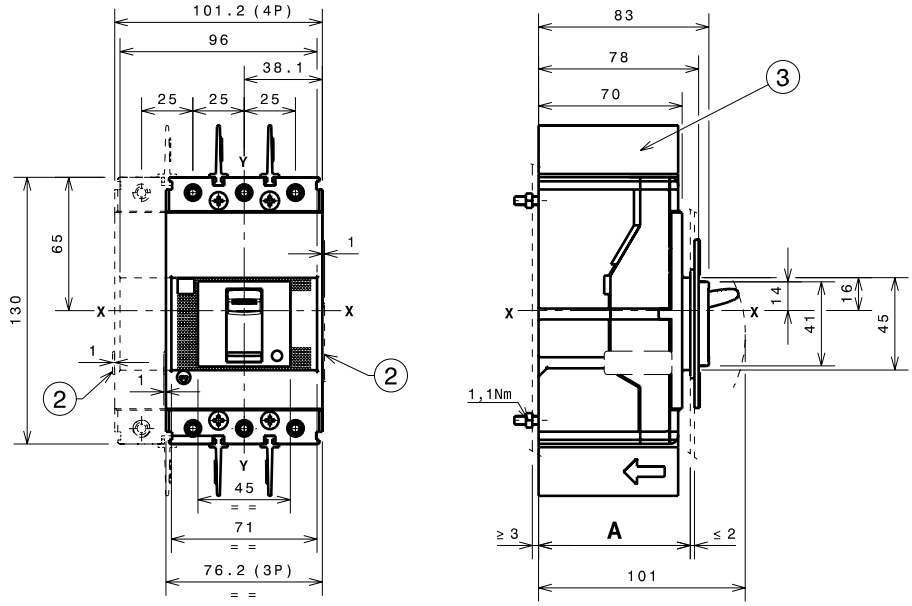
Overall dimensions

Tmax XT1 – Installation

Installation for fixed circuit-breaker

Fixing on support sheet

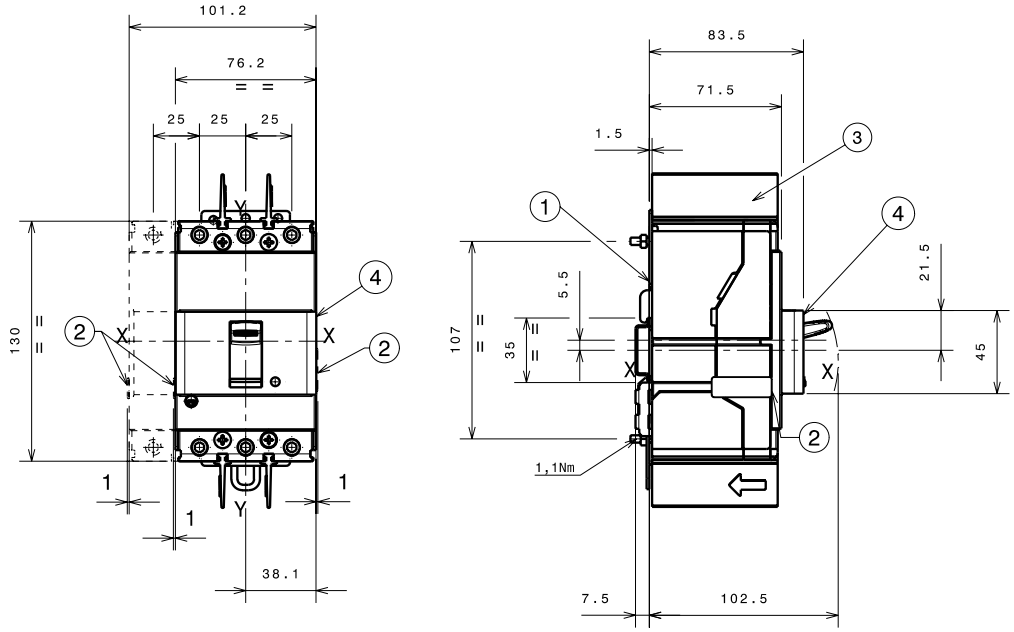
Key
2 Overall dimension of optional wiring ducts
3 25mm insulating barriers between phases (compulsory) provided



		A
With standard flange	III - IV	74
Without flange	III - IV	71
	III - IV	79

Fixing on DIN 50022 rail

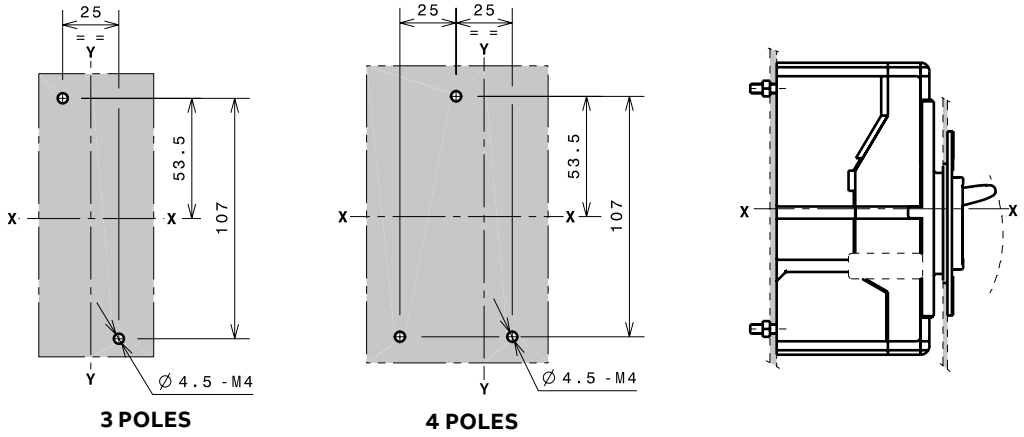
Key
1 Bracket for fixing
2 Overall dimension of optional wiring ducts
3 25mm insulating barriers between phases (compulsory) provided
4 Optional front cover for DIN rail



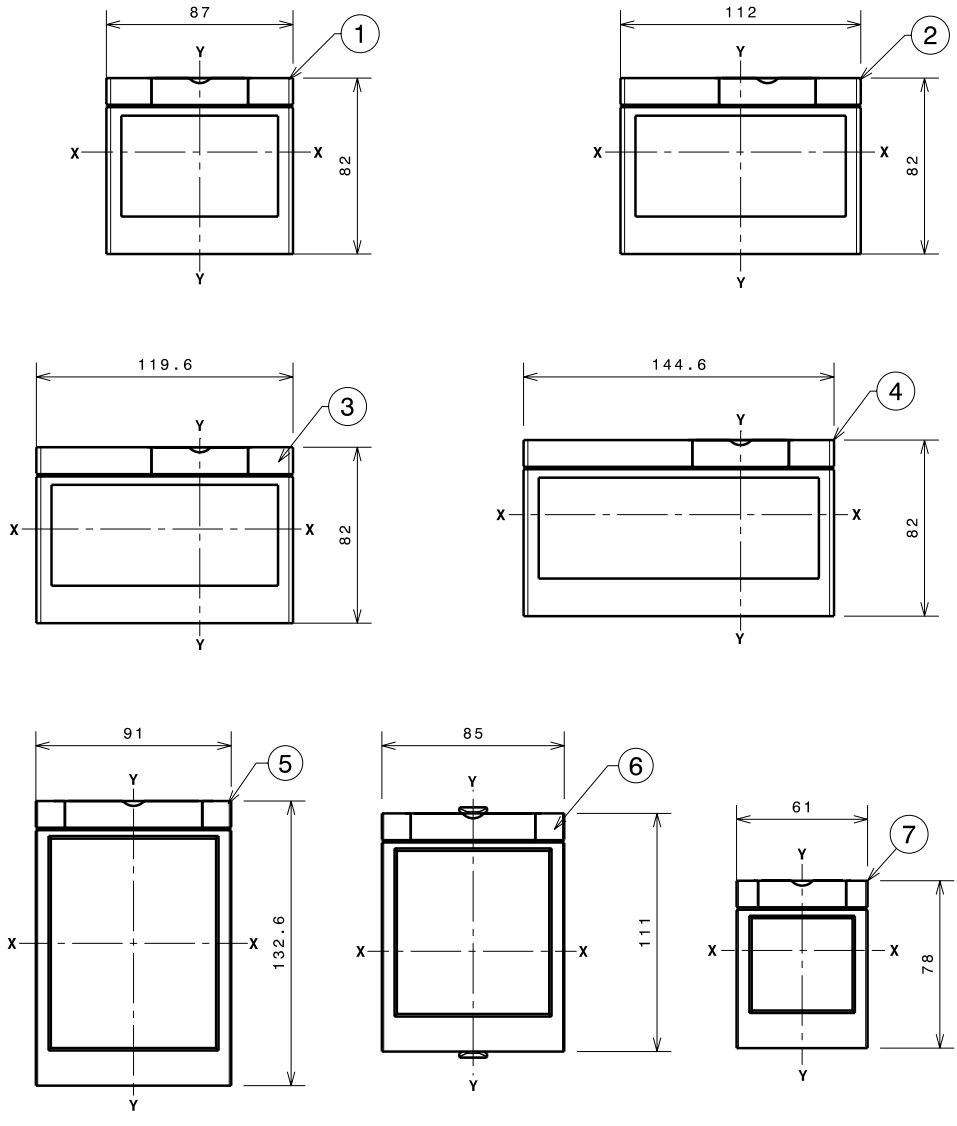
Tmax XT1 – Installation

Installation for fixed circuit-breaker

Drilling templates for circuit-breaker fixing



Flanges

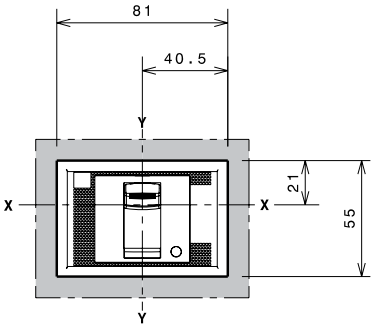


Key

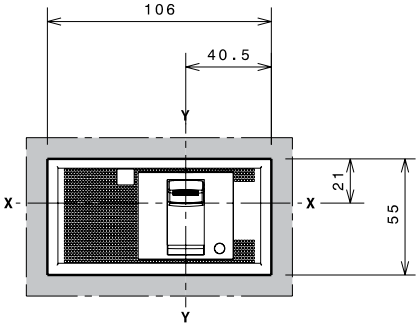
1 Flange for circuit-breaker III
2 Flange for circuit-breaker IV
3 Flange for circuit-breaker III with RC Sel - RC Inst residual current release
4 Flange for circuit-breaker IV with RC Sel - RC Inst residual current release
5 Flange for fixed circuit-breaker III-IV with direct motor operator (MOD)
6 Flange for circuit-breaker III-IV with direct rotary handle (RHD)
7 Optional flange

Drilling templates compartment door

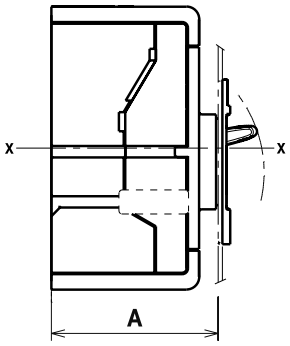
With standard flange



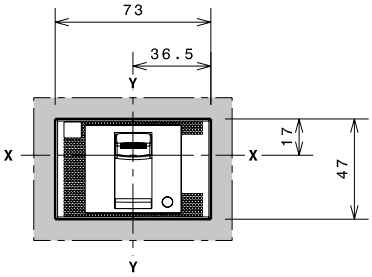
A=74
3 POLES



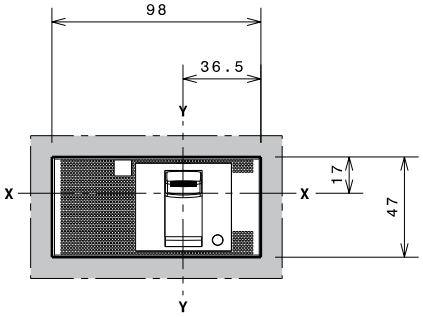
A=74
4 POLES



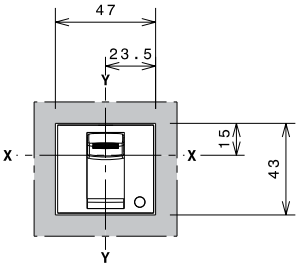
Without flange



A=71
3 POLES

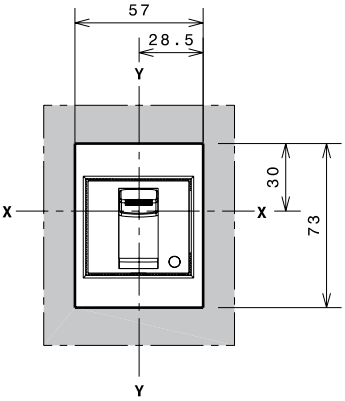


A=71
4 POLES

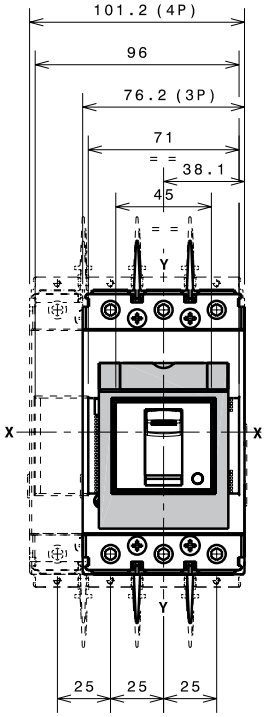


A=79
3-4 POLES

With optional flange



A=79
3-4 POLES

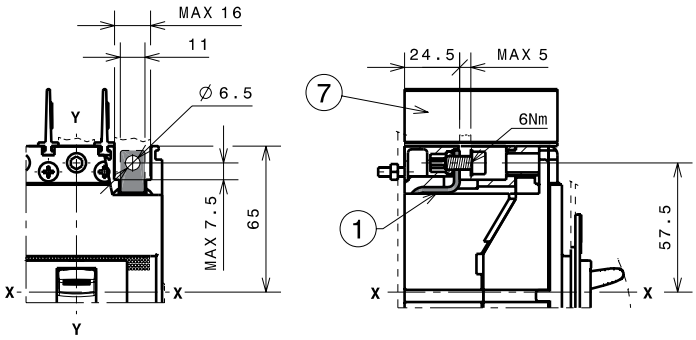


Tmax XT1 – Installation

Terminals for fixed circuit-breaker

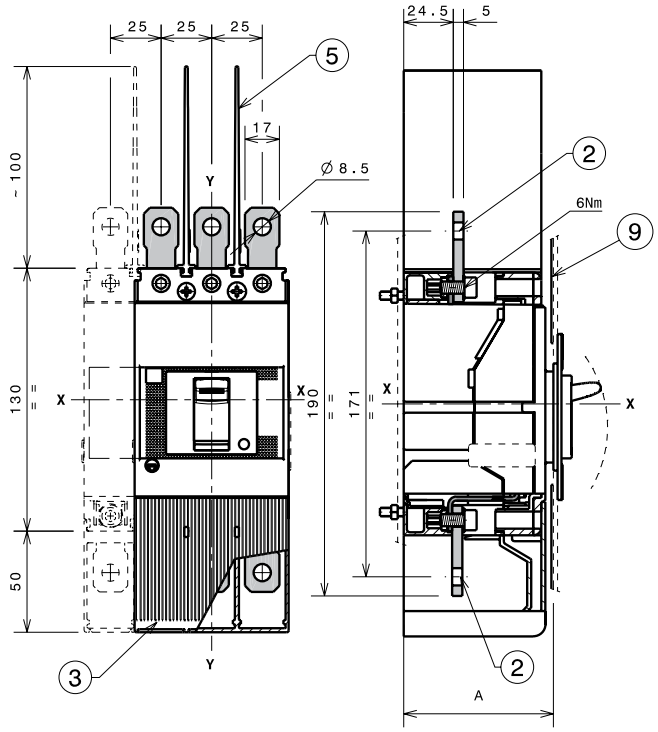
Terminals F

Key
1 Front terminals for busbars connection
7 25mm insulating barriers between phases (compulsory) provided



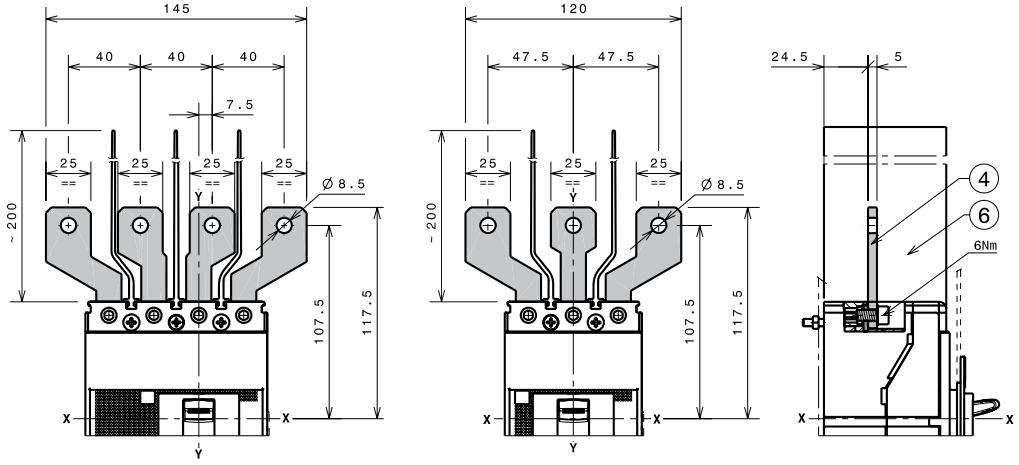
Terminals EF

Key
2 Front extended terminals
3 High terminal covers with degree of protection IP40 (optional) not provided
5 100mm insulating barriers between phases (compulsory) provided
9 Internal insulating plate compulsory with phase barriers (customer attention)



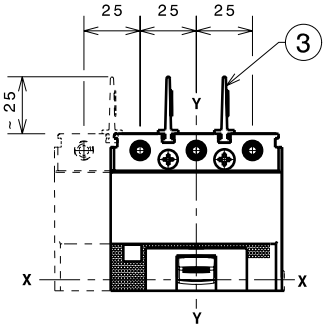
Terminals ES

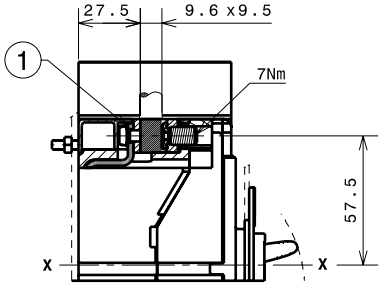
Key
4 Front extended spread terminals for busbar connection
6 200mm insulating barriers between phases (compulsory) provided



1x1.5...50mm² terminals FCCuAl

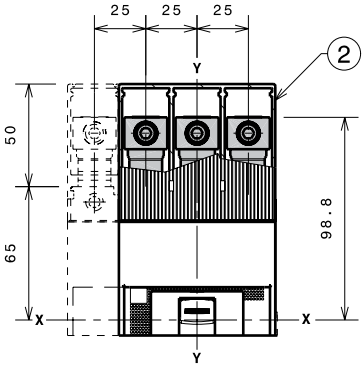
—
Key
1 1x1.5...50mm² front terminal FCCuAl
3 25mm insulating barriers between phases (compulsory) provided

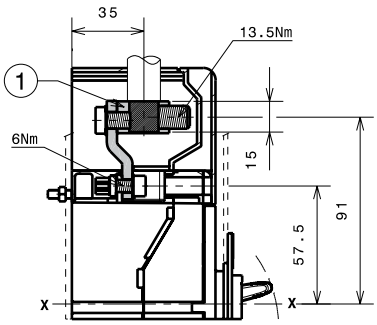




1x35...95mm² terminals FCCuAl

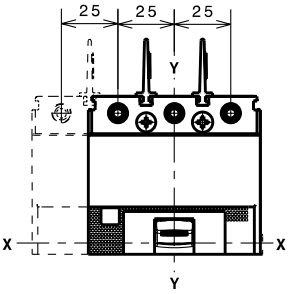
—
Key
1 External terminal FCCuAl
2 High terminal covers with degree of protection IP40 (optional) provided

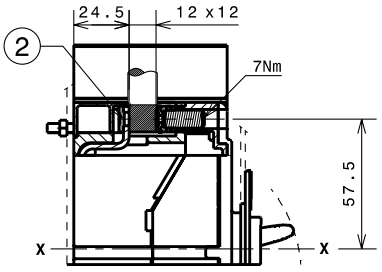




Terminals FCCu

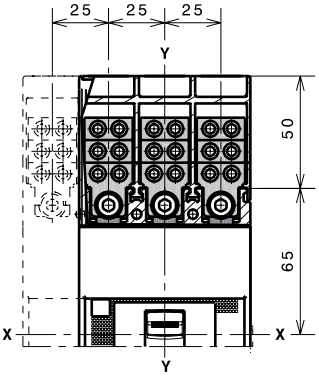
—
Key
2 Front terminal FCCu

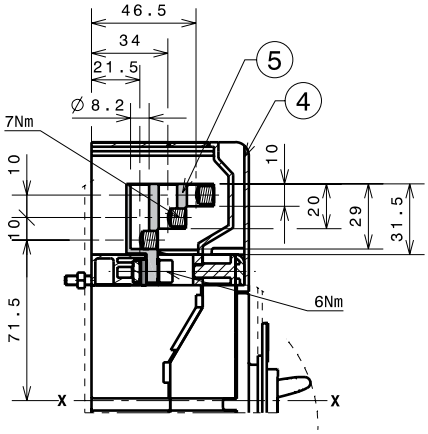




Terminals MC

—
Key
4 Terminal covers with degree of protection IP40 (compulsory) provided
5 Front terminal for multicable connection

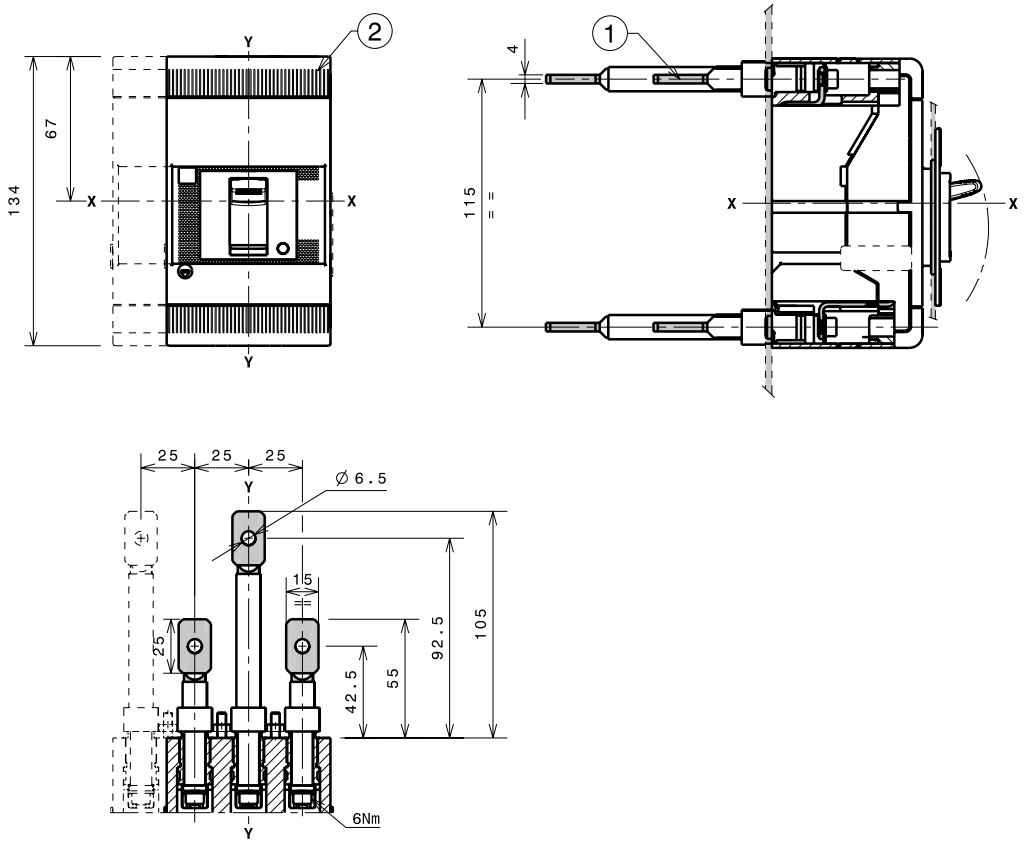


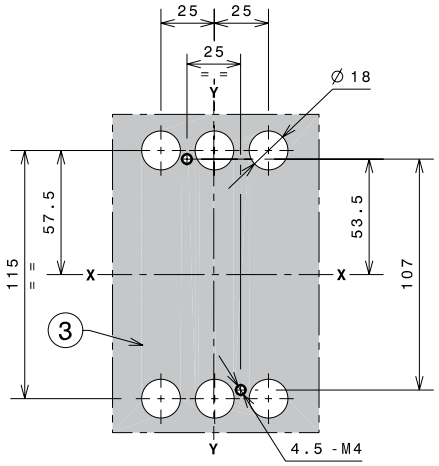


Tmax XT1 – Installation

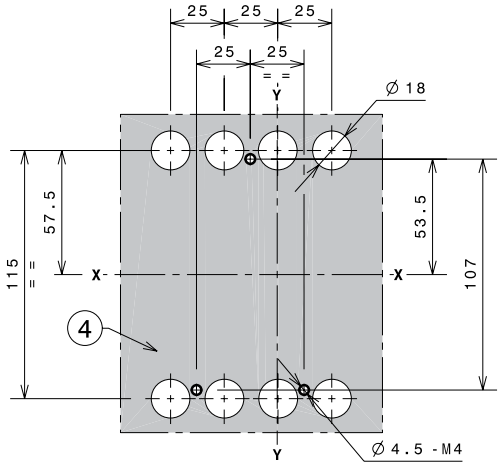
Terminals for fixed circuit-breaker

Terminals R





3 POLES

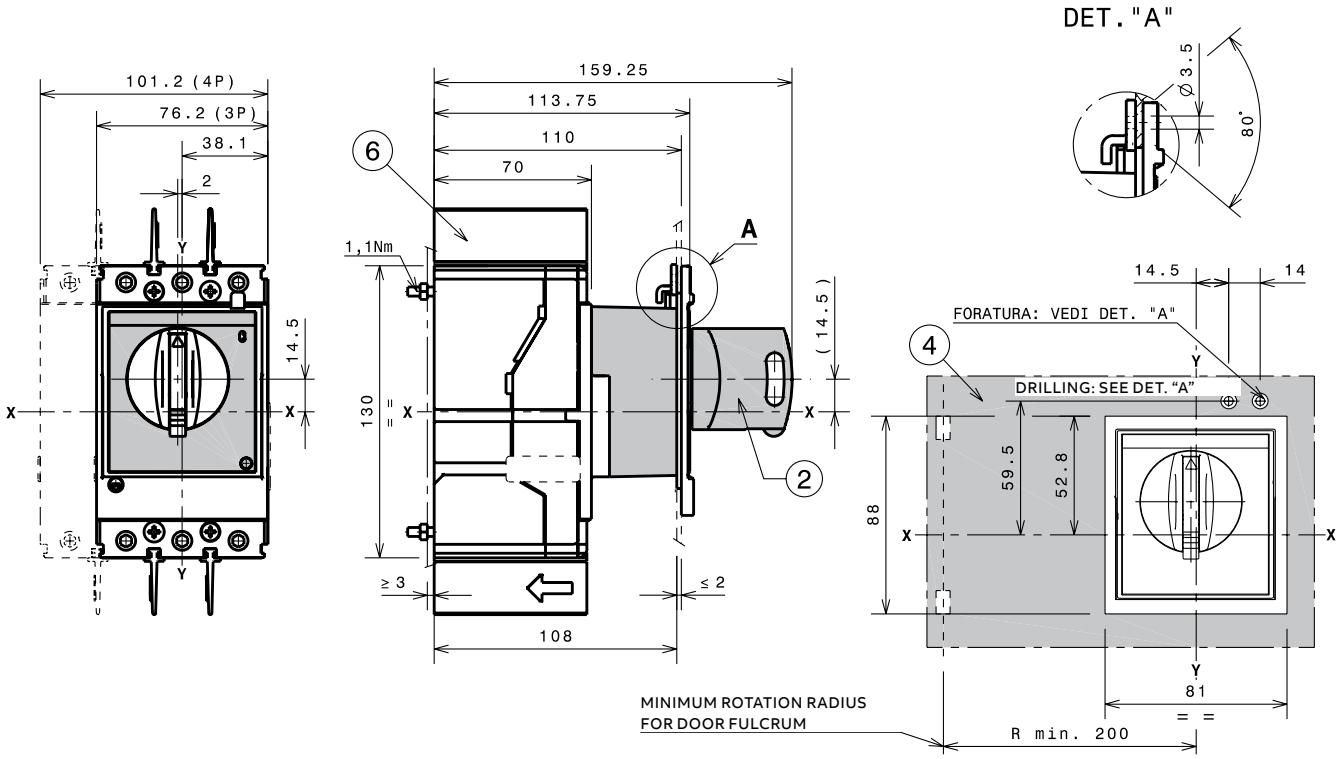


4 POLES

Key
1 Adjustable rear terminals
2 Bottom terminal covers with degree of protection IP30 (optional) not provided
3 Drilling template for circuit-breaker III fixing on sheet
4 Drilling template for circuit-breaker IV fixing on sheet

Tmax XT1 – Installation
Accessories for fixed circuit-breaker

Rotary handle operating mechanism on circuit-breakers (RHD)



—

Key

2 Rotary handle operating mechanism on circuit-breaker RHD

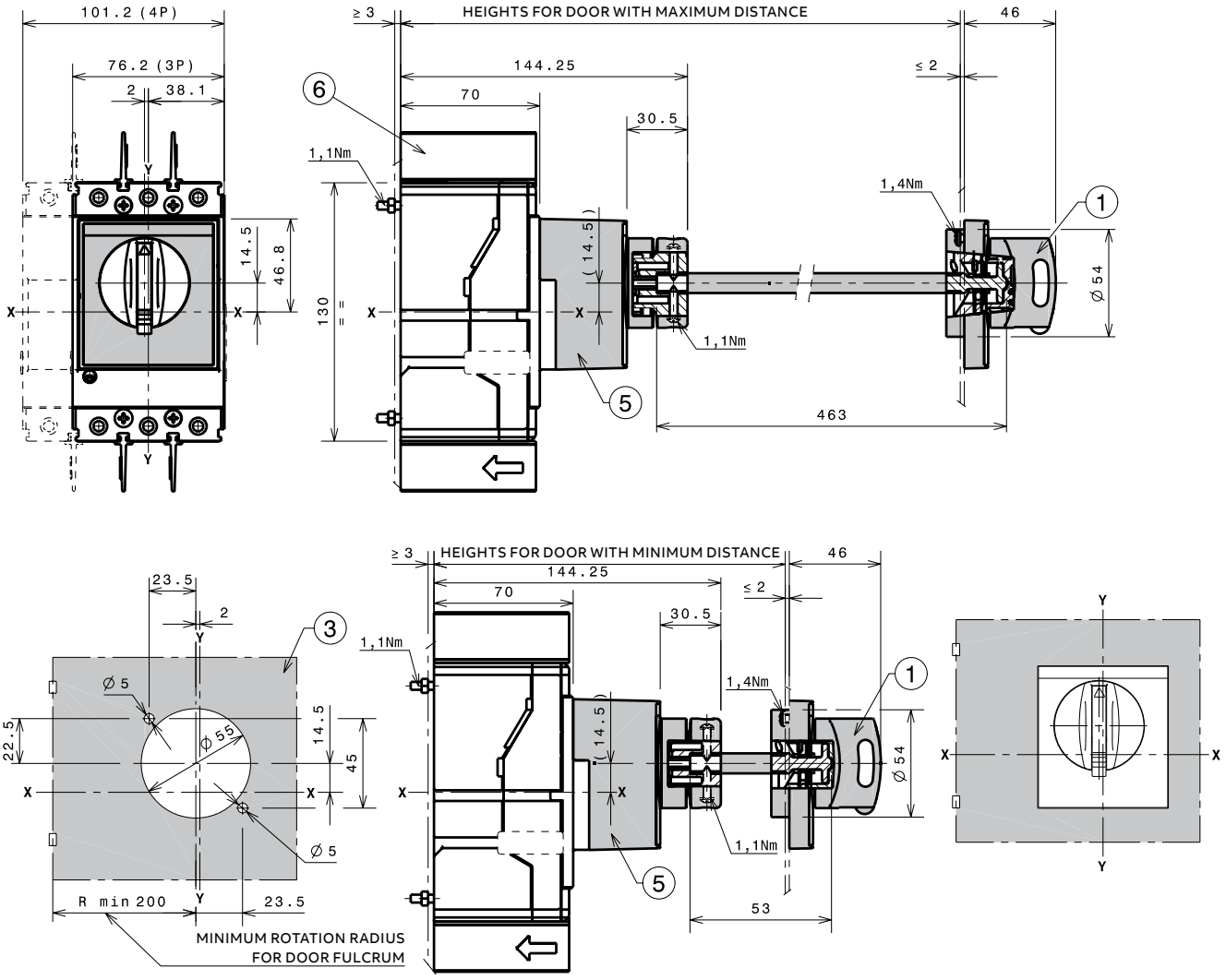
4 Door drilling template with direct rotary handle

6 25mm insulating barriers between phases (compulsory) provided

Tmax XT1 – Installation

Accessories for fixed circuit-breaker

Rotary handle operating mechanism on the compartment door (RHE)

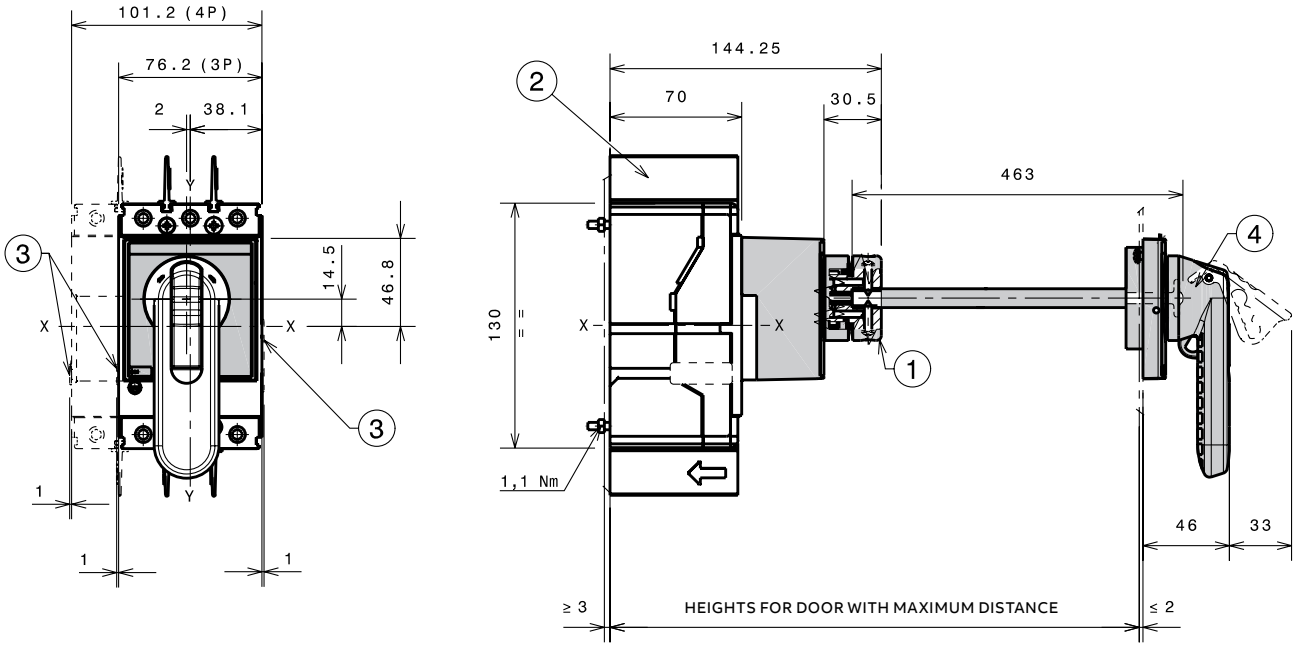


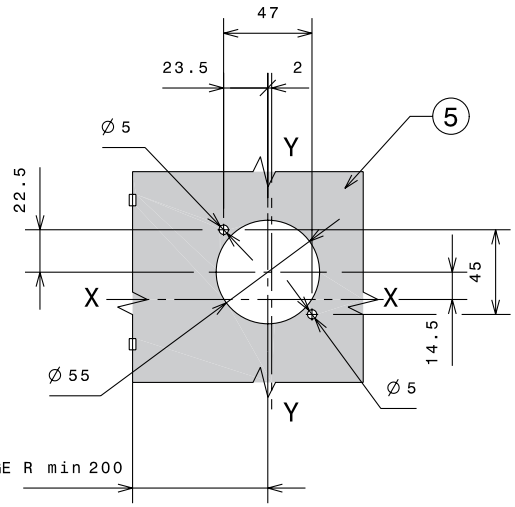
—

Key

1 Transmitted rotary handle
3 Door drilling template with transmitted rotary mandly
5 Transmission unit
6 25mm insulating barriers between phases provided with circuit-breaker

Large rotary handle operating mechanism on the compartment door (RHE-LH)





—

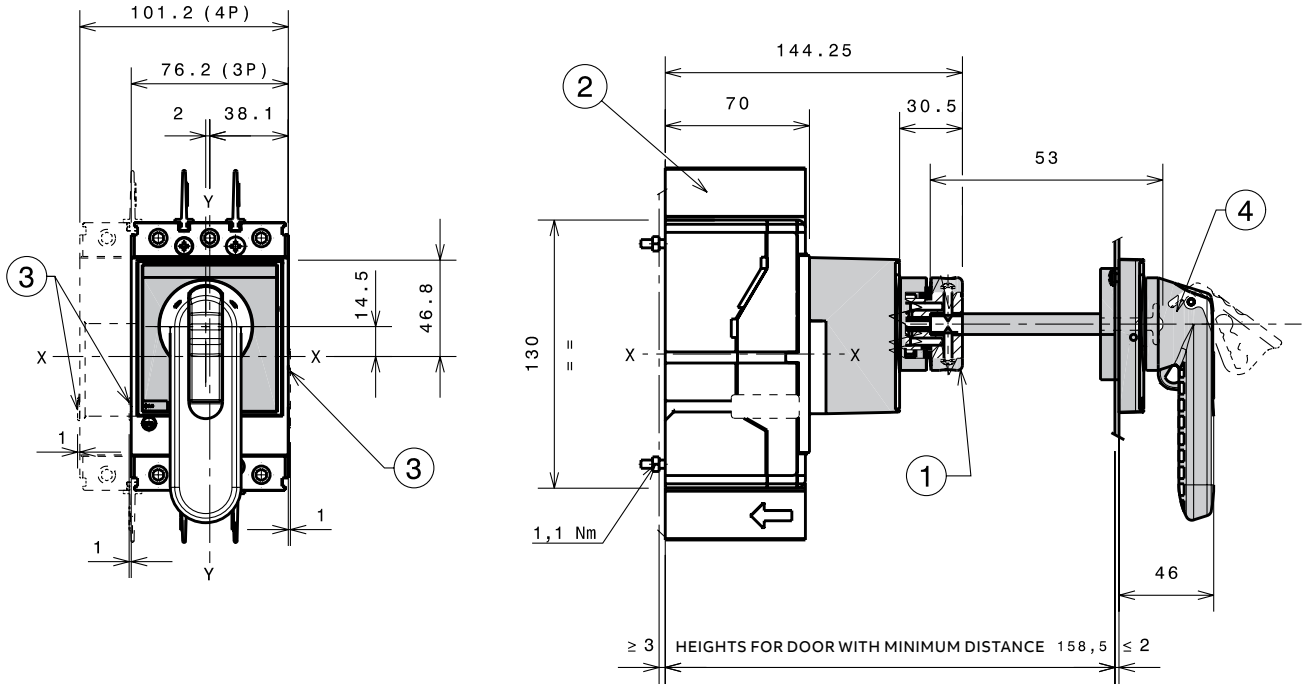
Key

1 Transmission unit
2 25mm insulating barriers between phases provided with circuit-breaker
3 Optional wiring ducts
4 Wide type rotary handle
5 Door drilling template with transmitted rotary handle

Tmax XT1 – Installation

Accessories for fixed circuit-breaker

Large rotary handle operating mechanism on the compartment door (RHE-LH)

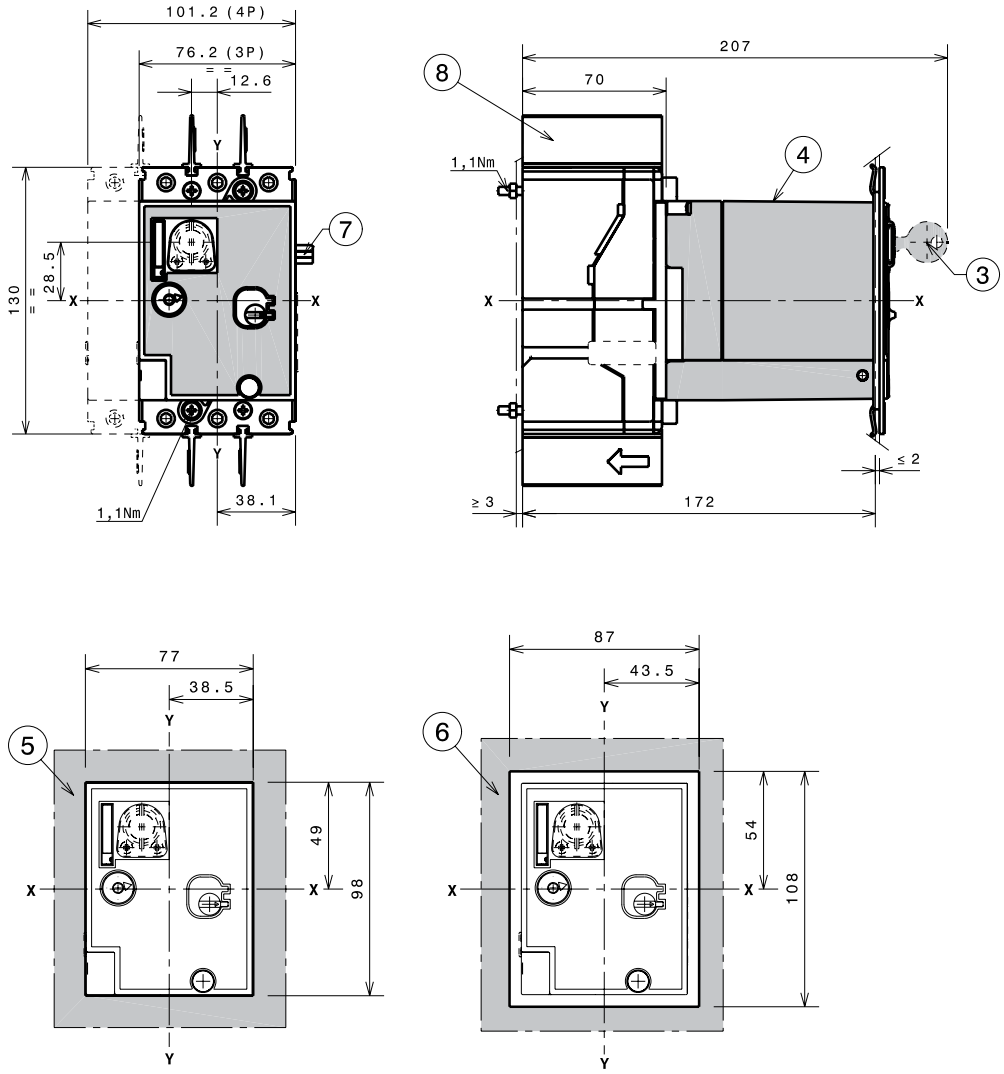


—

Key

1 Transmission unit
2 25mm insulating barriers between phases (compulsory) provided
3 Optional wiring ducts
4 Wide type rotary handle
5 Door drilling template with transmitted rotary handle

Direct motor operator (MOD)



—

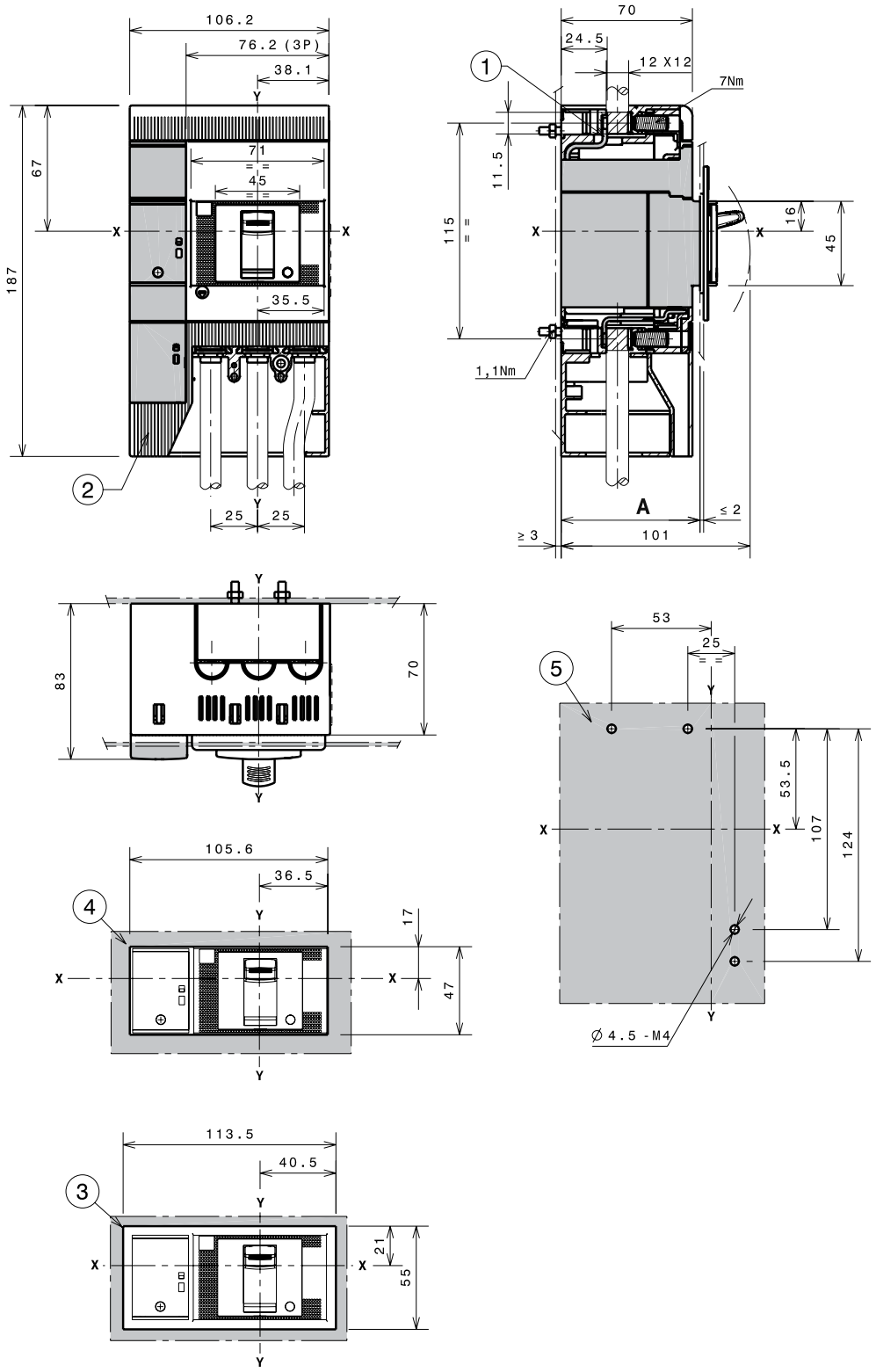
Key

3 Key lock (on request)
4 Direct motor operator (MOD)
5 Drilling template of door with MOD without flange
6 Drilling template of door with MOD with flange
7 Cables connection
8 25mm phase barriers

Tmax XT1 – Installation

Accessories for fixed circuit-breaker

Direct motor operator (MOD)

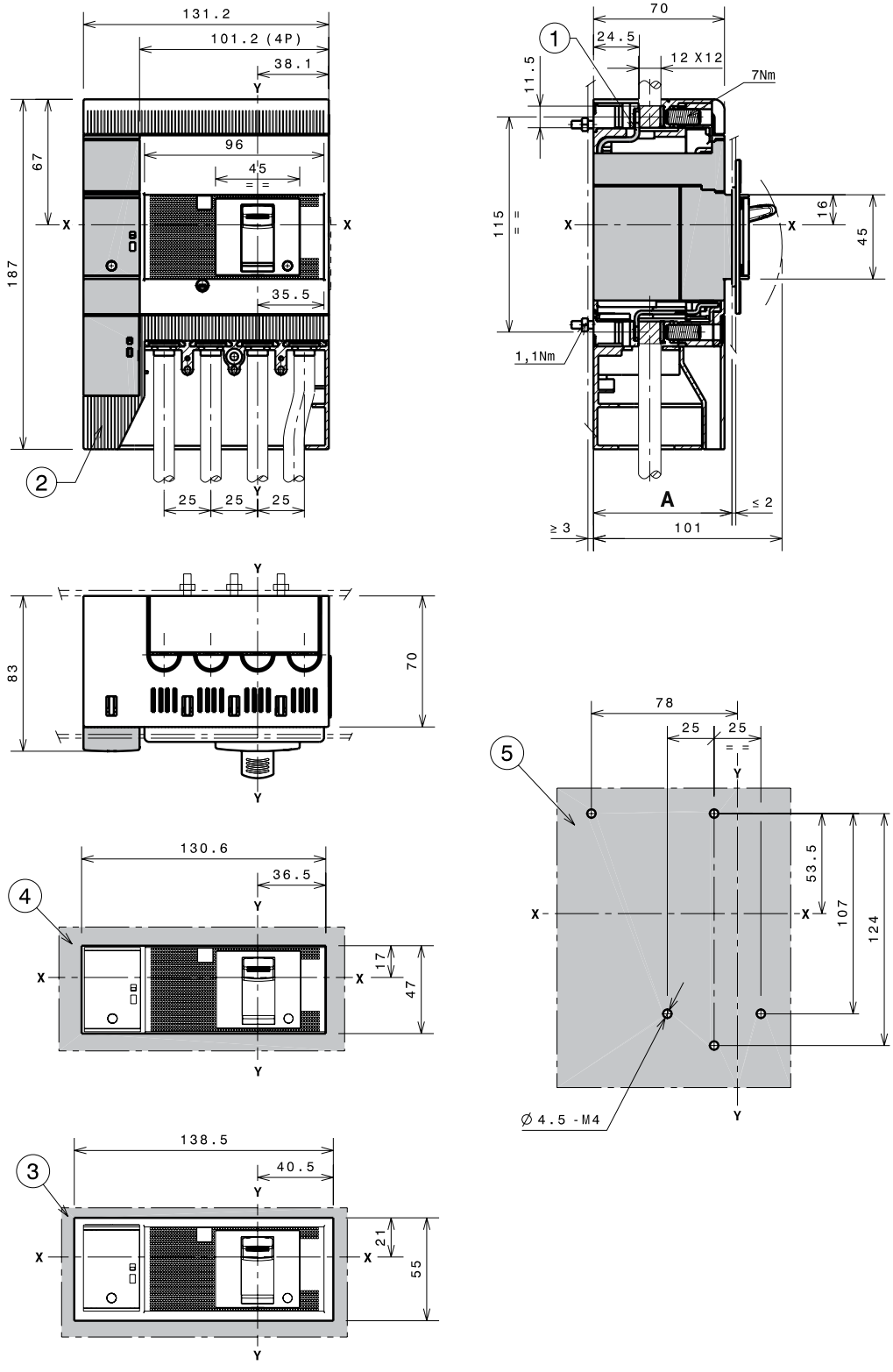


Key

1 Front terminals for busbars connection
2 Terminal covers with degree of protection IP40
3 Drilling template of door with direct rotary handle with flange
4 Drilling template of door with direct rotary handle without flange
5 Drilling template for circuit-breaker fixing on sheet

		A
With standard flange	III	74
Without flange	III	71

RC Inst and RC Sel residual current release for 4 poles circuit-breaker



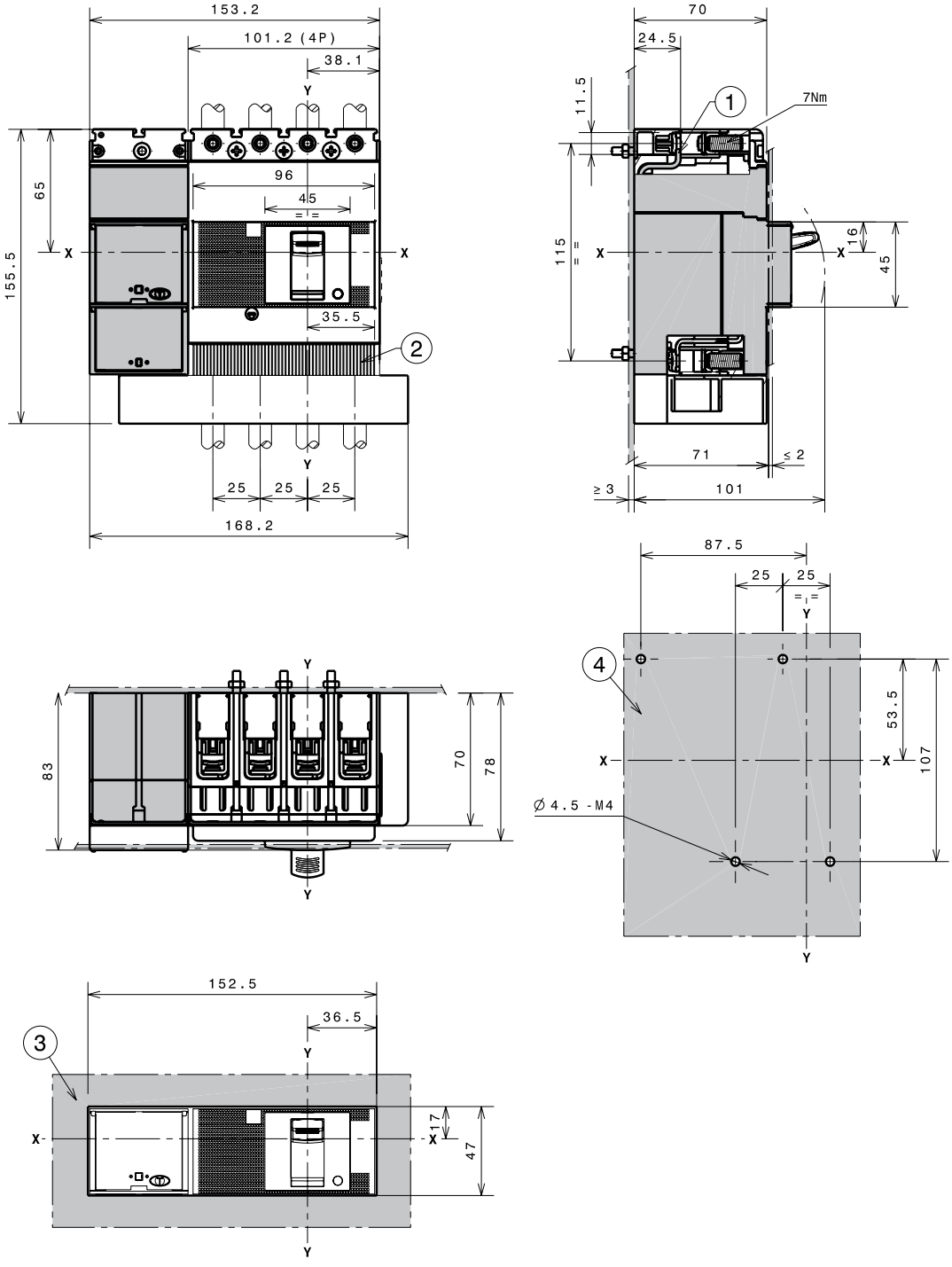
Key
1 Front terminals for busbars connection
2 Terminal covers with degree of protection IP40
3 Drilling template of door with direct rotary handle with flange
4 Drilling template of door with direct rotary handle without flange
5 Drilling template for circuit-breaker fixing on sheet

		A
With standard flange	IV	74
Without flange	IV	71

Tmax XT1 – Installation

Accessories for fixed circuit-breaker

RC Sel 200 4 poles residual current release



Key

1 Front terminals for busbars connection
2 Terminal covers with degree of protection IP40
3 Drilling template of door with direct rotary handle
4 Drilling template for circuit-breaker fixing on sheet

Tmax XT1 – Installation

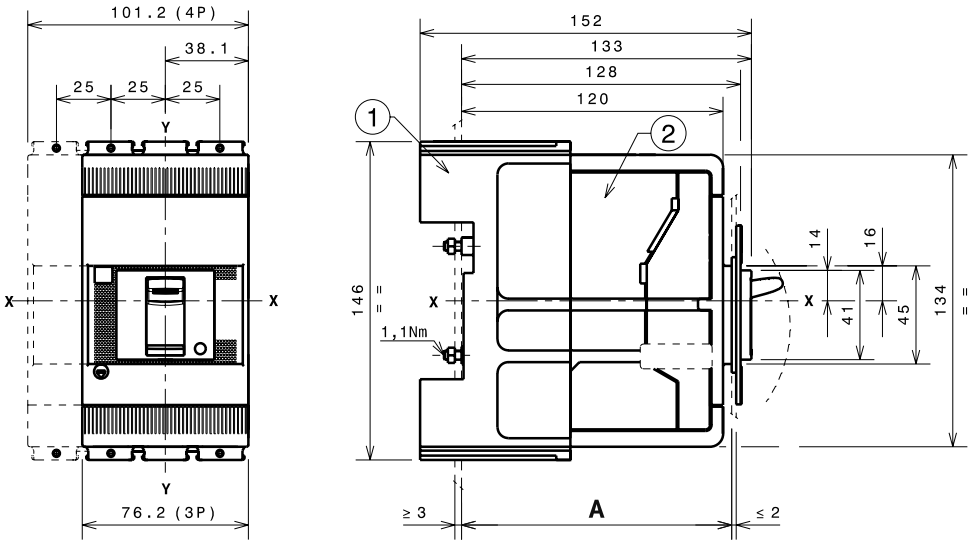
Installation for plug-in circuit-breaker

Fixing on support sheet

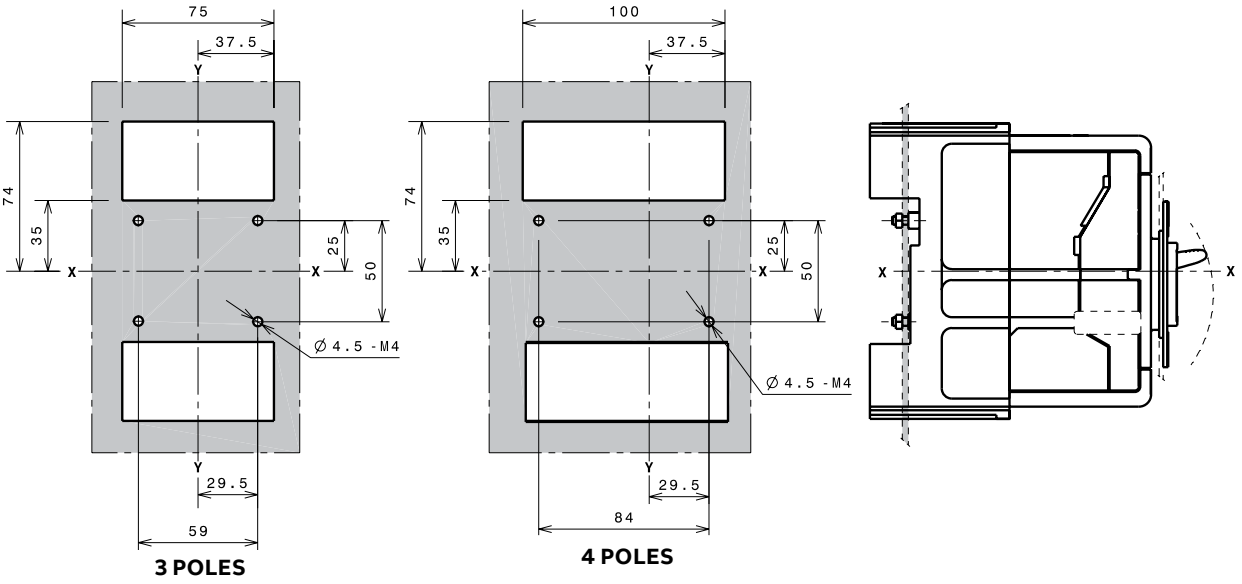
Key
1 Fixed part
2 Moving part

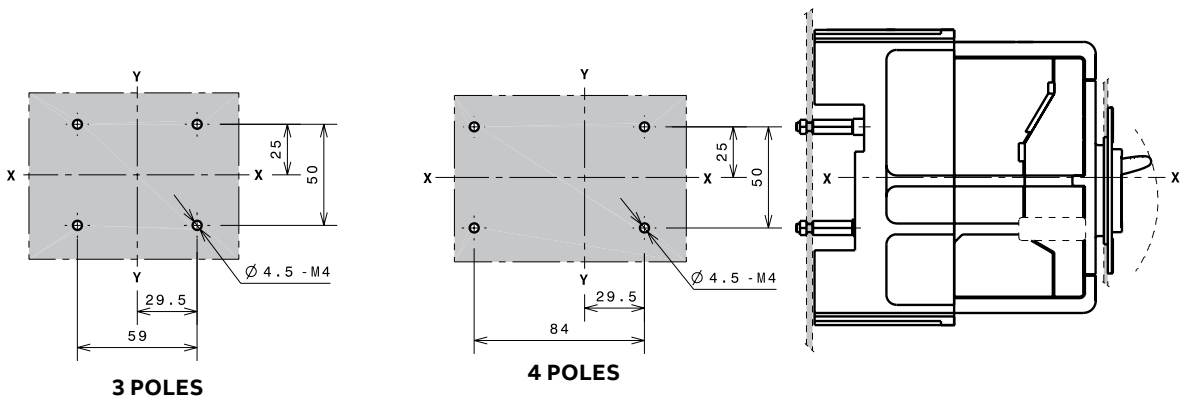
		A
With standard flange	III-IV	124
Without flange	III-IV	121
	III-IV	129

		A
With standard flange	III-IV	144
Without flange	III-IV	141
	III-IV	149



Drilling templates for fixing circuit-breaker

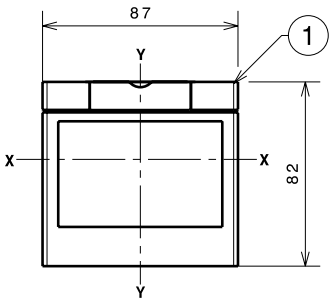


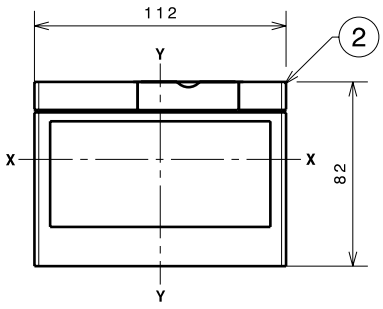


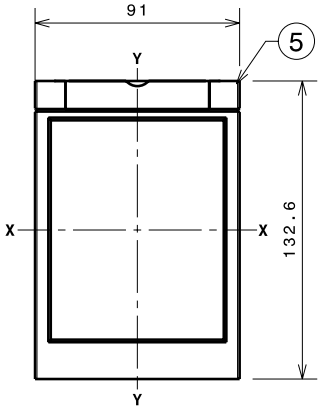
Tmax XT1 – Installation

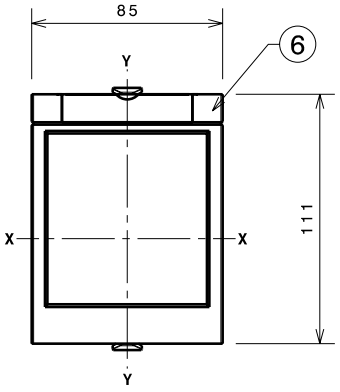
Installation for plug-in circuit-breaker

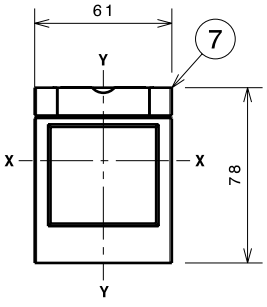
Flanges











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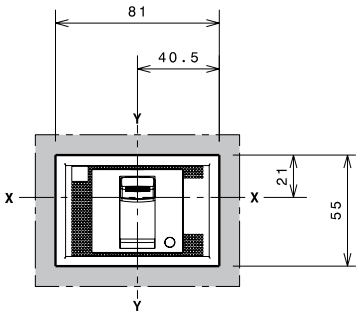
Key

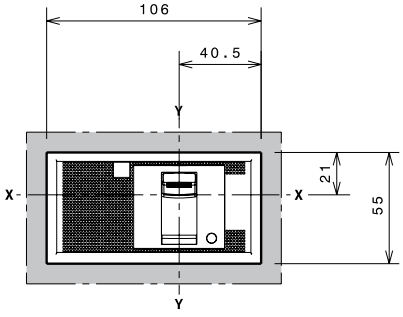
1 Flange for plug-in circuit-breaker III
2 Flange for circuit-breaker IV
5 Flange for plug-in circuit-breaker III-IV with direct motor operator (MOD)
6 Flange for plug-in circuit-breaker III-IV with direct rotary handle RHD
7 Optional flange

Drilling templates compartment door

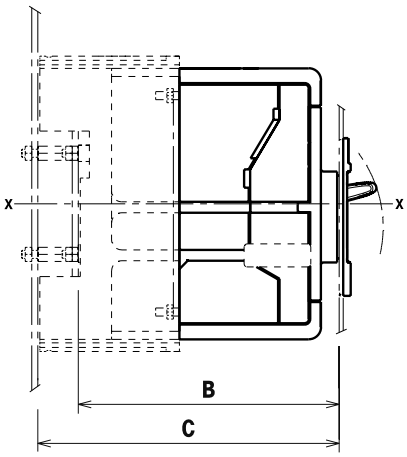
With standard flange



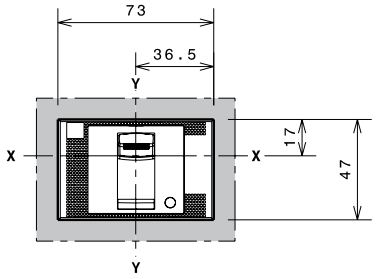
B=124 C=144
3 POLES



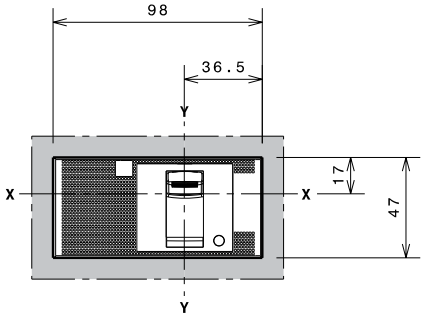
B=124 C=144
4 POLES



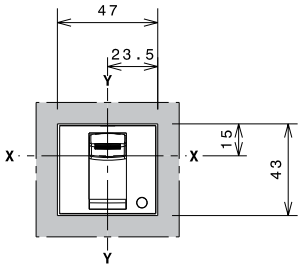
Without flange



B=121 C=141
3 POLES

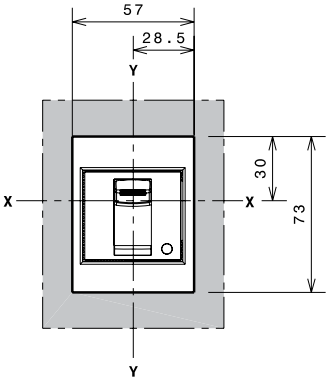


B=121 C=141
4 POLES

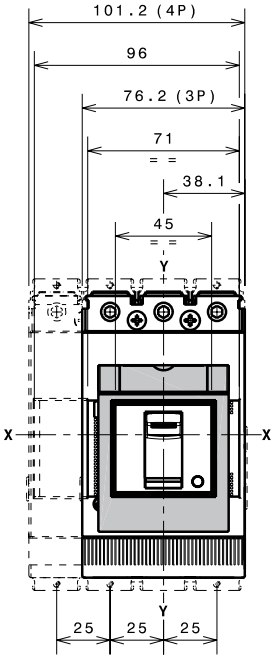


B=129 C=149
3-4 POLES

With optional flange



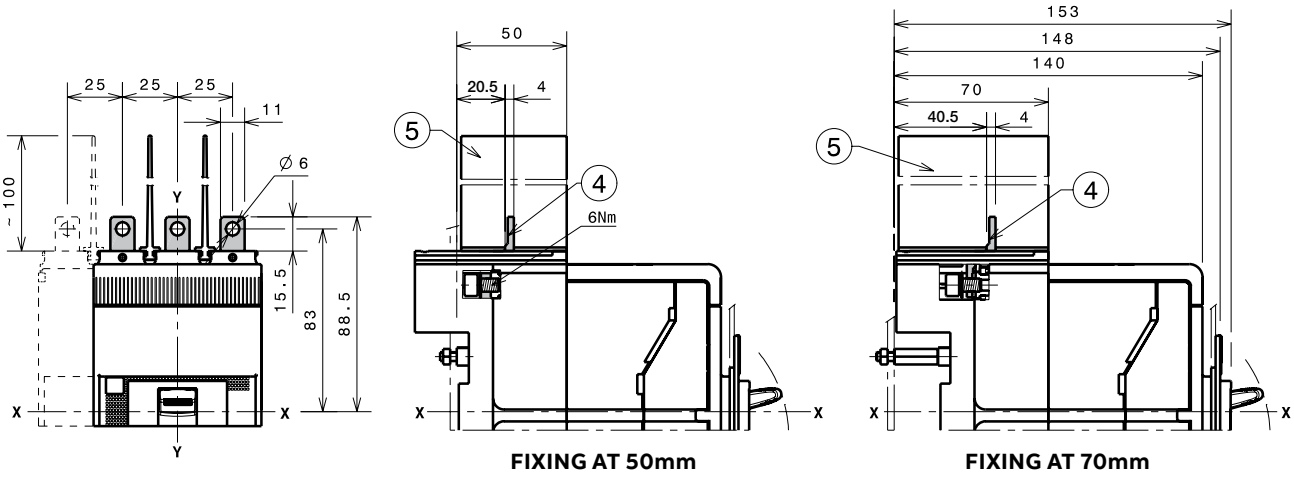
B=129 C=149
3-4 POLES



Tmax XT1 – Installation

Terminals for plug-in circuit-breaker

Terminals EF



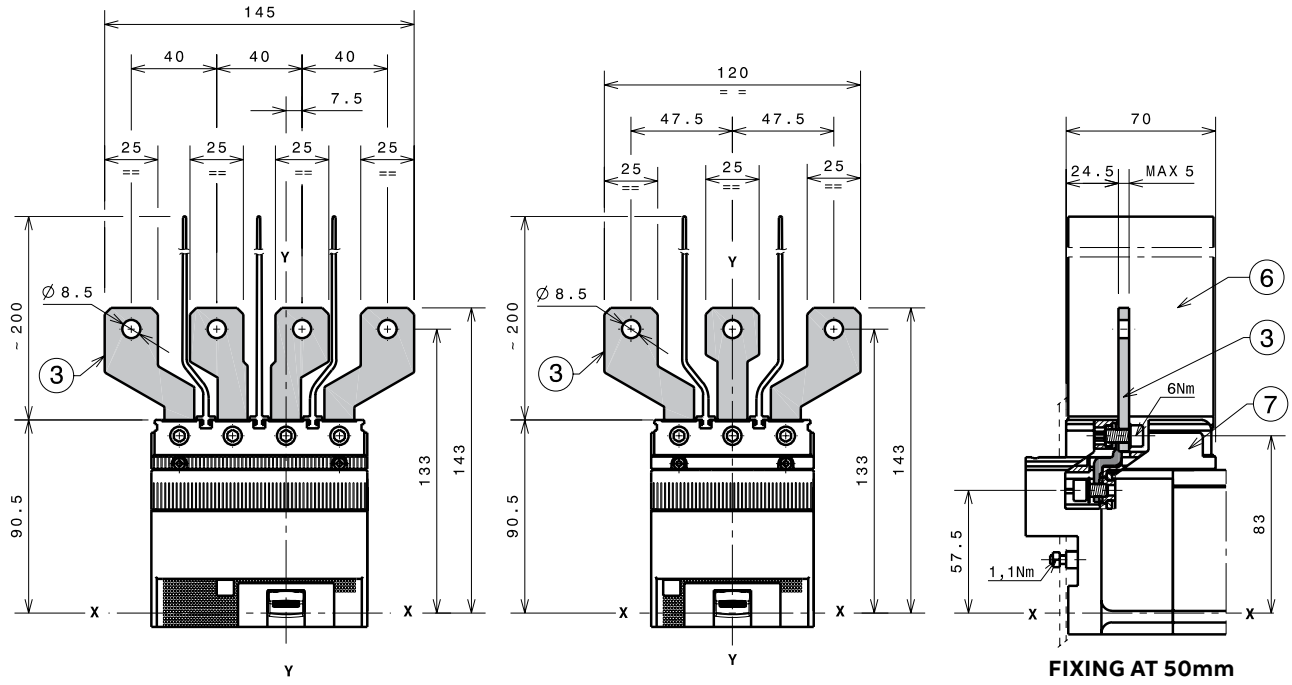
—

Key

4 Front extended terminals

5 100mm insulating barriers between phases (compulsory) provided

Terminals ES



—

Key

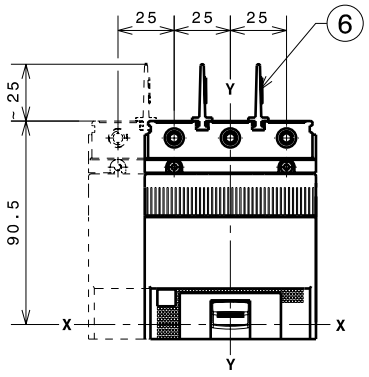
3 Front extended spread terminals

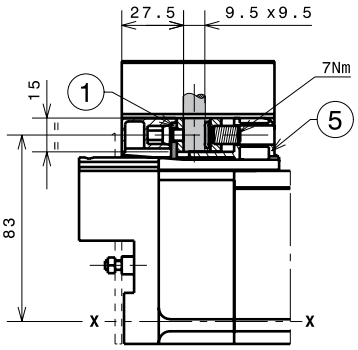
6 200mm insulating barriers between phases (compulsory) provided

7 Adaptor (compulsory) not provided

1x1.5...50mm² terminals FCCuAl

Key
1 1x1.5...50mm² front terminal FCCuAl
5 Adaptor (compulsory) optional
6 25mm insulating barriers between phases (compulsory) provided

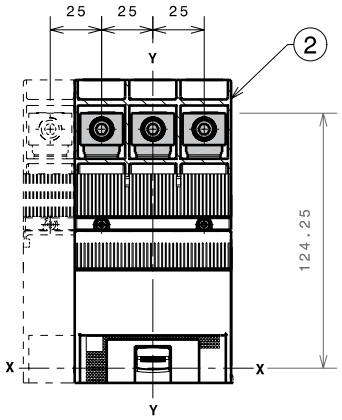


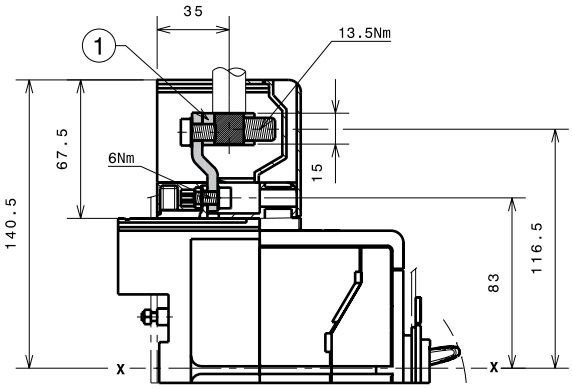


FIXING AT 50mm

1x35...95mm² terminals FCCuAl

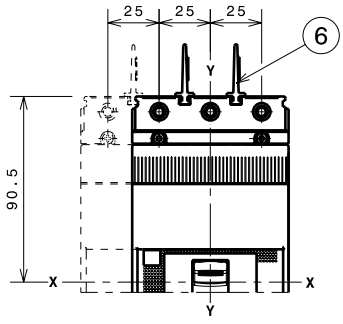
Key
1 External terminal FCCuAl
2 High terminal covers with degree of protection IP40 (optional) provided

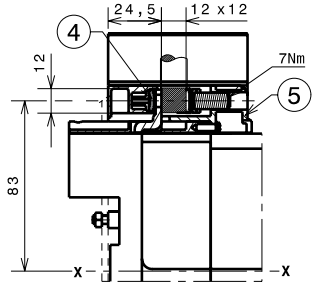




Terminals FCCu

Key
4 Terminals FCCu
5 Adaptor (compulsory) not provided
6 25mm insulating barriers between phases (compulsory) provided





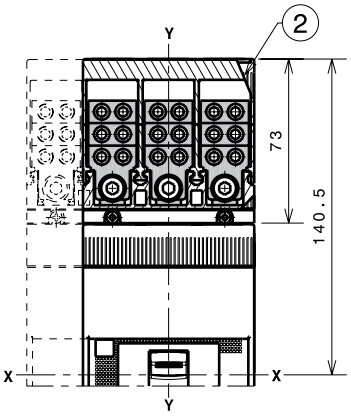
FIXING AT 50mm

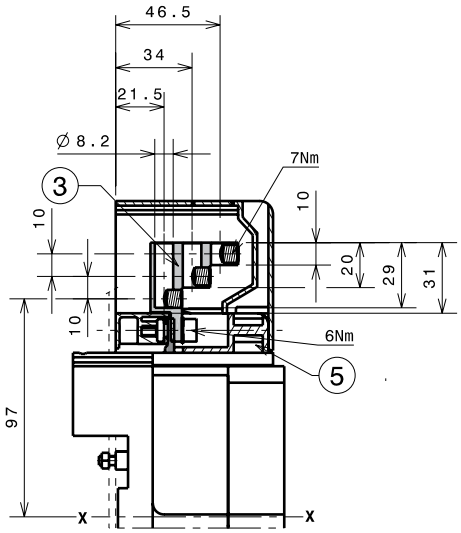
Tmax XT1 – Installation

Terminals for plug-in circuit-breaker

Terminals MC

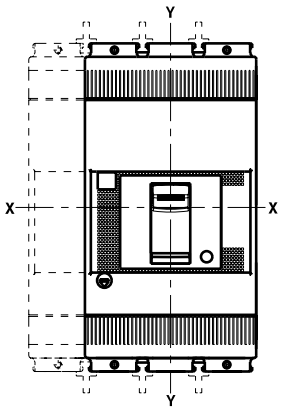
—
Key
2 Terminal covers with degree of protection IP40 (optional) provided
3 Front terminal for multicable connection
5 Adaptor (compulsory) not provided

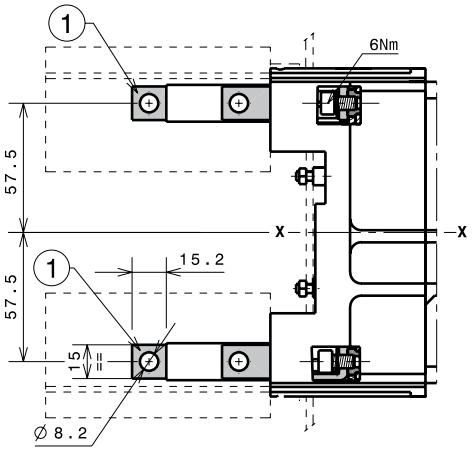




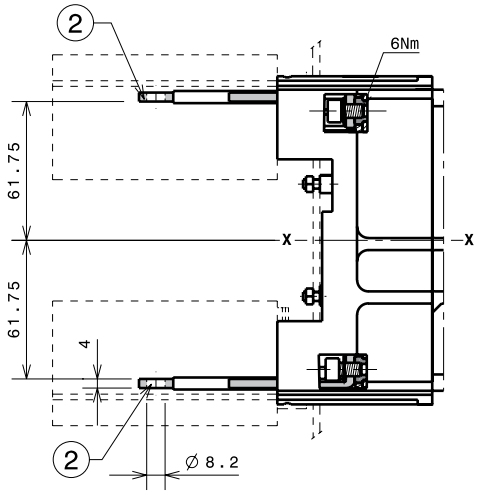
FIXING AT 50mm

Terminals HR/VR



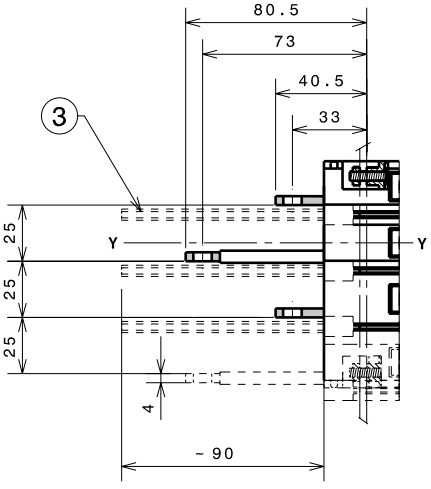


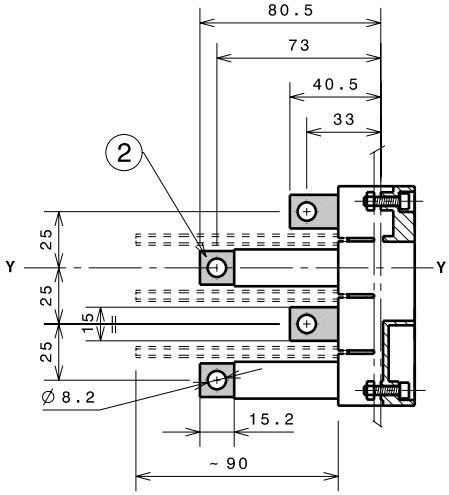
FIXING AT 50mm



FIXING AT 50mm

—
Key
1 Rear vertical terminals
2 Rear horizontal terminals
3 90mm insulating barriers between phases (compulsory) not provided

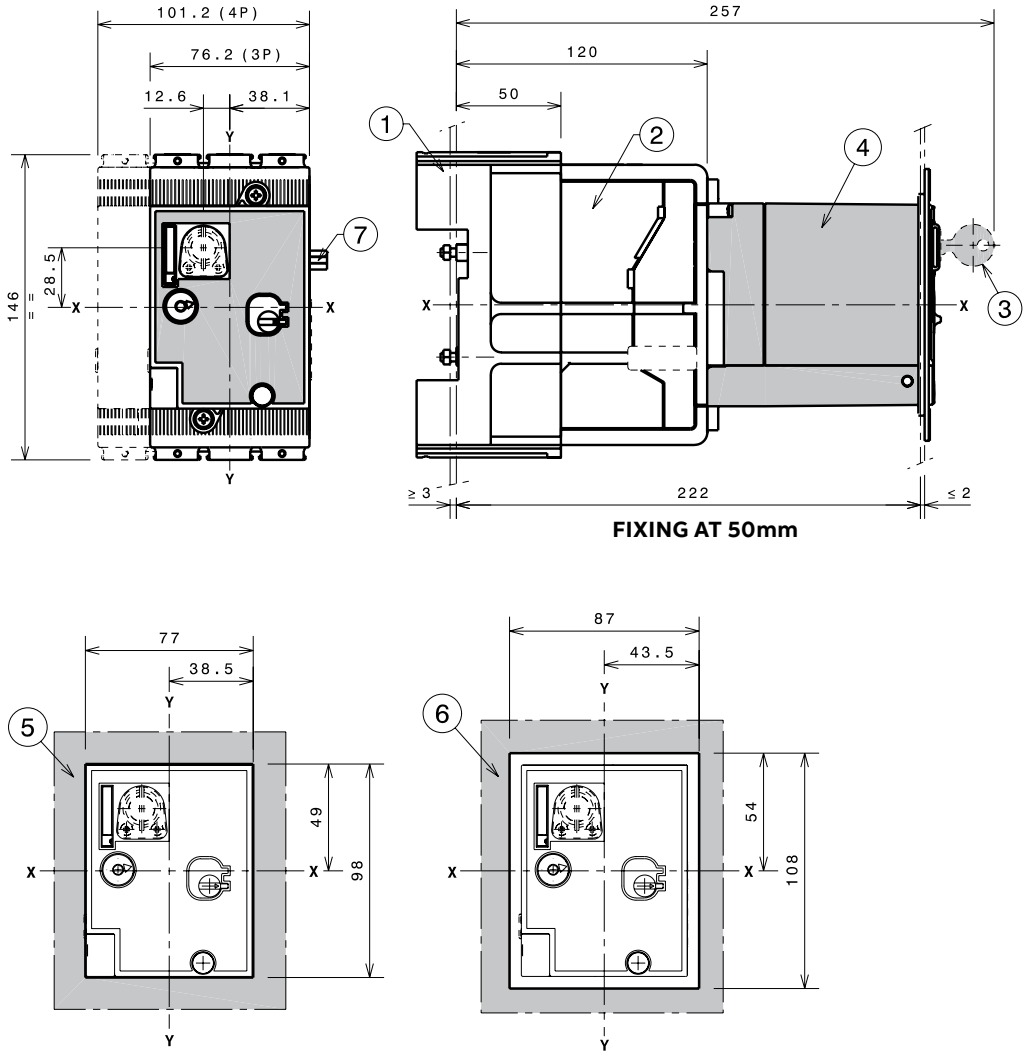




Tmax XT1 – Installation

Accessories for plug-in circuit-breaker

Direct motor operator (MOD)



—

Key

1 Fixed part
2 Moving part
3 Key lock (on request)
4 Direct motor operator (MOD)
5 Drilling template of door with MOD without flange
6 Drilling template of door with MOD with flange
7 Cables connection

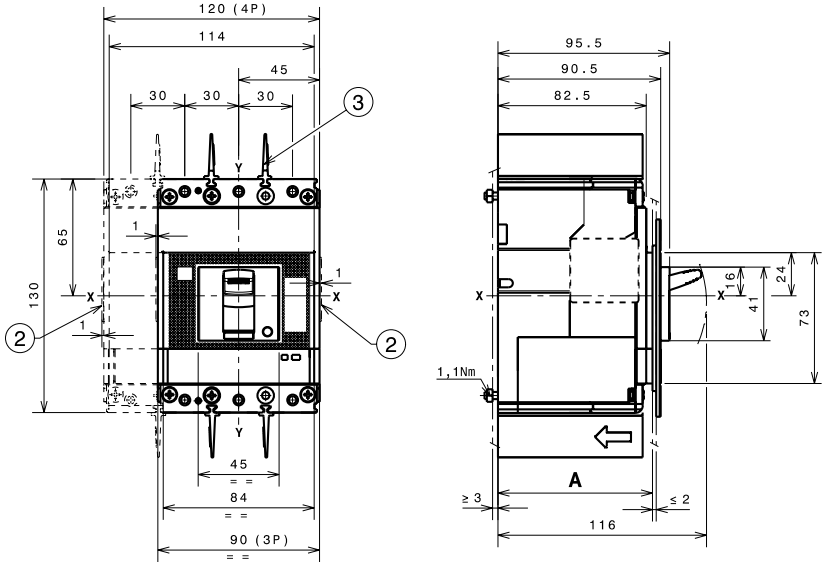
Tmax XT2 – Installation

Installation for fixed circuit-breaker

Fixed circuit-breaker fixing on sheet

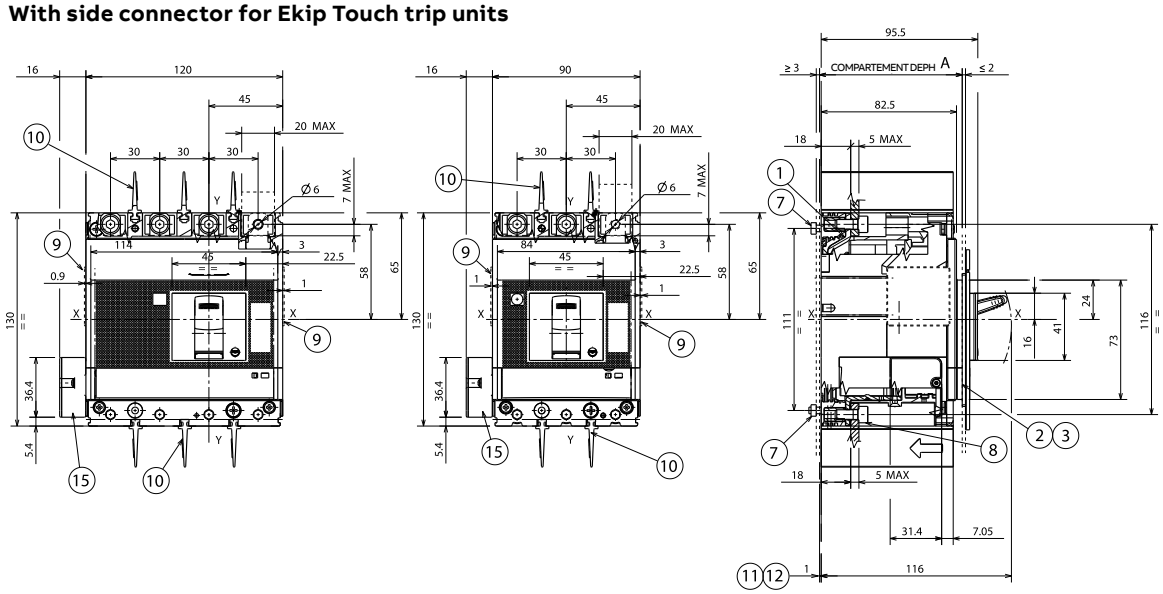
Key
2 Optional wiring ducts
3 25mm insulating barriers between phases (compulsory) provided

		A
With standard flange	III-IV	86
Without flange	III-IV	83.5
	III-IV	91.5



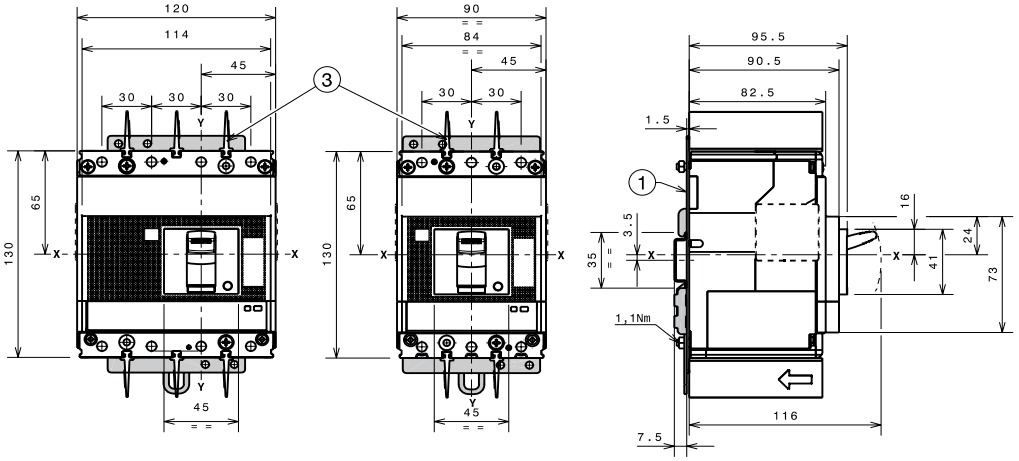
With side connector for Ekip Touch trip units

Key
1 Front terminals
2 Flange for IV circuit-breaker (always supplied with IV cb)
3 Flange for III circuit-breaker (always supplied with III cb)
7 Tightening torque 1,1 Nm - 10 In.Lbs
8 Tightening torque 6 Nm - 53 In.Lbs
9 Optional wiring duct
10 Interphase insulating barriers 25mm - 0.98"(compulsory)
11 Rear plate insulating III (only ul version)
12 Rear plate insulating IV (only ul version)
15 Connection kit F/P IntBus/ExtNeut/Se

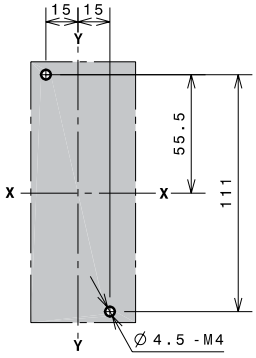


Fixed circuit-breaker fixing on DIN EN 50022 rail

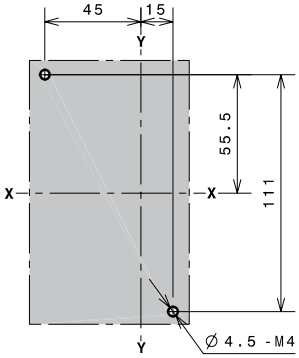
Key
1 Bracket for fixing
3 25mm insulating barriers between phases (compulsory) provided



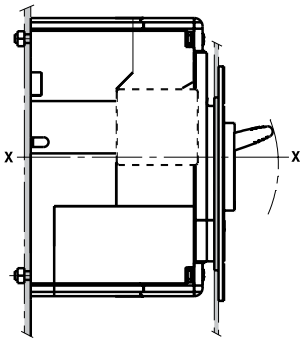
Drilling templates and support sheet



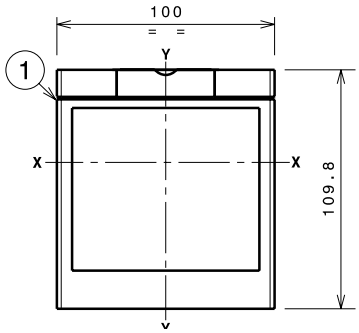
3 POLES

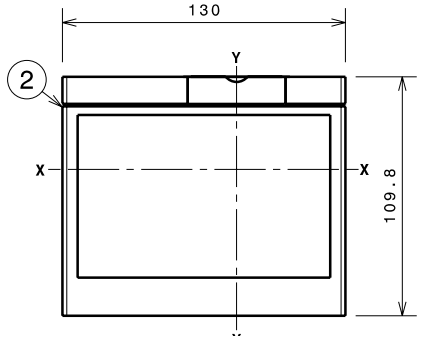


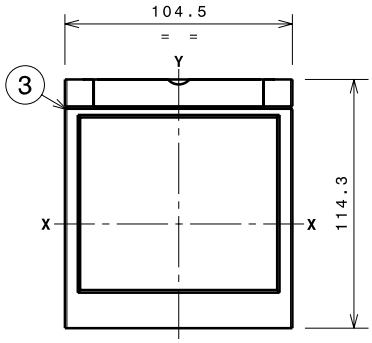
4 POLES

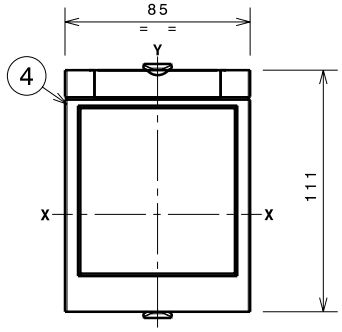


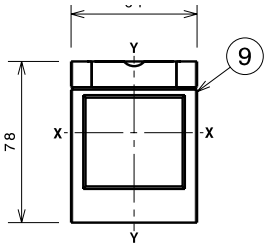
Flanges

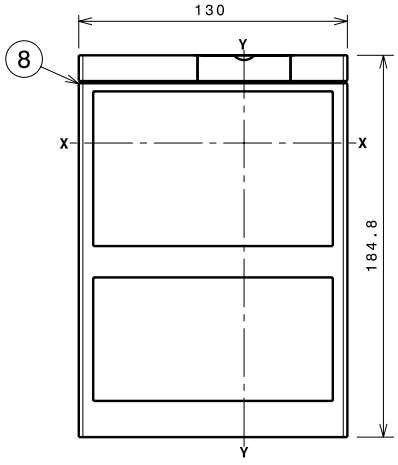












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Key

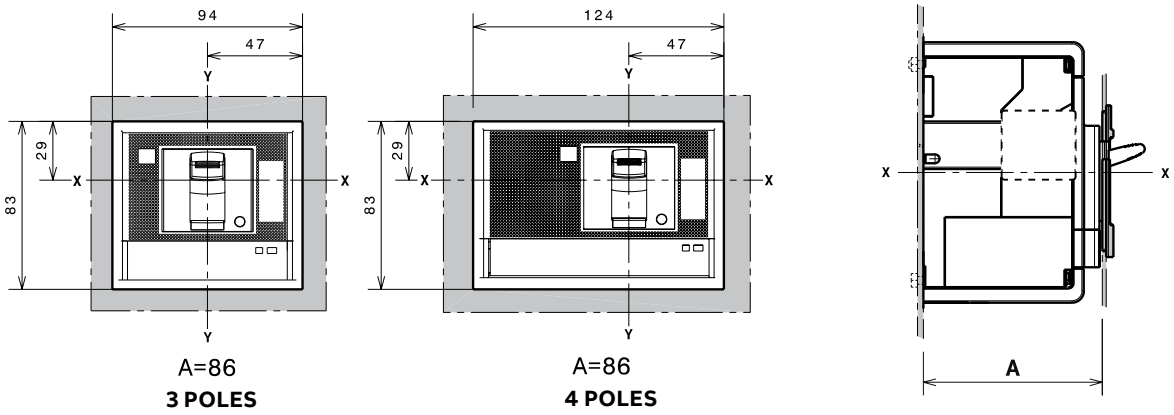
1 Flange for fixed circuit-breaker III
2 Flange for fixed circuit-breaker IV
3 Flange for fixed circuit-breaker III-IV with MOE and FLD
4 Flange for circuit-breaker III-IV with direct rotary handle RHD
8 Flange for circuit-breaker IV with fixed residual current and front terminals
9 Optional flange

Tmax XT2 – Installation

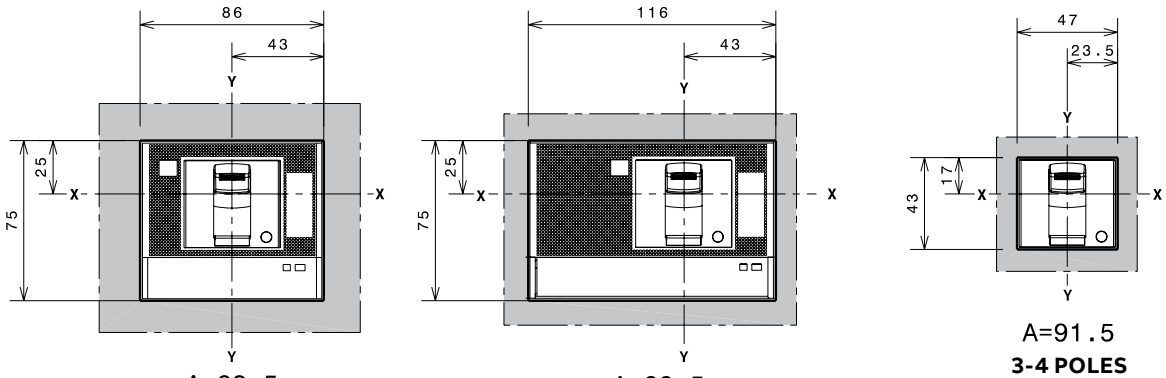
Installation for fixed circuit-breaker

Drilling templates compartment door

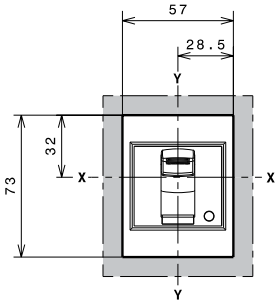
With standard flange

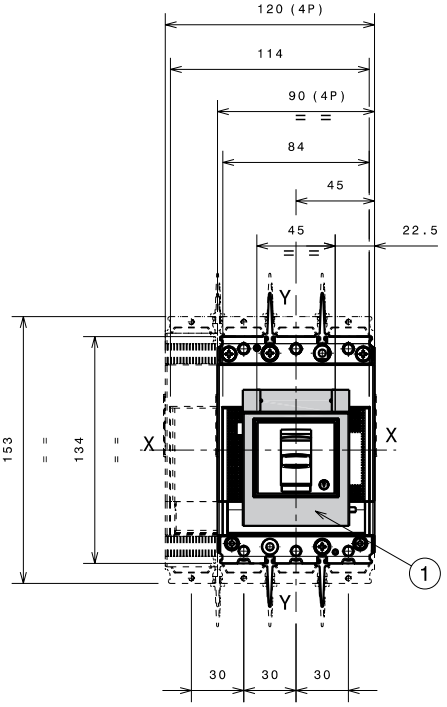


Without flange



With optional flange





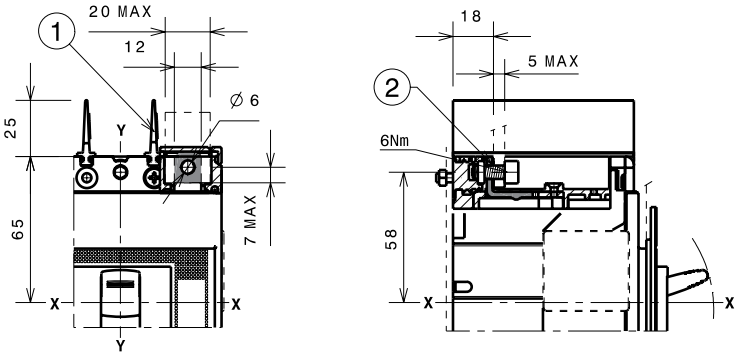
—
Key
1 Optional flange

	Execution	A	B	C	
With optional flange	fixed	92			3-4 poles
	plug-in, fixing at 50mm		142		3-4 poles
	plug-in, fixing at 70mm			162	3-4 poles

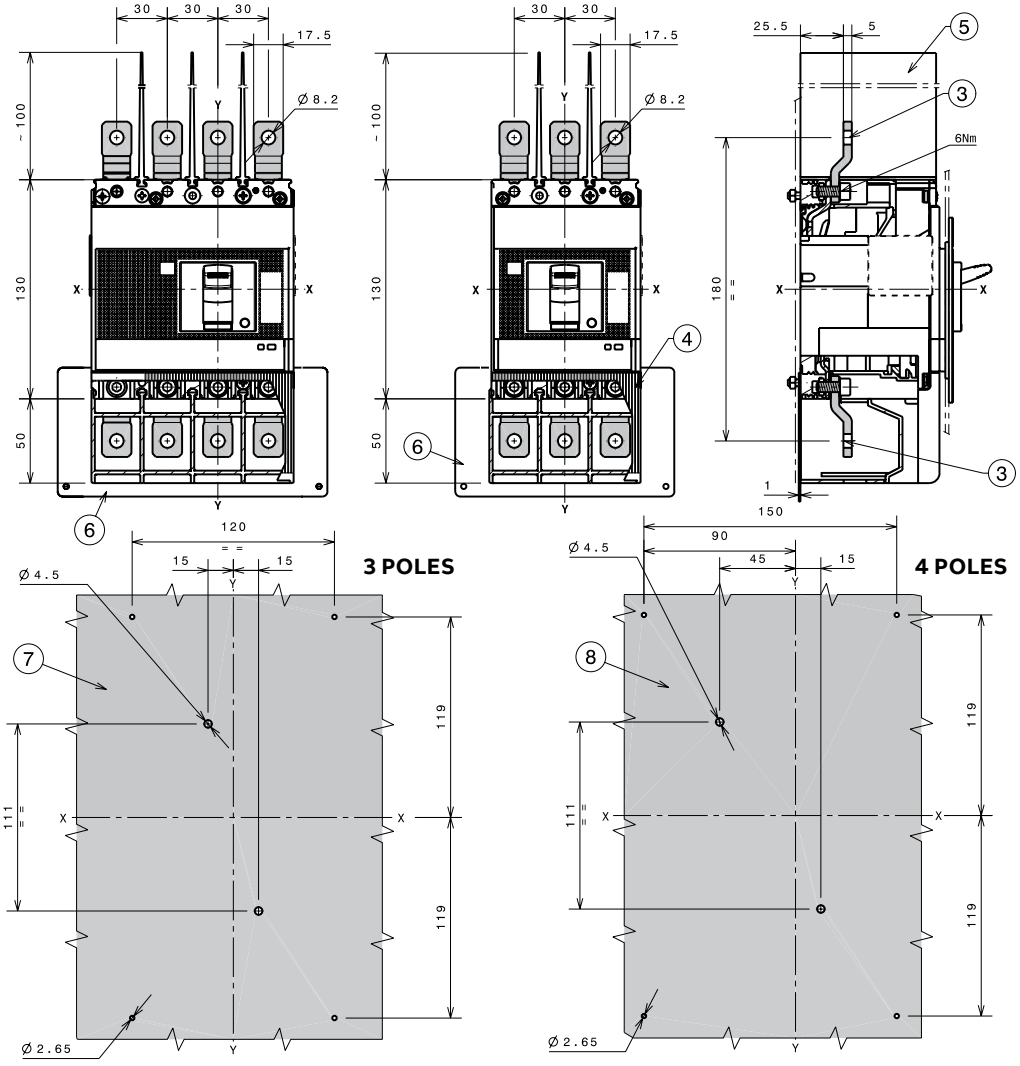
Tmax XT2 – Installation
Terminals for fixed circuit-breaker

Terminals F

Key
1 25mm insulating barriers between phases (compulsory) not provided
2 Front terminals for busbars connection



Terminals EF

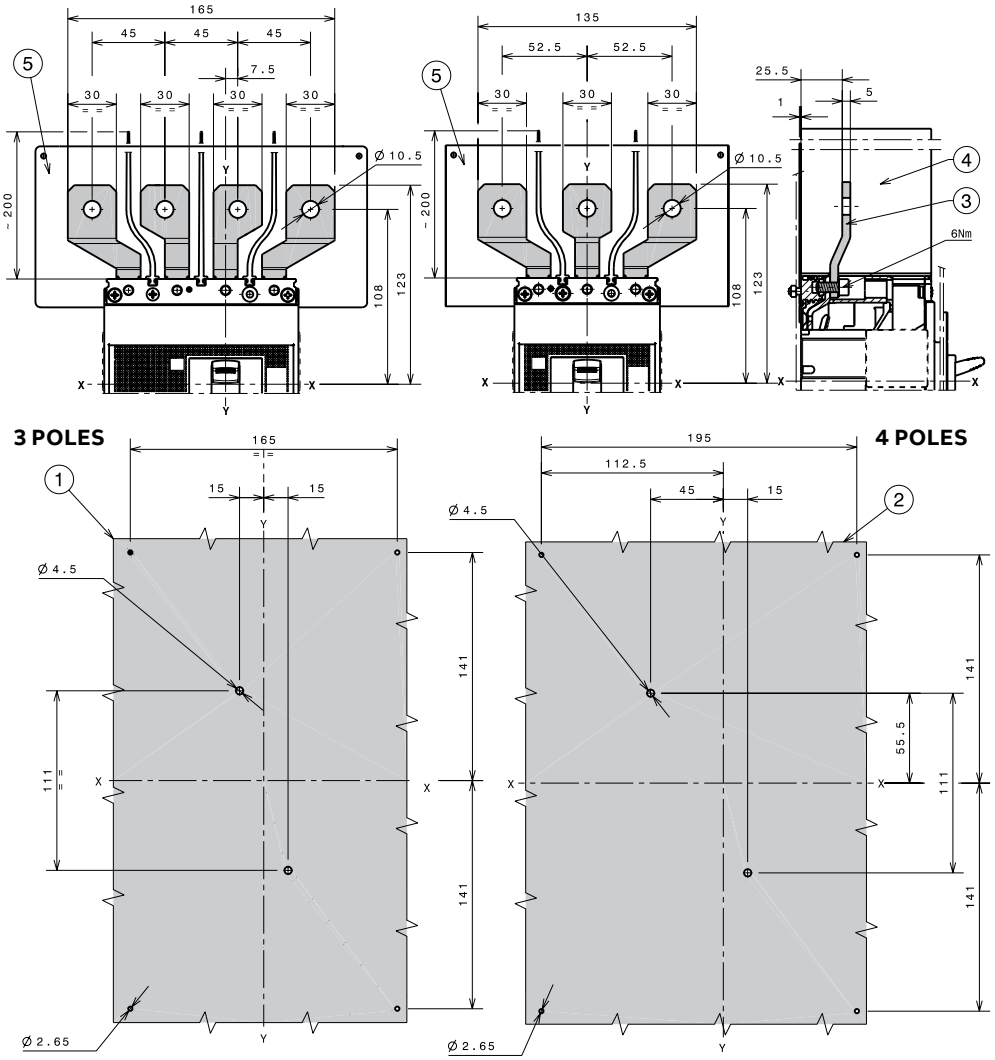


Key
3 Front extended terminals
4 Terminal covers with degree of protection IP40 (optional) not provided
5 100mm insulating barriers between phases (compulsory) provided
6 Insulated plate (compulsory) provided for XT2 Ue>440V
7 Drilling template for 3p circuit-breaker Ue>440V (compulsory)
8 Drilling template for 4p circuit-breaker Ue>440V (compulsory)

Tmax XT2 – Installation
Terminals for fixed circuit-breaker

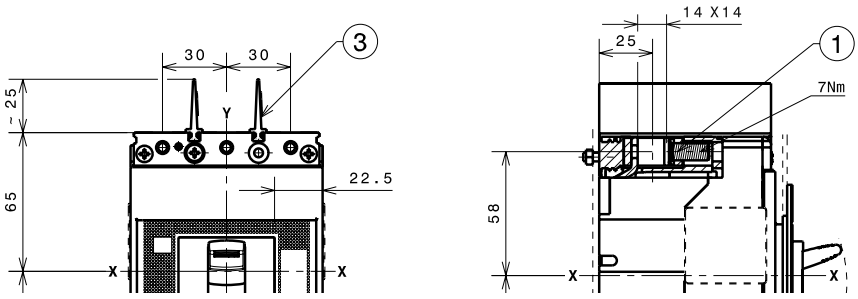
Terminals ES

Key
1 Drilling template for 3p circuit-breaker Ue>440V (compulsory)
2 Drilling template for 4p circuit-breaker Ue>440V (compulsory)
3 Front extended spread terminals
4 200mm insulating barriers between phases (compulsory) provided for Ue>440V
5 Insulated plate (compulsory) provided for XT2 Ue>440V



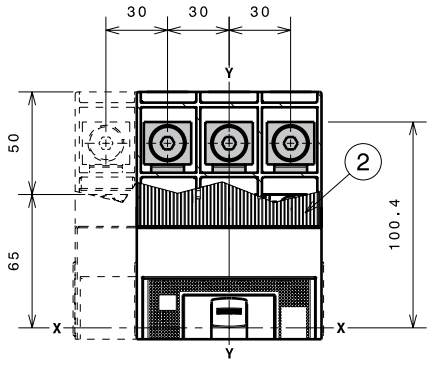
1x1...95mm² terminals FCCuAl

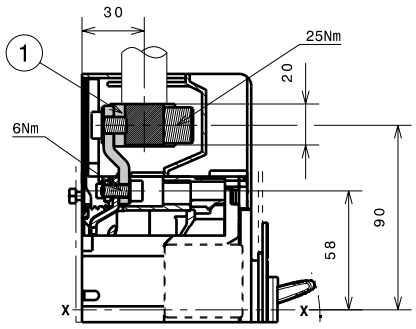
Key
1 1x1...95mm² terminals FCCuAl
3 25mm insulating barriers between phases (compulsory) provided



1x70...185mm² terminals FCCuAl

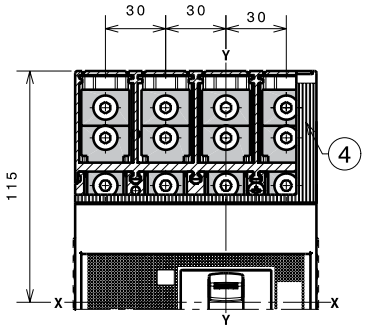
Key
1 External terminal FCCuAl
2 High terminal covers with degree of protection IP40 (optional) provided

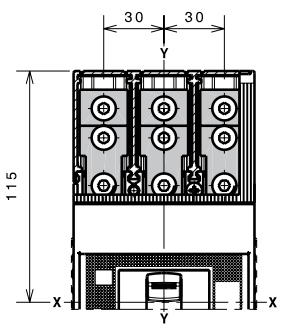


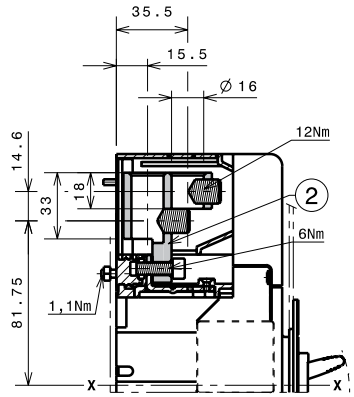


2x35...95mm² terminals FCCuAl

Key
2 2x35...95mm² terminals FCCuAl
4 Terminal covers with degree of protection IP40 (optional) provided

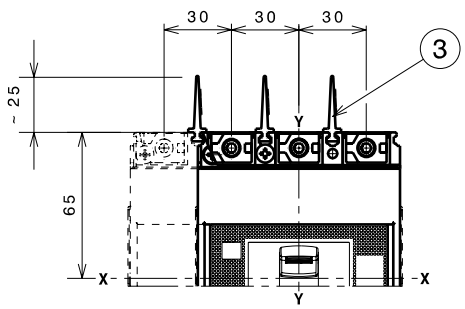


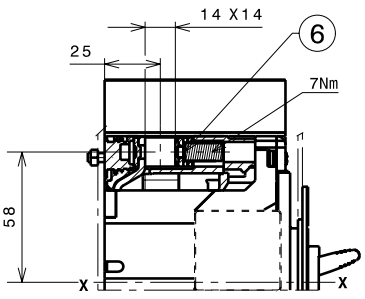




Terminals FCCu

Key
3 25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker
6 Terminals FCCu



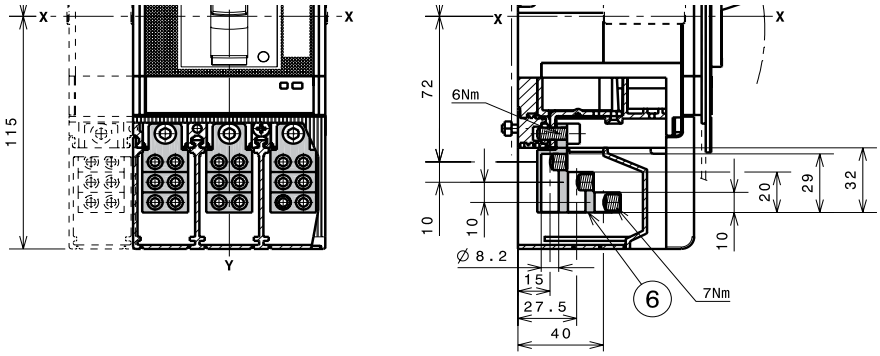


Tmax XT2 – Installation

Terminals for fixed circuit-breaker

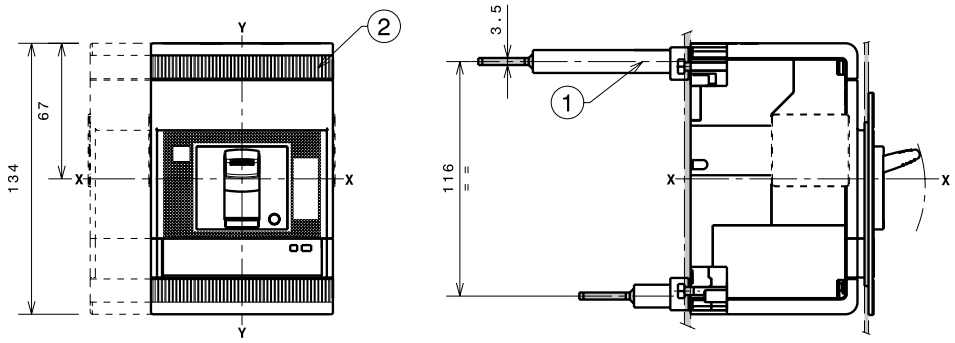
Terminals MC

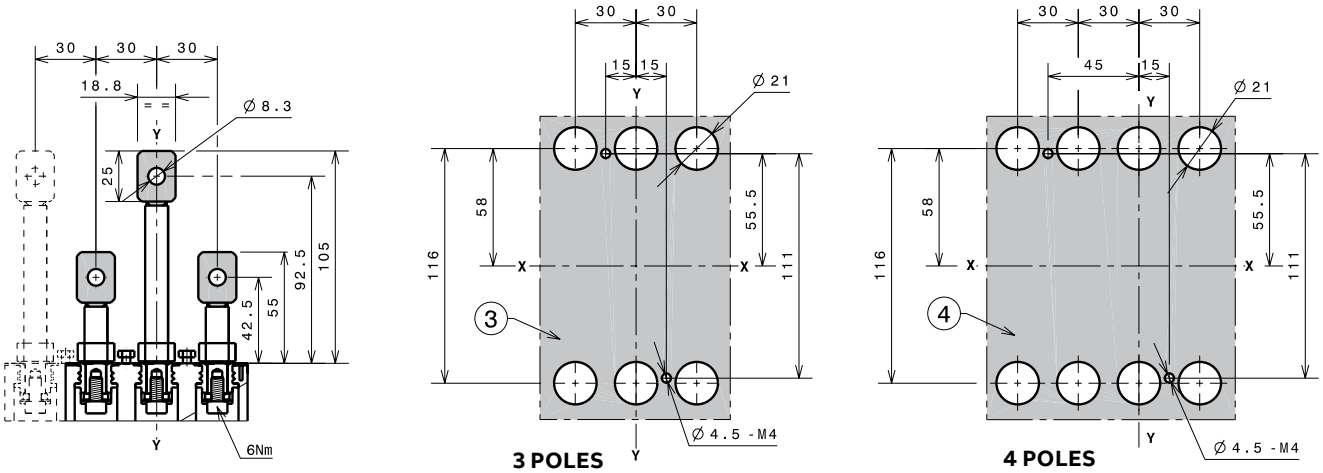
Key
6 Multicable terminals



Terminals R

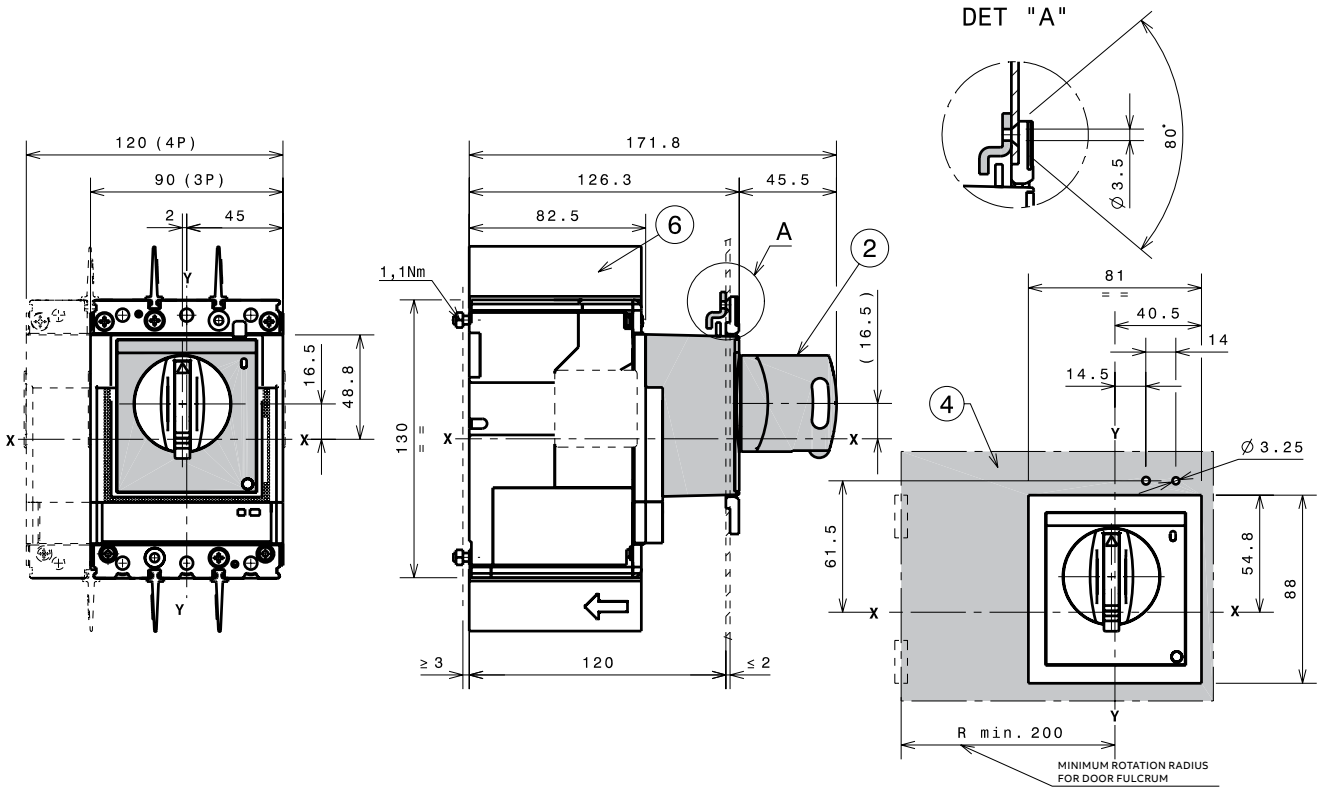
Key
1 Rear adjustable terminals
2 Bottom terminal covers with degree of protection IP30 (optional) provided
3 Drilling template for circuit-breaker III fixing on sheet
4 Drilling template for circuit-breaker IV fixing on sheet





Tmax XT2 – Installation
Accessories for fixed circuit-breaker

Rotary handle operating mechanism on circuit-breaker (RHD)

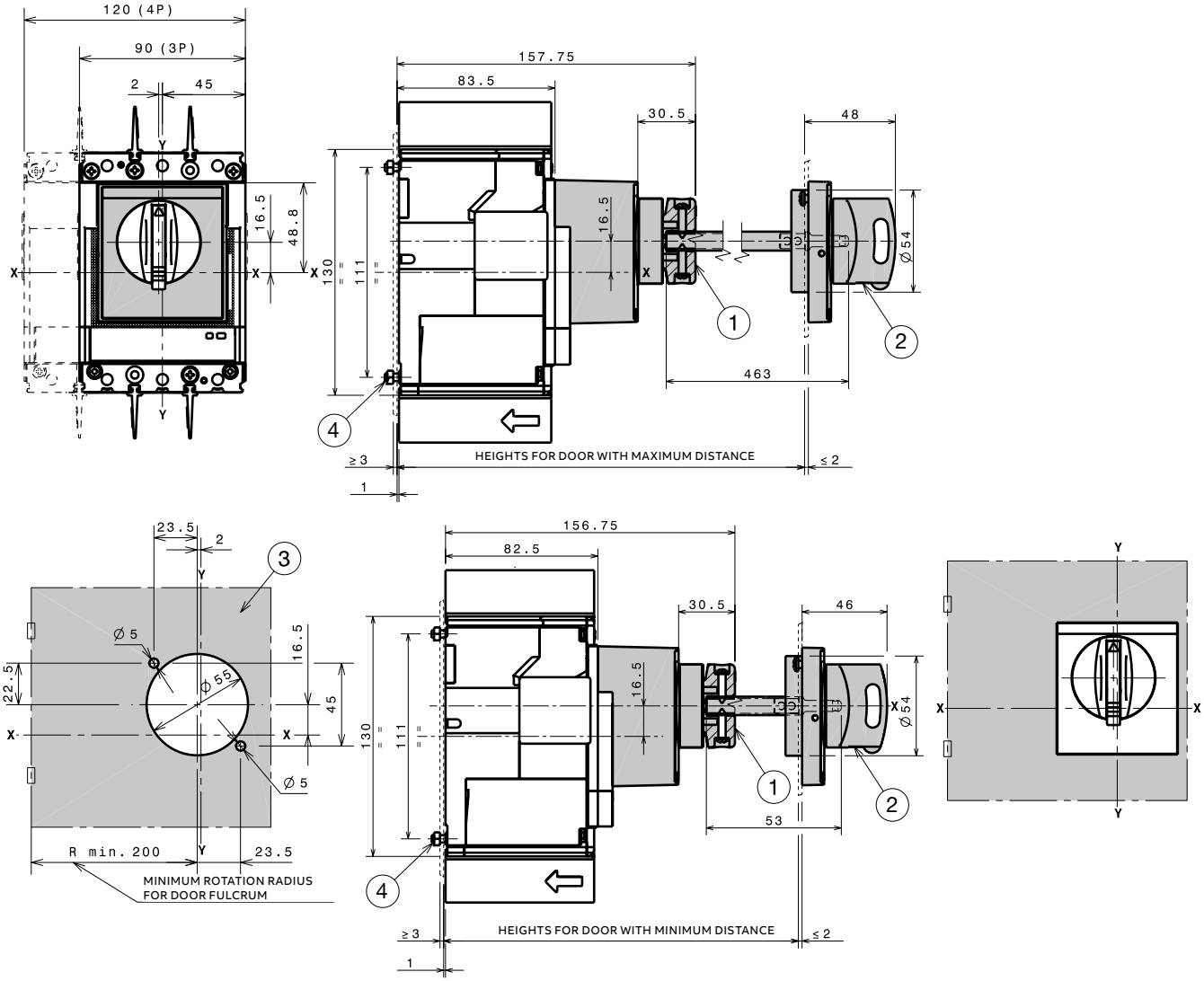


—
Key
2 Rotary handle operating mechanism on circuit-breaker
4 Drilling template of door with direct rotary handle
6 25mm insulating barriers between phases provided with circuit-breaker

Tmax XT2 – Installation

Accessories for fixed circuit-breaker

Rotary handle operating mechanism on the compartment door (RHE)



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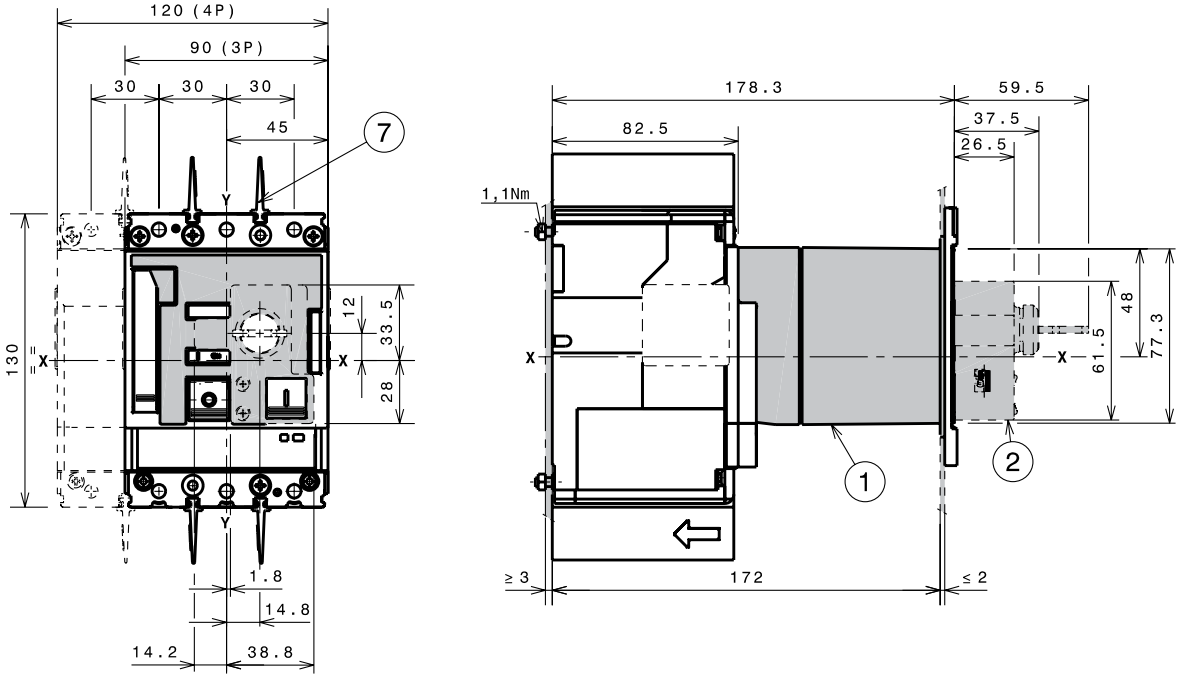
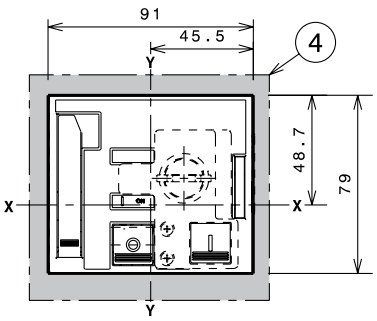
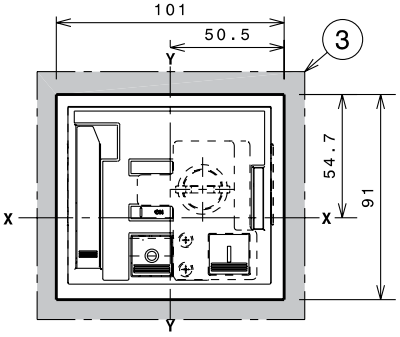
Key

1 Transmission mechanism
2 Rotary handle operating mechanism for compartment door
3 Compartment door shett steel drilling
4 Tightening torque 1.1Nm

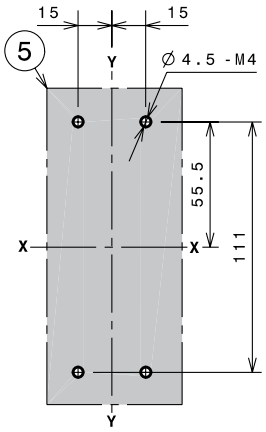
Stored energy motor operator (MOE)



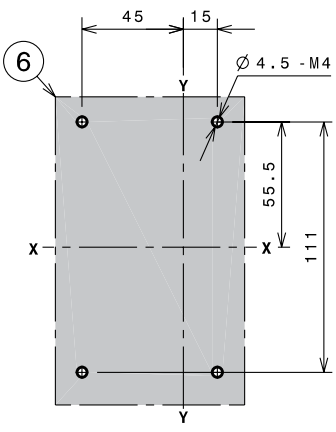




3 POLES



4 POLES



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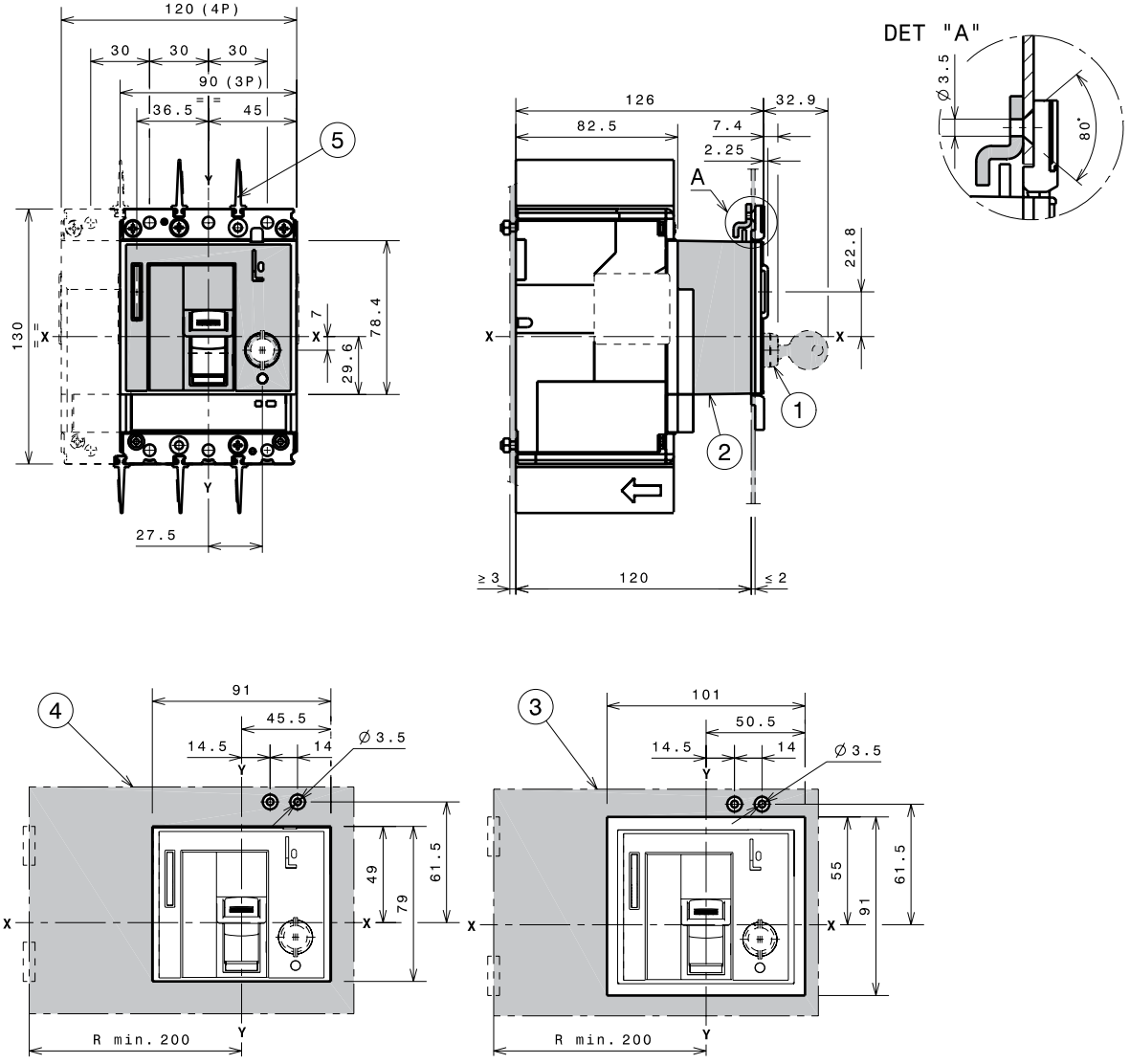
Key

1 Stored energy motor operator (MOE)
2 Key lock optional
3 Drilling template of door with MOE with flange
4 Door drilling template with MOE without flange
5 Drilling template for circuit-breaker 3p fixing on sheet
6 Drilling template for circuit-breaker 4p fixing on sheet
7 25mm insulating barriers between phases provided with circuit-breaker

Tmax XT2 – Installation

Accessories for fixed circuit-breaker

Front for lever operating mechanism (FLD)

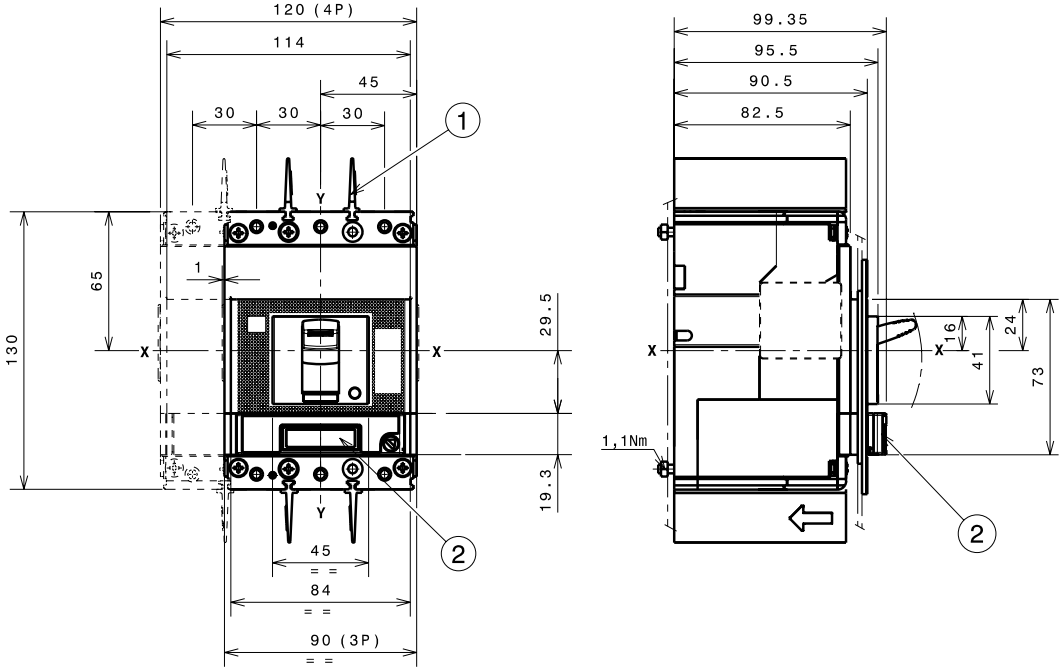


—

Key

1 Key lock optional
2 Front for lever operating mechanism (FLD)
3 Drilling template of door with FLD with flange
4 Drilling template of door with FLD without flange
5 25mm insulating barriers between phases provided with circuit-breaker

Ekip Display or Ekip LED Meter



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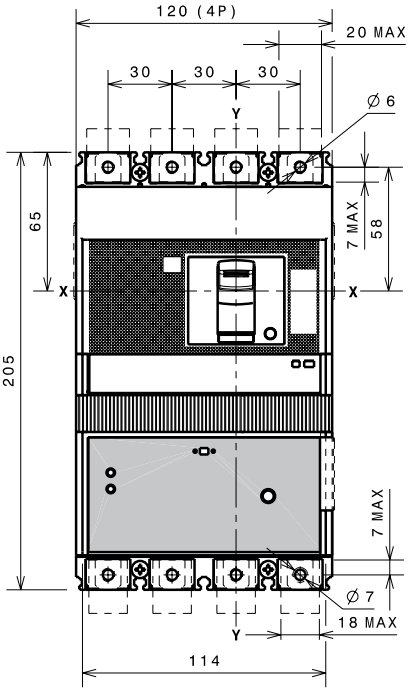
Key

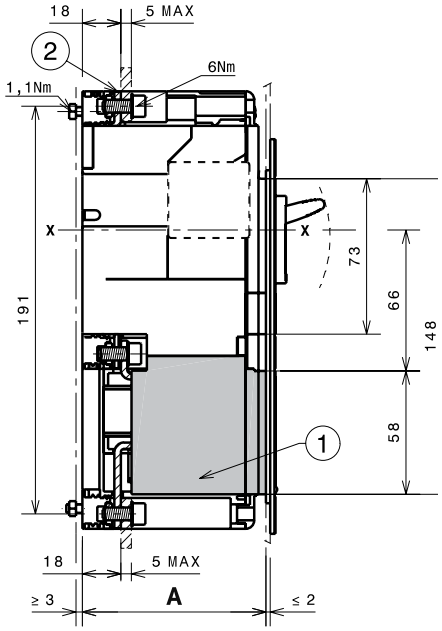
1 25mm insulating barriers between phases provided with circuit-breaker
2 Ekip Display or Ekip LED Meter

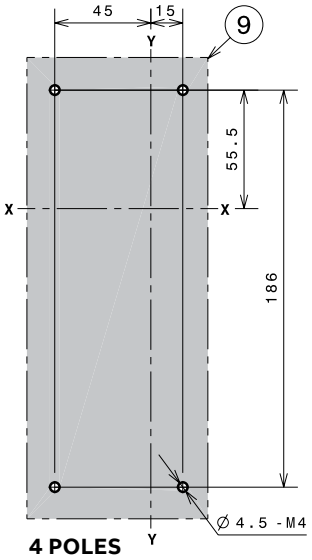
Tmax XT2 – Installation

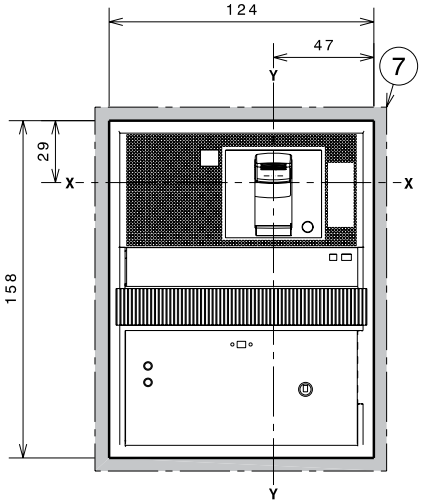
Accessories for fixed circuit-breaker

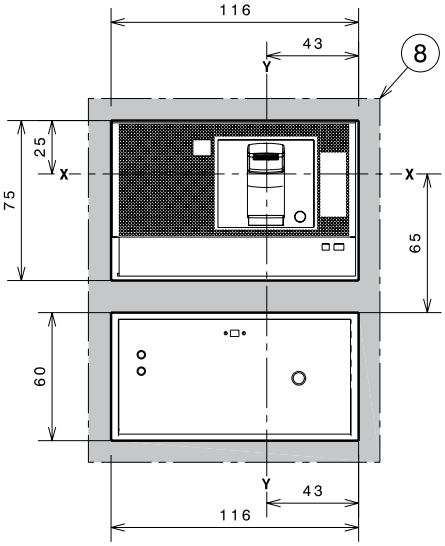
Residual current RC Sel











Key
1 Residual current
2 Front terminals
7 Drilling template of door with direct rotary handle and fixing with flange
8 Drilling template of door with direct rotary handle and fixing without flange
9 Drilling template for circuit-breaker fixing on sheet

		A
With standard flange	IV	86
Without flange	IV	83.5

Tmax XT2 – Installation

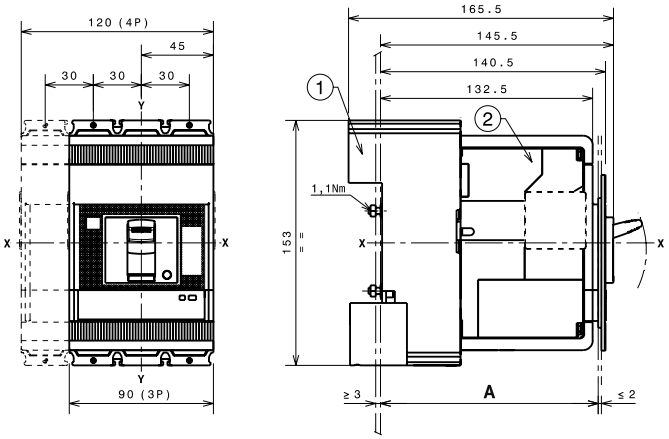
Installation for plug-in circuit-breaker

Plug-in circuit-breaker fixing on sheet

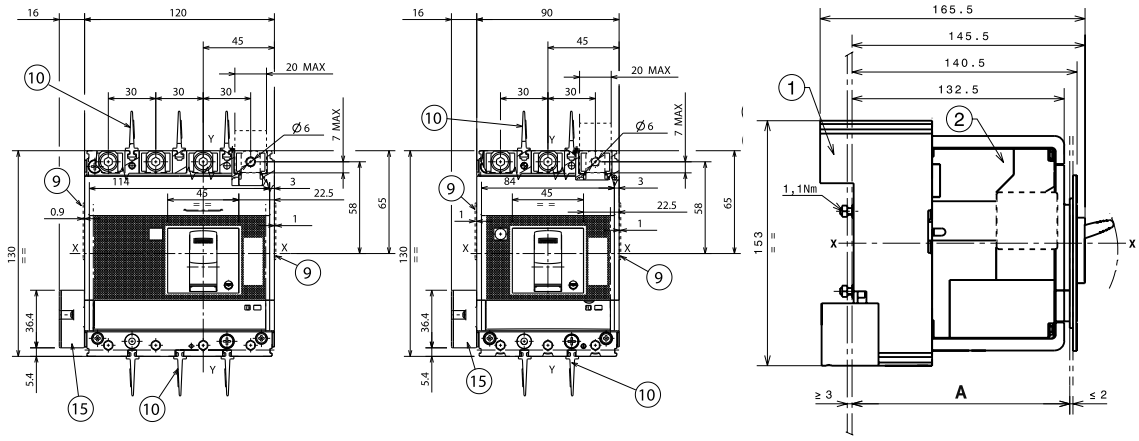
Key
1 Fixed part
2 Moving part

Fixing at 50mm		A
With standard flange	III-IV	136
Without flange	III-IV	133.5
	III-IV	141.5

Fixing at 70mm for extended front terminals		A
With standard flange	III-IV	156
Without flange	III-IV	153.5
	III-IV	161.5



With side connector for Ekip Touch trip units

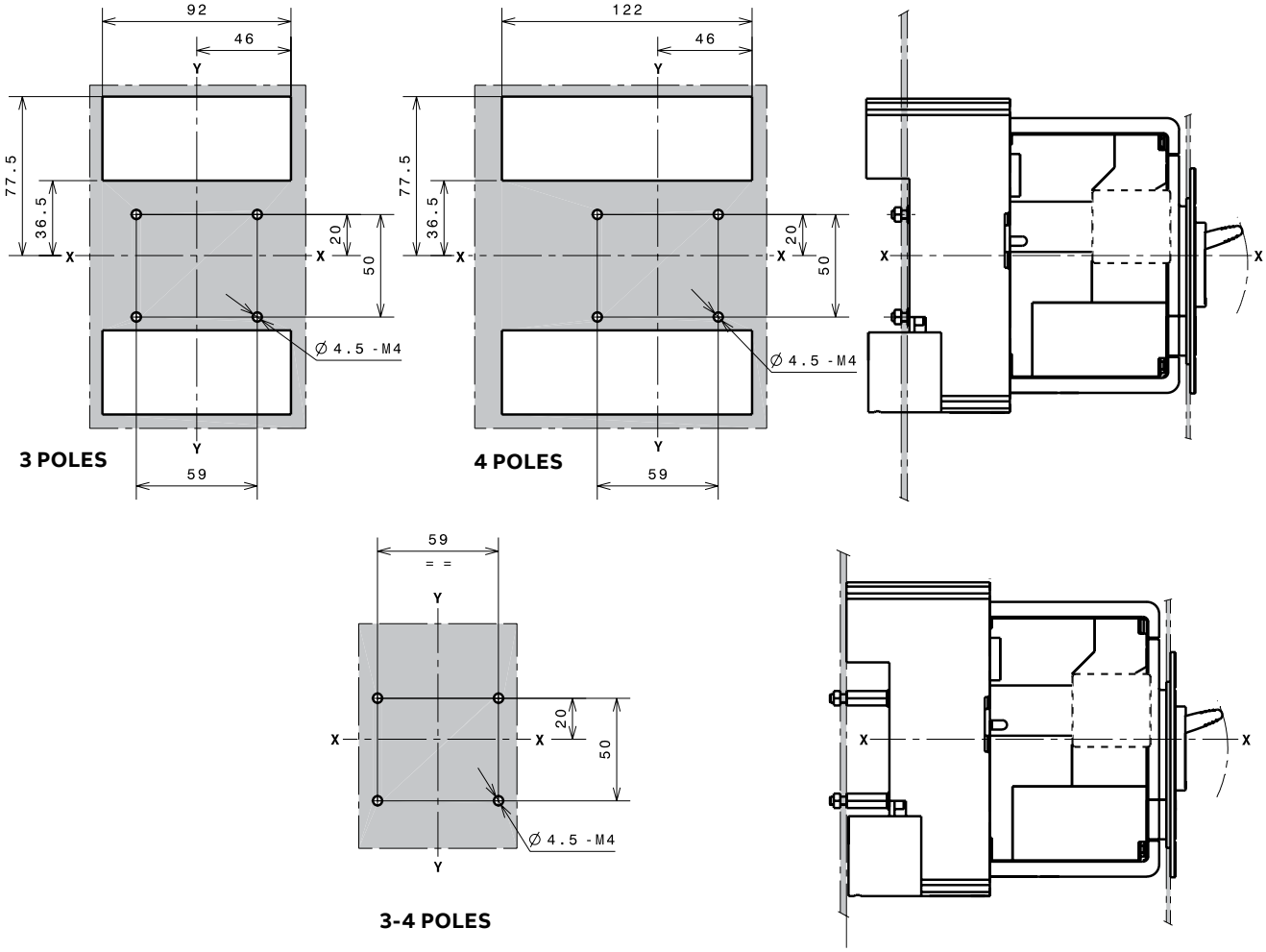


Key
9 Optional wiring duct
10 Interphase insulating barriers 25mm - 0.98"(COMPULSORY)
15 Connection kit F/P IntBus/ExtNeut/Se

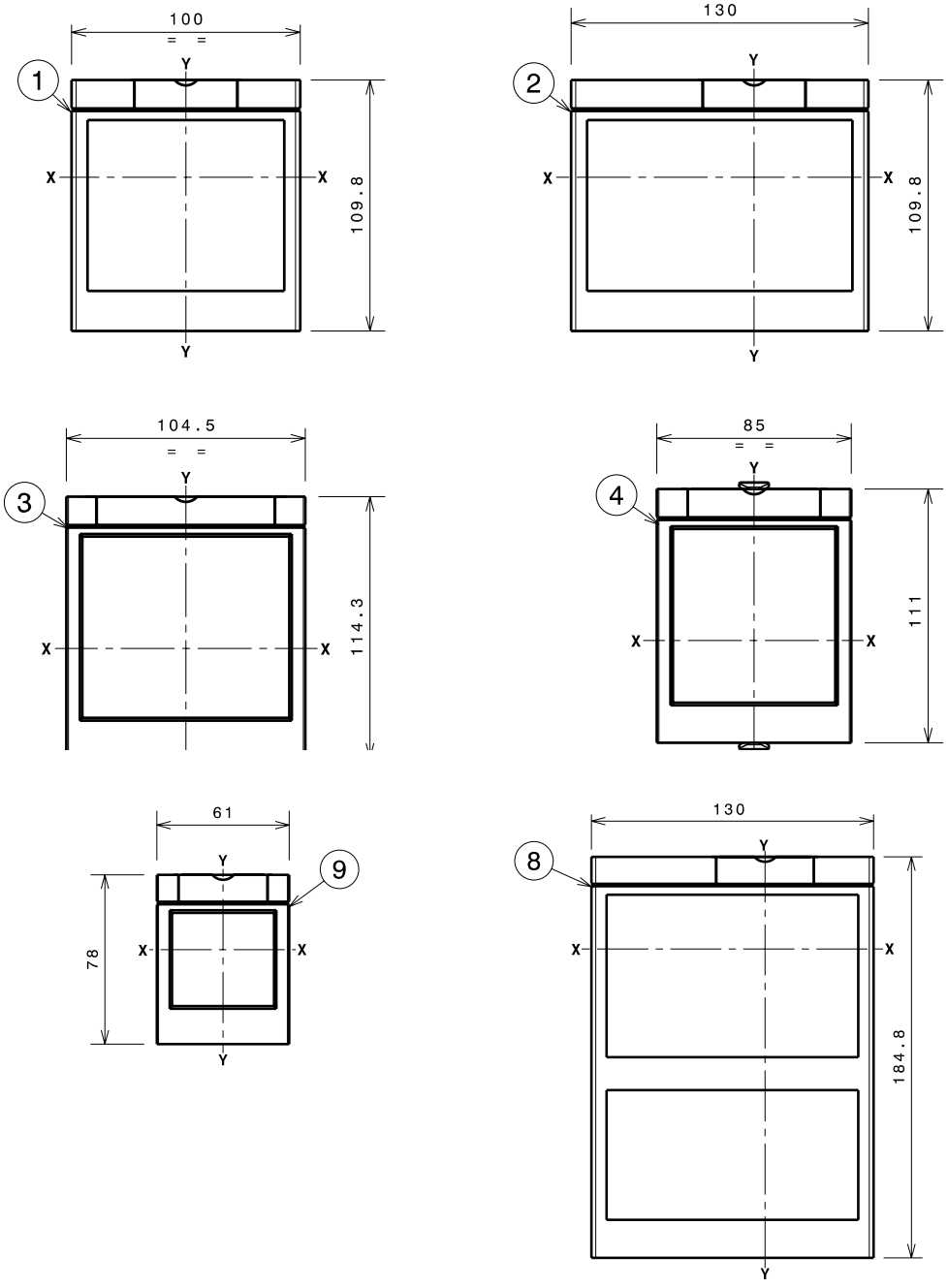
Tmax XT2 – Installation

Installation for plug-in circuit-breaker

Drilling templates for support sheet



Flanges



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Key

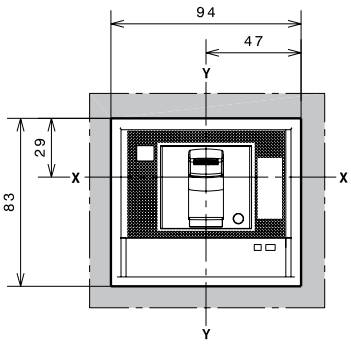
1 Flange for circuit-breaker rimovibile III
2 Flange for circuit-breaker IV
3 Flange for plug-in circuit-breaker III-IV with MOE and FLD
4 Flange for circuit-breaker III-IV with direct rotary handle (RHD)
8 Flange for circuit-breaker IV with residual current and plug-in with front terminals
9 Optional flange

Tmax XT2 – Installation

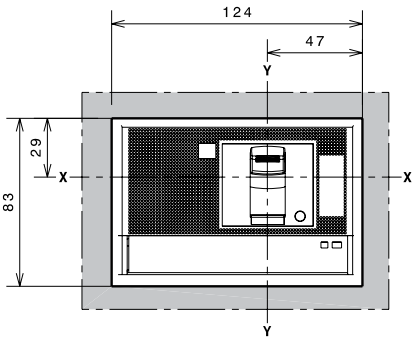
Installation for plug-in circuit-breaker

Drilling templates compartment door

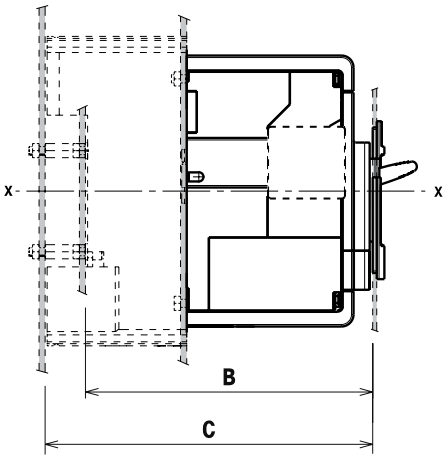
With standard flange



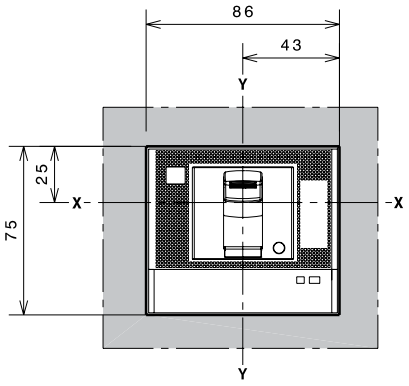
B=136 C=156
3 POLES



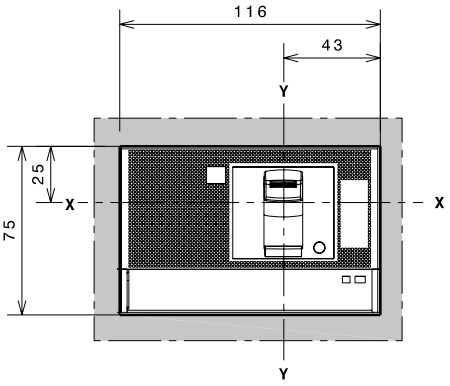
B=136 C=156
4 POLES



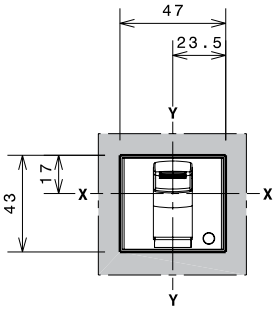
Without flange



B=133.5 C=153.5
3 POLES

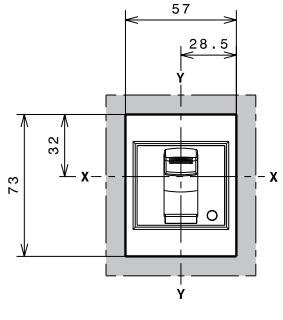


B=133.5 C=153.5
4 POLES

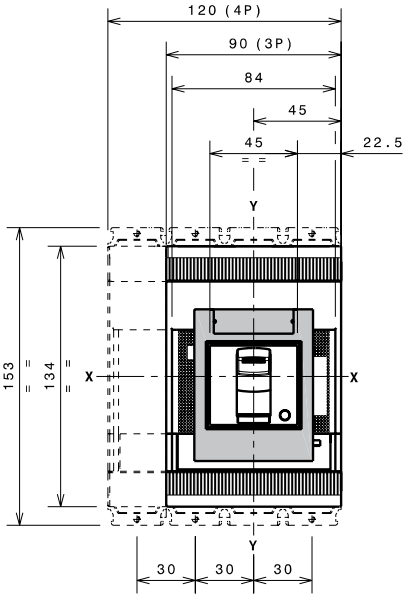


B=141.5 C=101.5
3-4 POLES

With optional flange



B=142 C=162
3-4 POLES

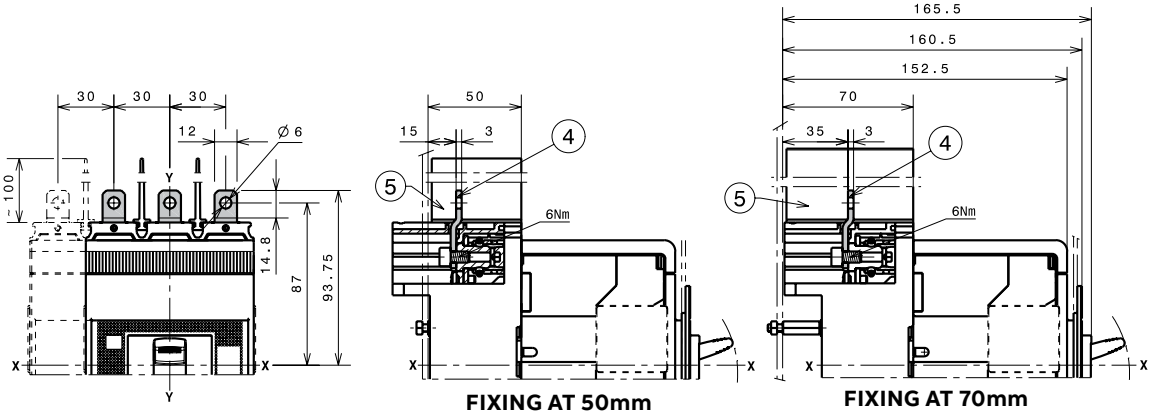


Tmax XT2 – Installation

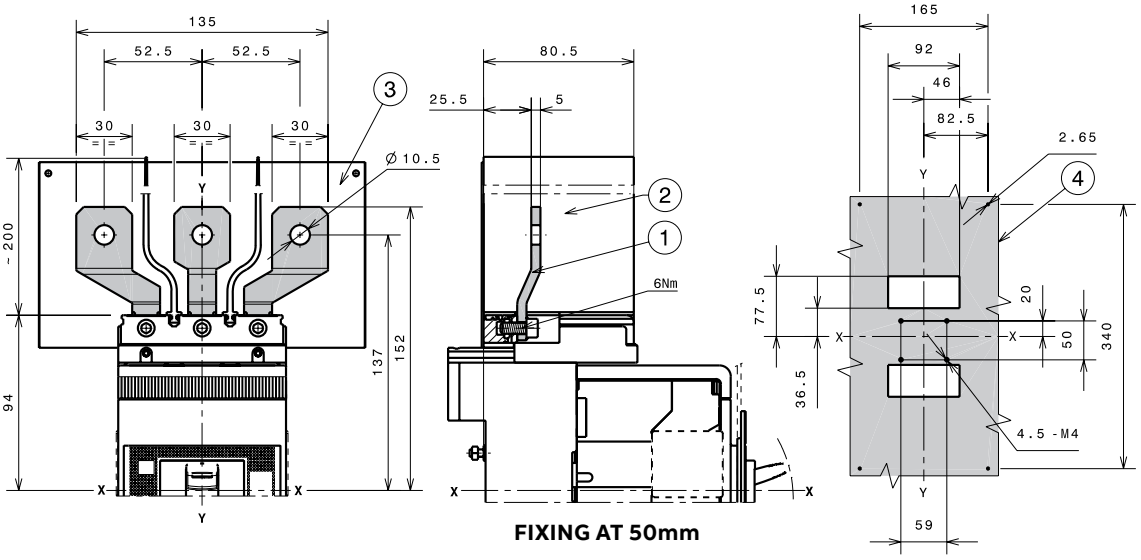
Terminals for plug-in circuit-breaker

Terminals EF

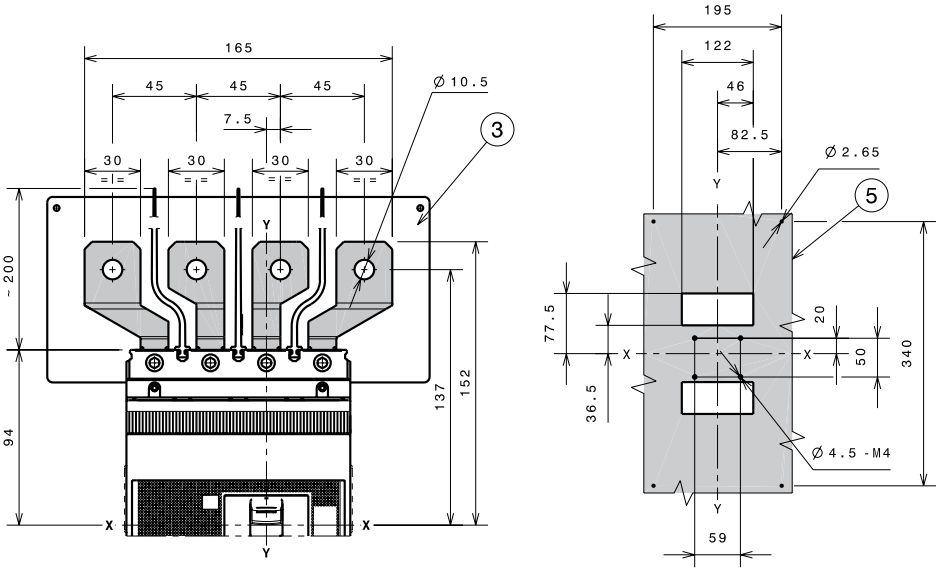
Key
4 Front extended terminals
5 100mm insulating barriers between phases (compulsory) provided



Terminals ES



Key
1 Front extended spread terminals
2 200mm insulating barriers between phases (compulsory) provided
3 Insulated plate (compulsory) provided
4 Drilling template for 3p circuit-breaker Ue>440V (compulsory)
5 Drilling template for 4p circuit-breaker Ue>440V (compulsory)

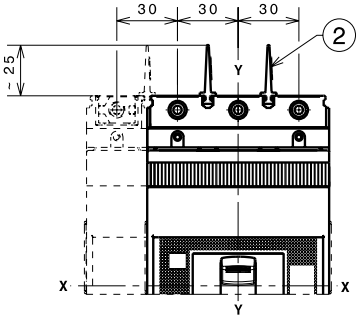


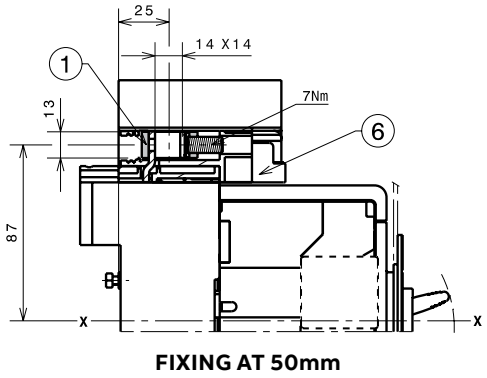
Tmax XT2 – Installation

Terminals for plug-in circuit-breaker

1x1...95mm² terminals FCCuAl

Key
1 1x1...95mm² front terminal FCCuAl
2 25mm insulating barriers between phases (compulsory) provided
6 Adaptor (compulsory) not provided

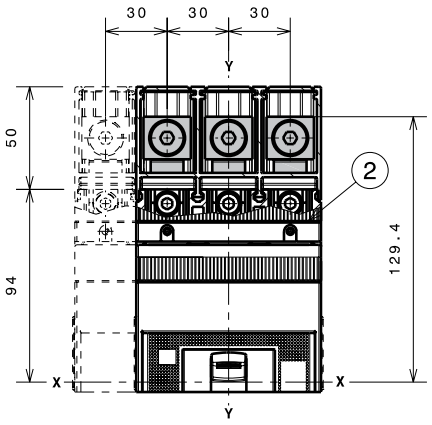


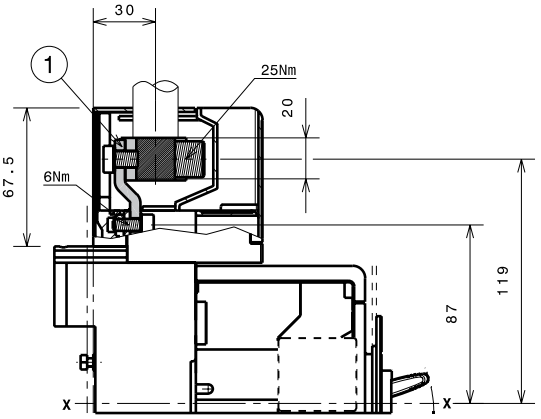


FIXING AT 50mm

1x70...185mm² terminals FCCuAl

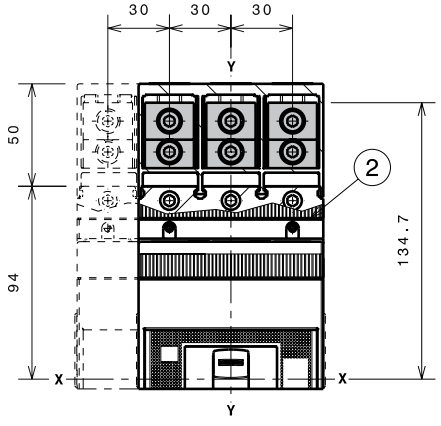
Key
1 External terminal FCCuAl
2 High terminal covers with degree of protection IP40 (optional) provided

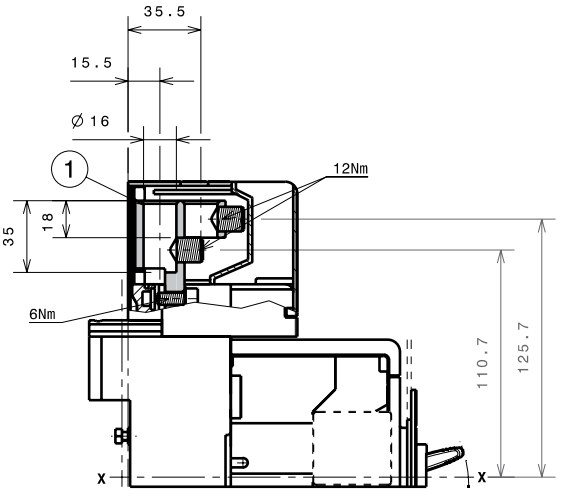




2x35...95mm² terminals FCCuAl

Key
1 External terminal FCCuAl
2 High terminal covers with degree of protection IP40 (optional) provided

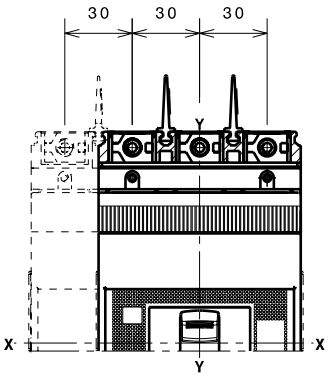


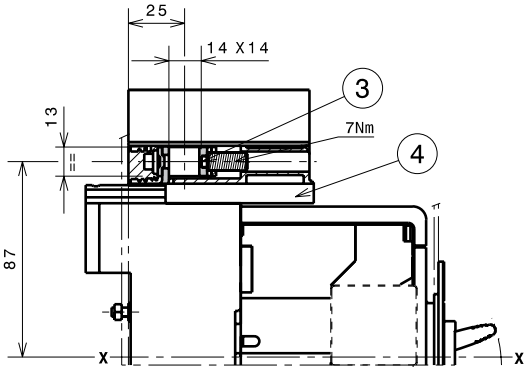


Terminals FCCu

—
Key
3 Terminals FCCu
4 Adaptor (compulsory) not provided

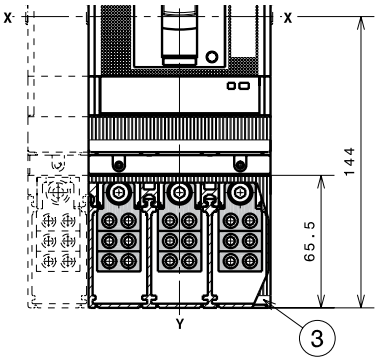
—
Note:
25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker

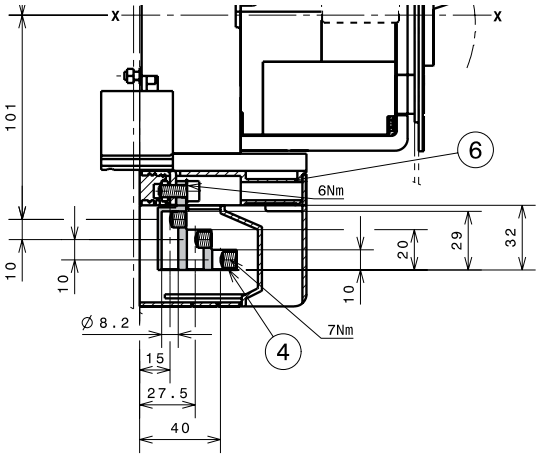




FIXING AT 50mm

Terminals MC





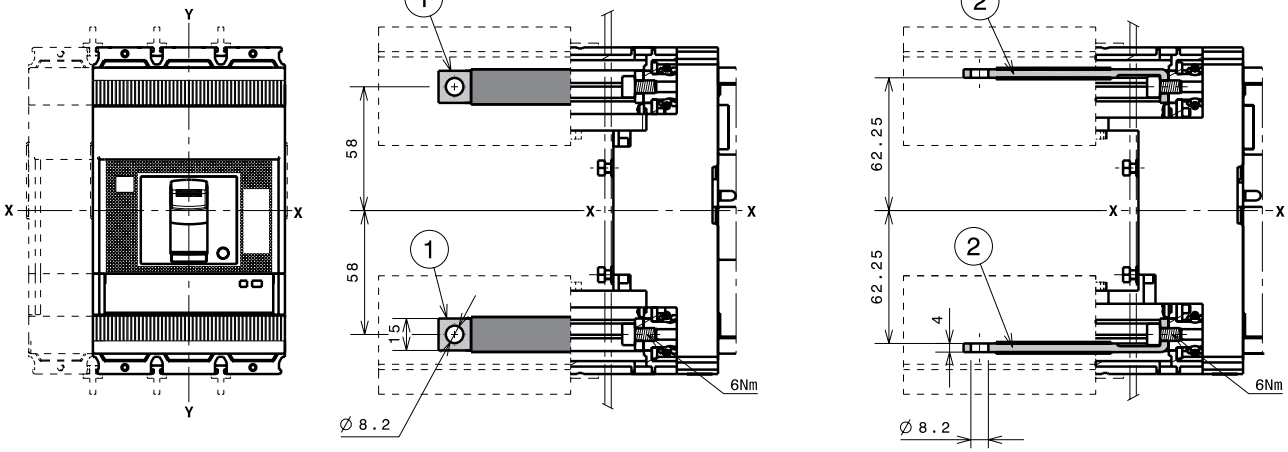
FIXING AT 50mm

—
Key
3 High terminal covers with degree of protection IP40 (optional) provided
4 Multicable terminals
6 Adaptor (compulsory) not provided

Tmax XT2 – Installation

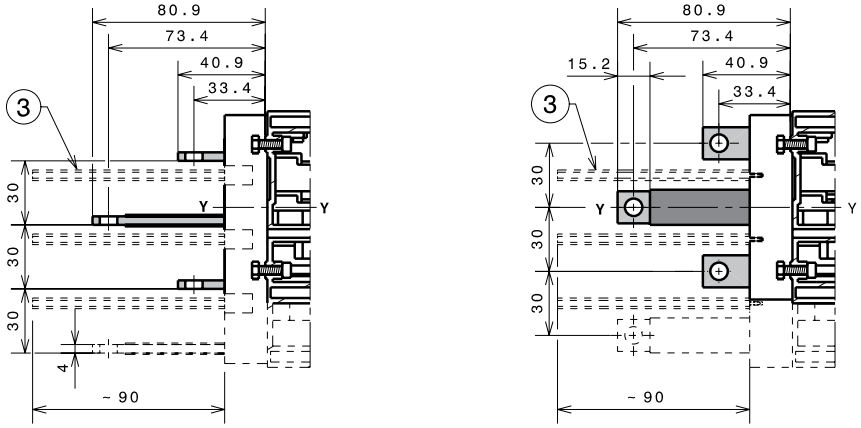
Terminals for plug-in circuit-breaker

Terminals HR/VR



FIXING AT 50mm

FIXING AT 50mm



—

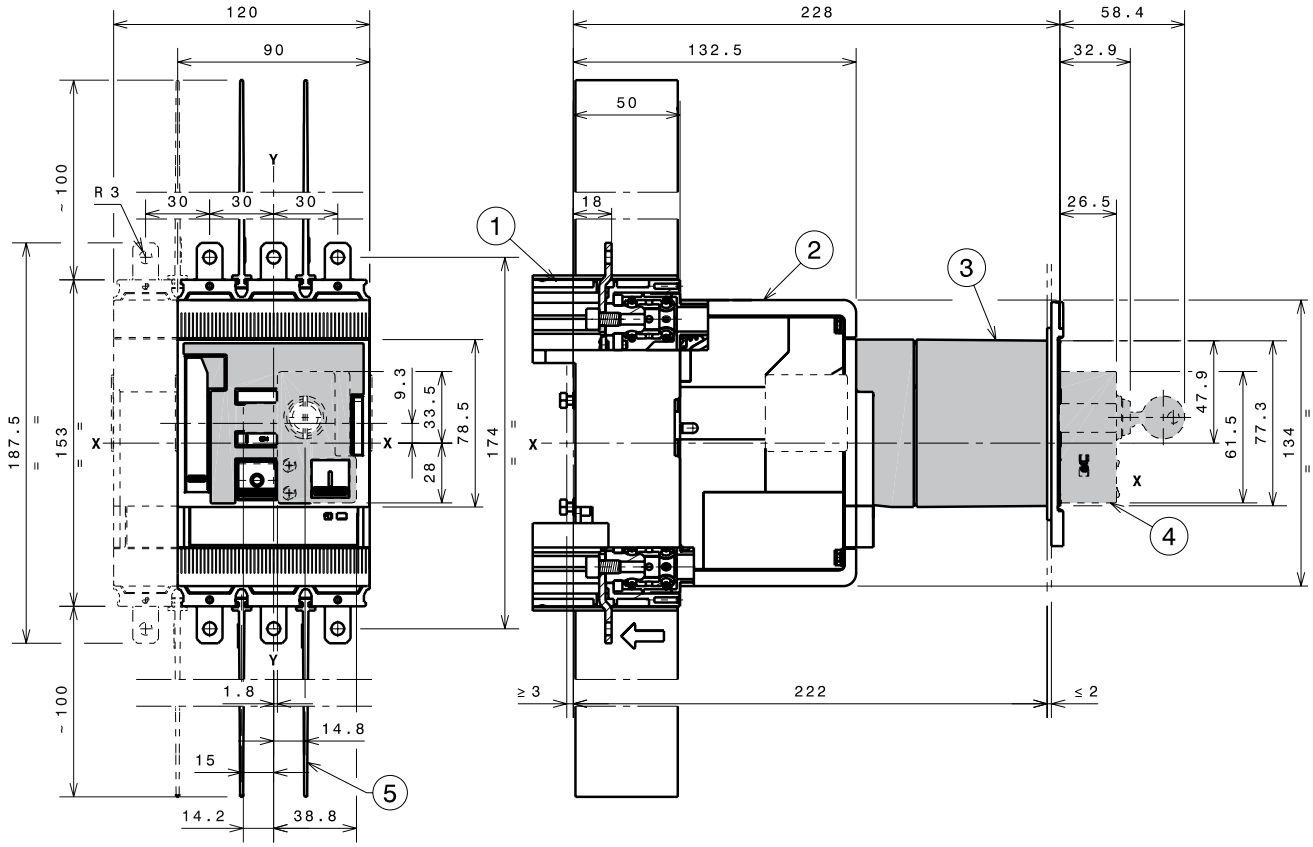
Key

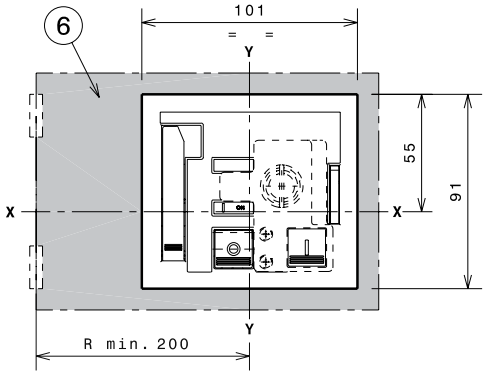
1 Rear vertical terminals
2 Rear horizontal terminals
3 90mm insulating barriers between phases (compulsory) not provided

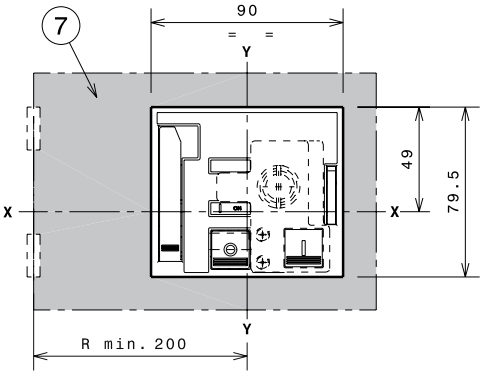
Tmax XT2 – Installation

Accessories for plug-in circuit-breaker

Stored energy motor operator (MOE)







—

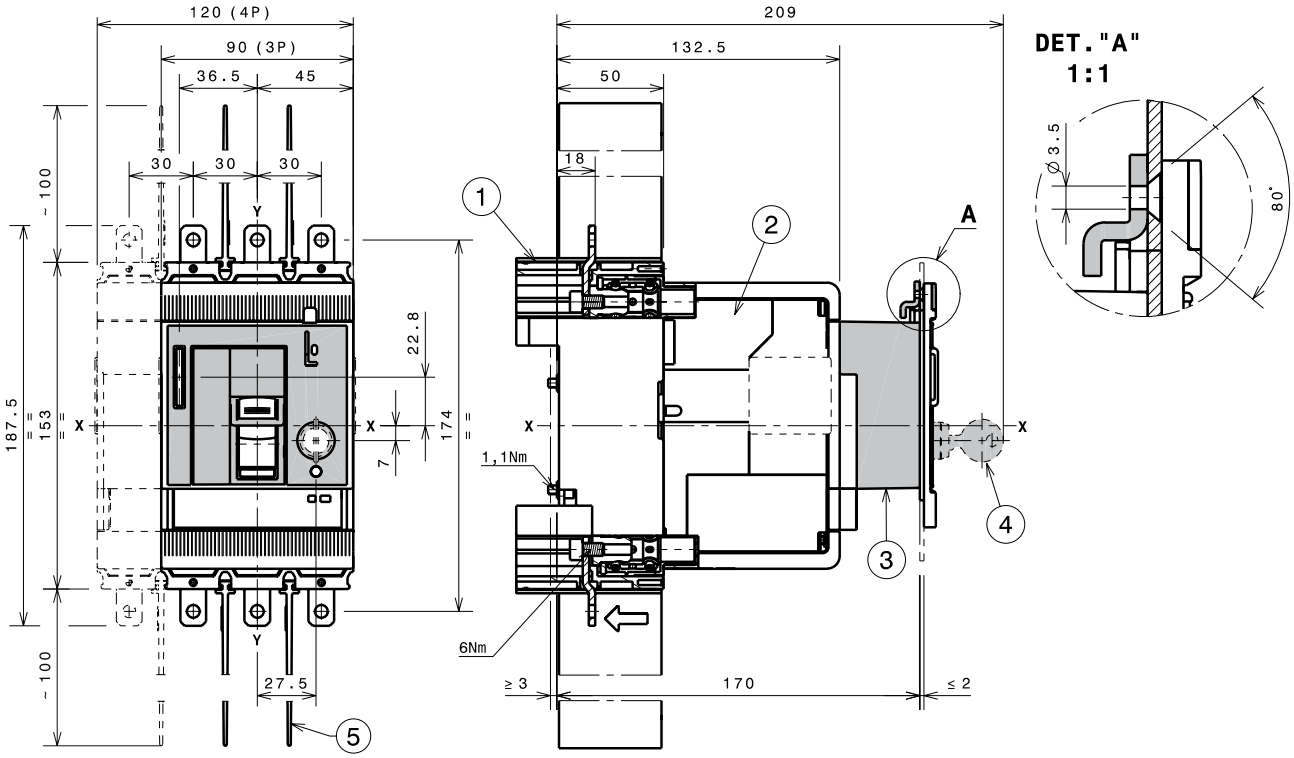
Key

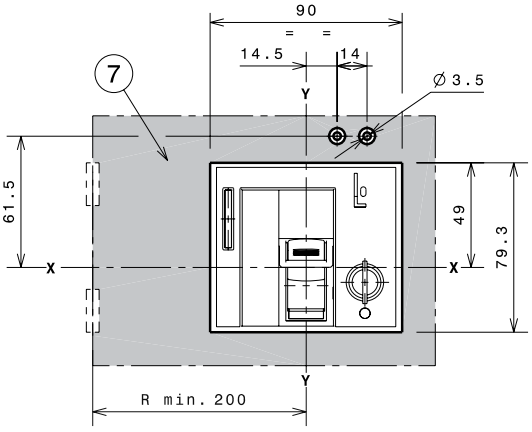
1 Fixed part
2 Moving part
3 MOE
4 Key lock optional
5 100mm insulating barriers between phases (compulsory) provided
6 Drilling template of door with direct rotary handle with flange
7 Drilling template of door with direct rotary handle without flange

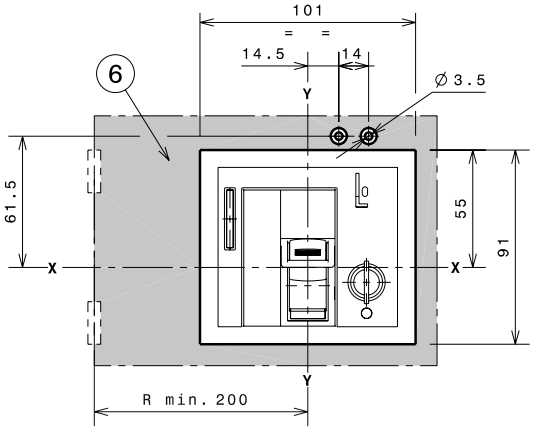
Tmax XT2 – Installation

Accessories for plug-in circuit-breaker

Front for lever operating mechanism (FLD)



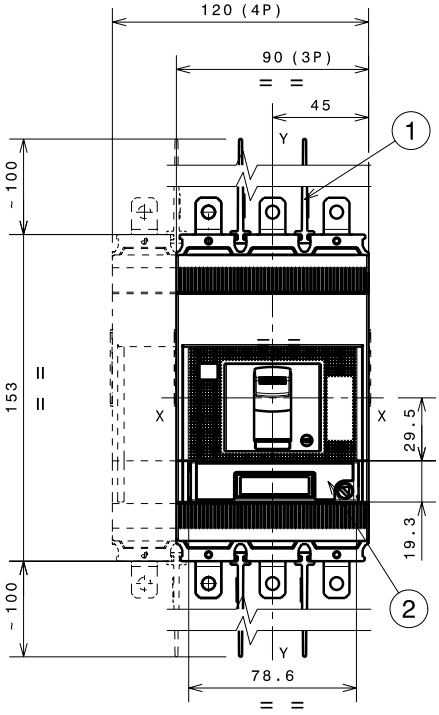


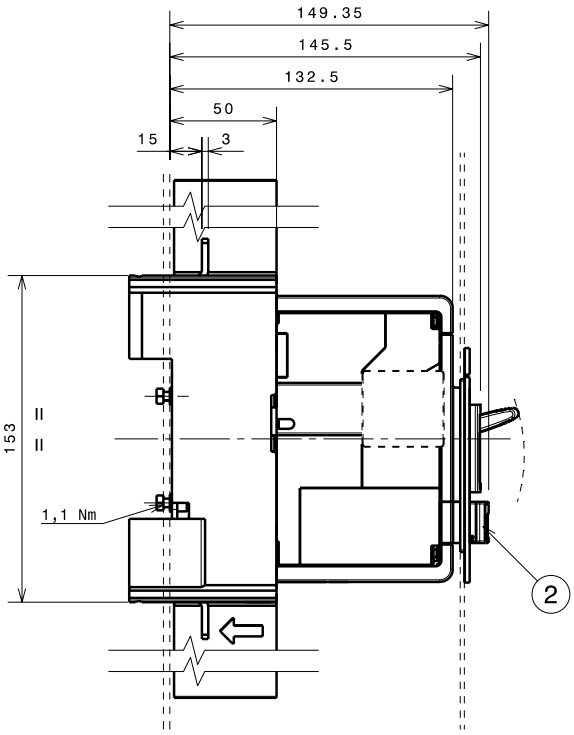


Key

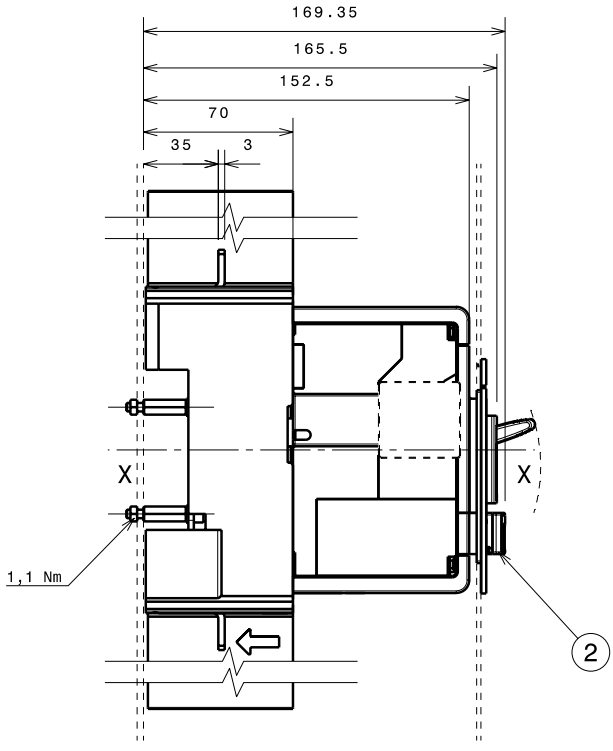
1 Fixed part
2 Moving part
3 Front for lever operating mechanism (FLD)
4 Key lock optional
5 100mm insulating barriers between phases (compulsory) provided
6 Drilling template of door with direct rotary handle with flange
7 Drilling template of door with direct rotary handle without flange

Ekip Display or Ekip LED Meter





FIXING AT 50mm



FIXING AT 50mm

—

Key

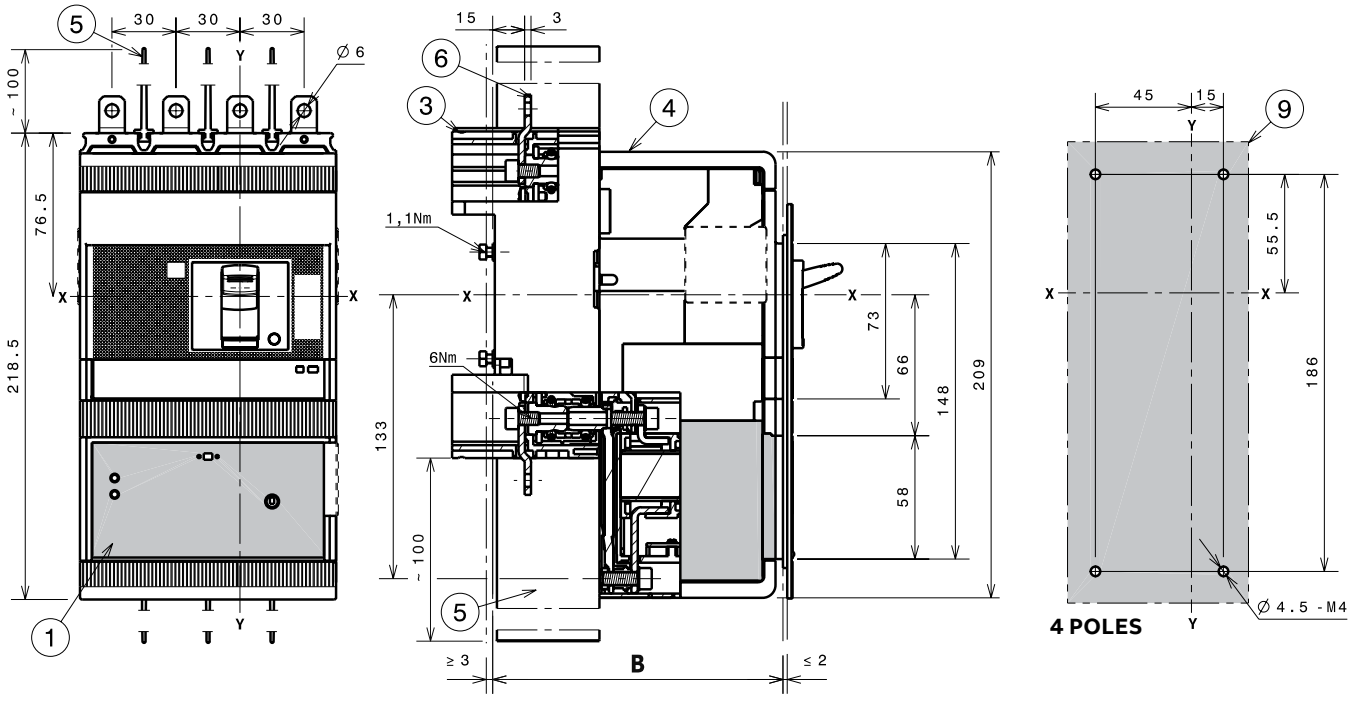
1 100mm insulating barriers between phases

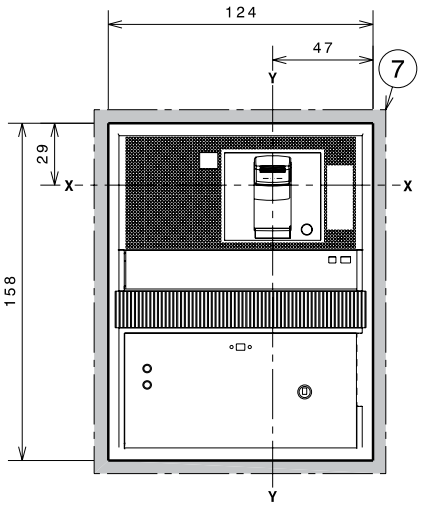
2 Ekip Display or Ekip LED Meter

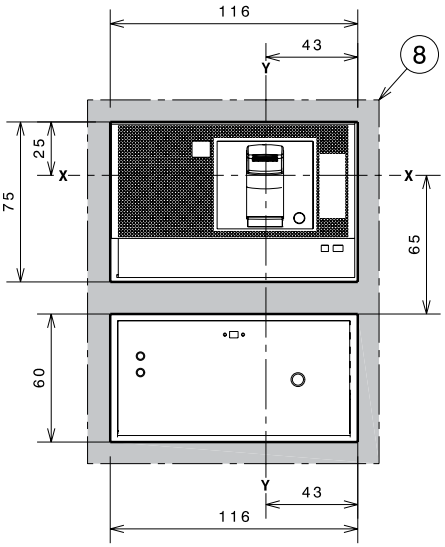
Tmax XT2 – Installation

Accessories for plug-in circuit-breaker

Residual current RC Sel







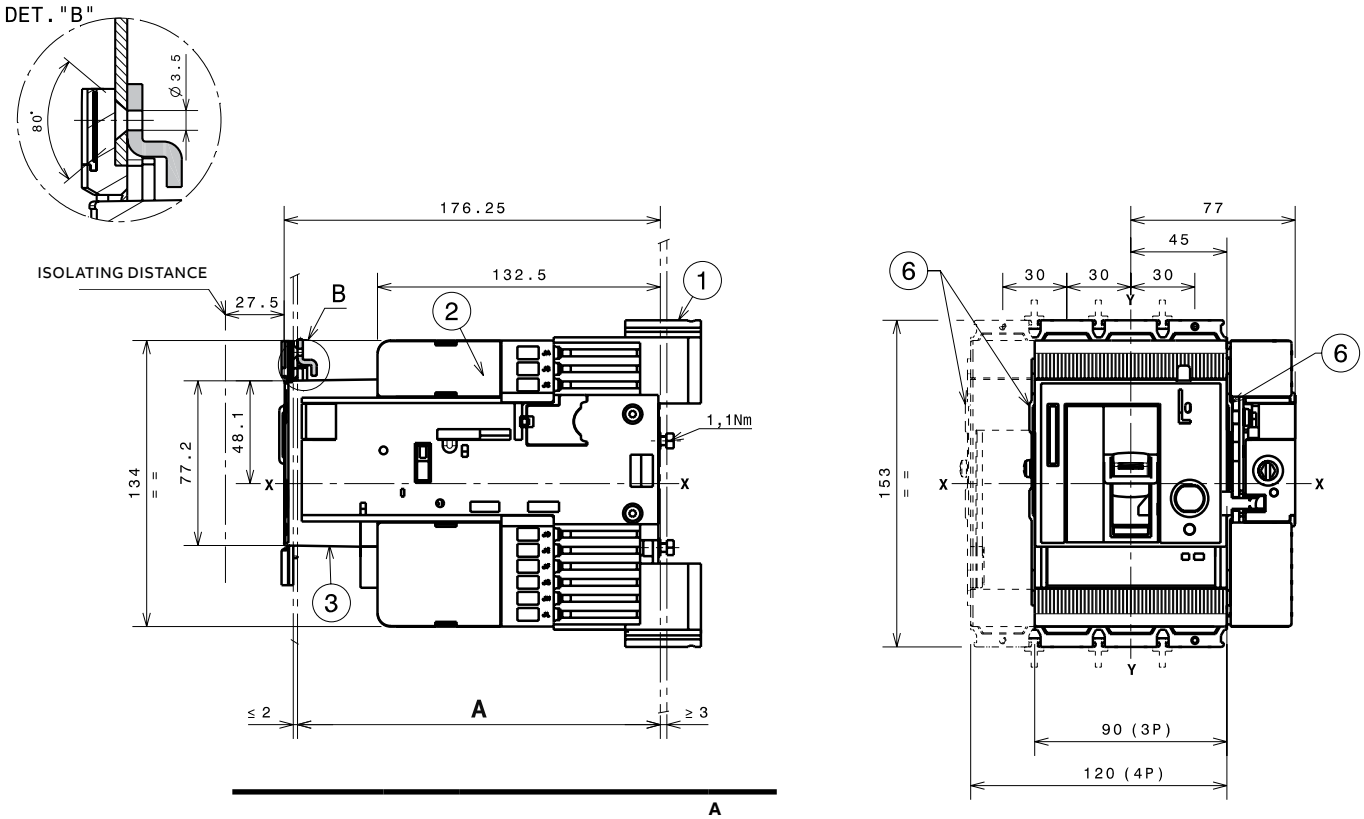
Key
1 Residual current
3 Fixed part
4 Moving part
5 100mm insulating barriers between phases (compulsory) provided
6 Extended terminals
7 Drilling template of door with direct rotary handle and fixing with flange
8 Drilling template of door with direct rotary handle and fixing without flange
9 Drilling template for circuit-breaker fixing on sheet

		A
With standard flange	IV	136
Without flange	IV	133.5

Tmax XT2 – Installation

Installation for withdrawable circuit-breaker

Fixing on sheet



			A
With standard flange	III - IV	Fixing at 50mm	170
	III - IV	Fixing at 70mm for extended front terminals	190

—

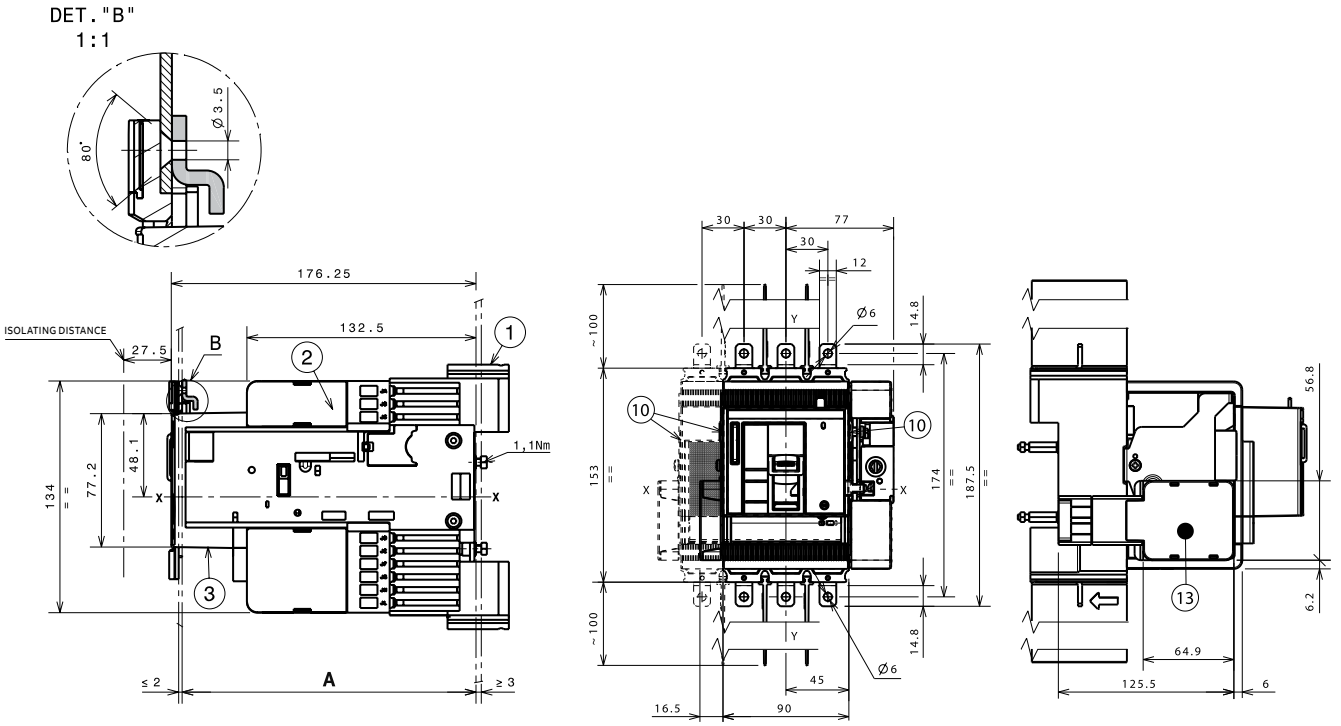
Key

1 Fixed part
2 Moving part
3 FLD (FLD o RHD o RHE o MOE) mandatory for withdrawable version
6 Optional wiring ducts

Tmax XT2 – Installation

Installation for withdrawable circuit-breaker

With side connector for Ekip Touch trip units



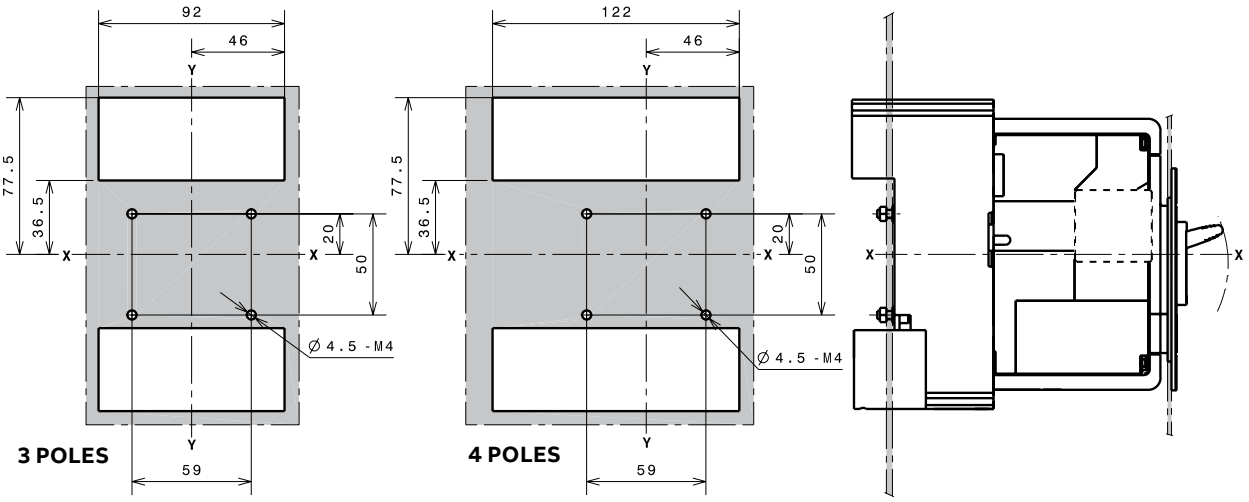
			A
With standard flange	III - IV	Fixing at 50mm	170
	III - IV	Fixing at 70mm for extended front terminals	190

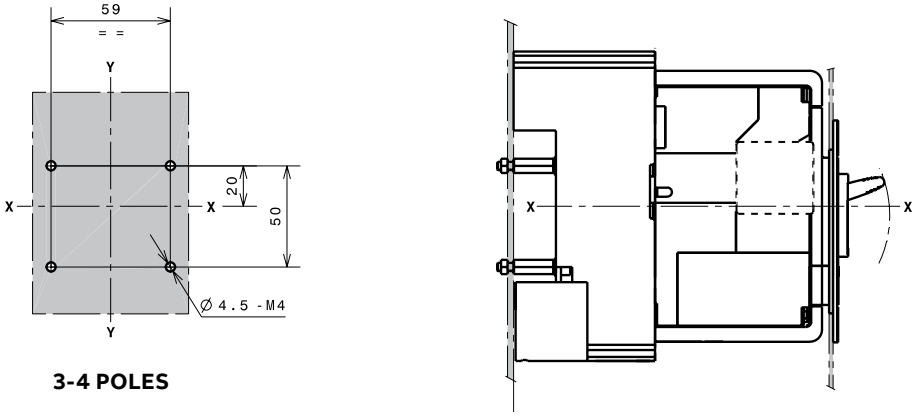
—

Key

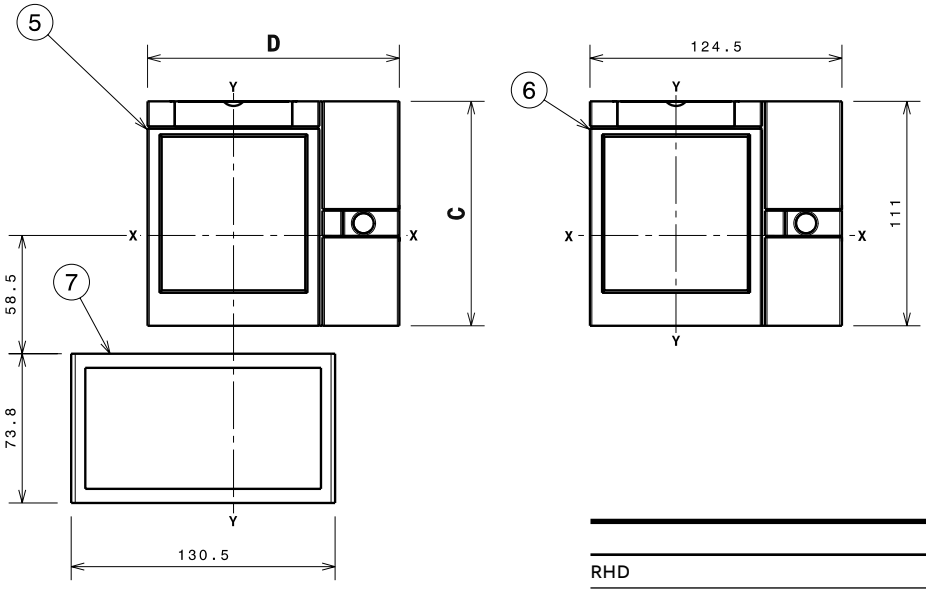
1 Fixed part
2 Moving part
3 FLD (FLD o RHD o RHE o MOE) mandatory for withdrawable version
10 Optional Wiring Duct
13 Connection Kit W IntBus/ExtNeut/Sel

Drilling templates for support sheet





Flanges



Key
5 Flange for circuit-breaker III-IV withdrawable
6 Flange for circuit-breaker withdrawable III-IV with direct rotary handle RHD
7 Flange for circuit-breaker residual current IV withdrawable with front extended terminals

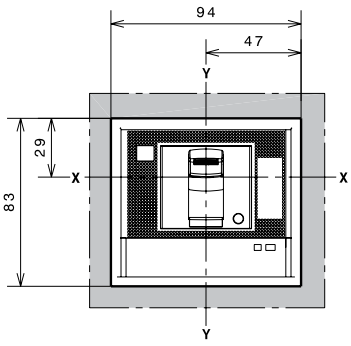
	C	D
RHD	111	124.5
FLD - MOE	114.3	134.5

Tmax XT2 – Installation

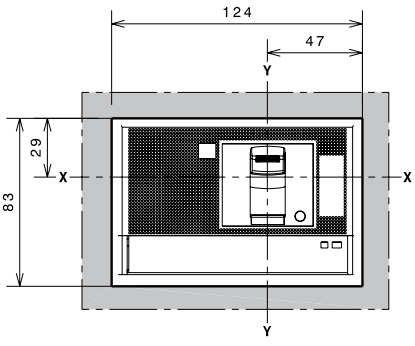
Installation for withdrawable circuit-breaker

Drilling templates compartment door

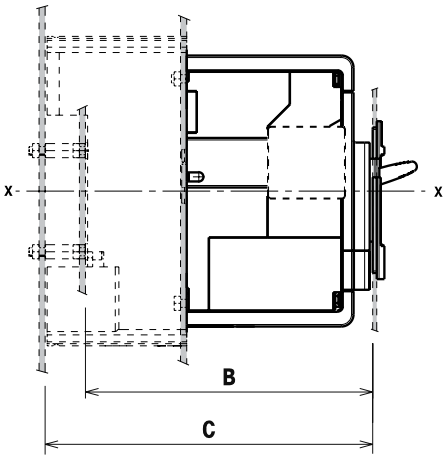
With standard flange



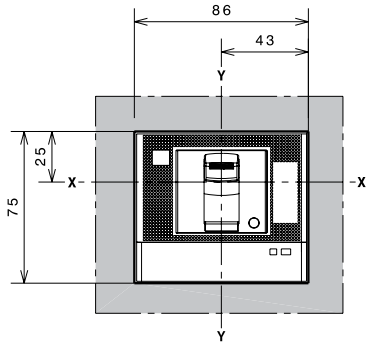
B=136 C=156
3 POLES



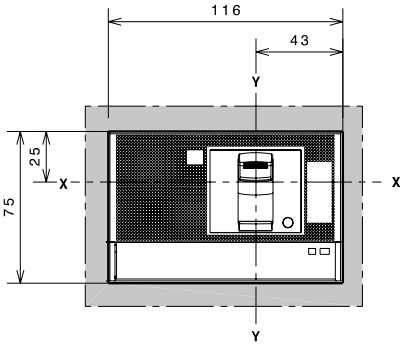
B=136 C=156
4 POLES



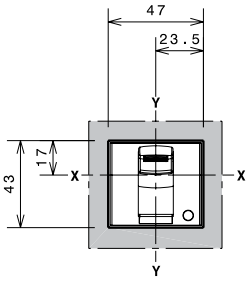
Without flange



B=133.5 C=153.5
3 POLES

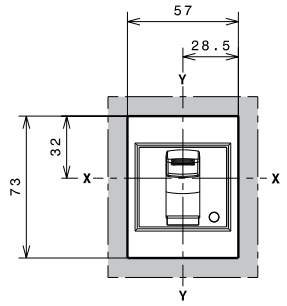


B=133.5 C=153.5
4 POLES

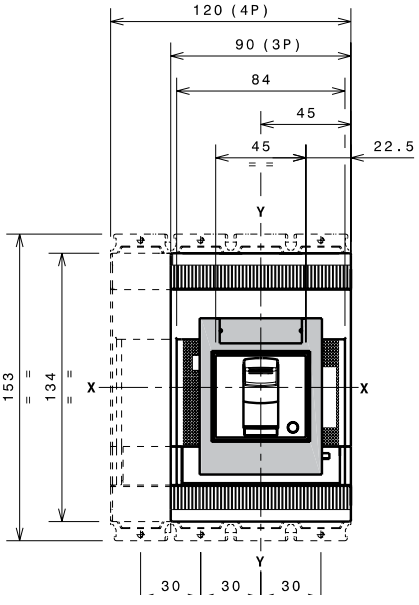


B=141.5 C=101.5
3-4 POLES

With standard flange



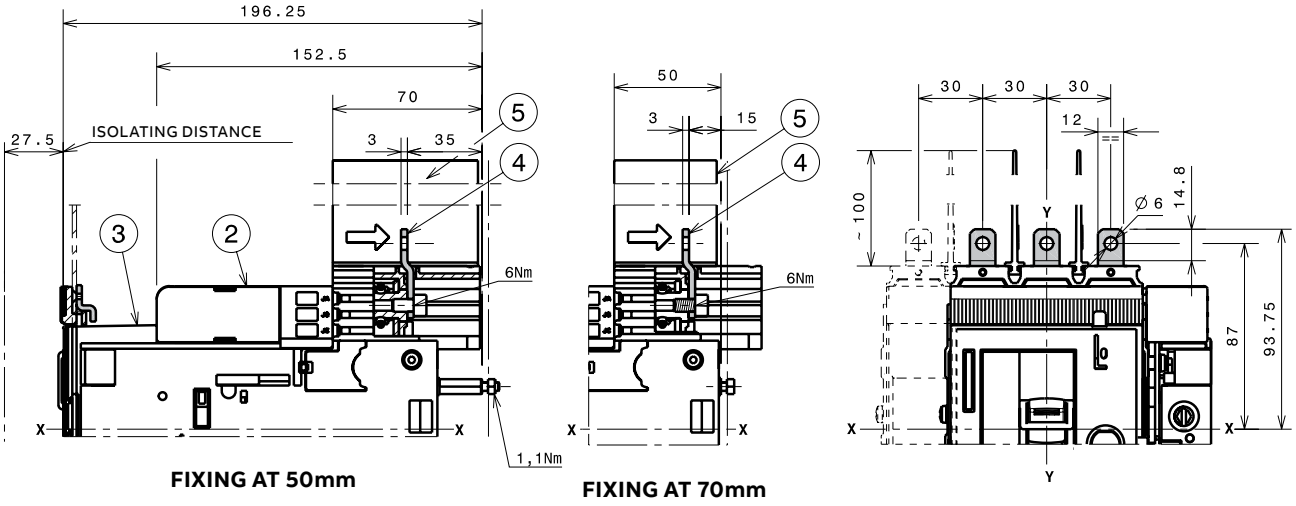
B=142 C=162
3-4 POLES



Tmax XT2 – Installation

Terminals for withdrawable circuit-breaker

Terminals EF



FIXING AT 50mm

FIXING AT 70mm

—

Key

2 Moving part
3 FLD (FLD or RHD or RHE or MOE) mandatory for withdrawable version
4 Front extended terminals
5 100mm insulating barriers between phases (compulsory) provided

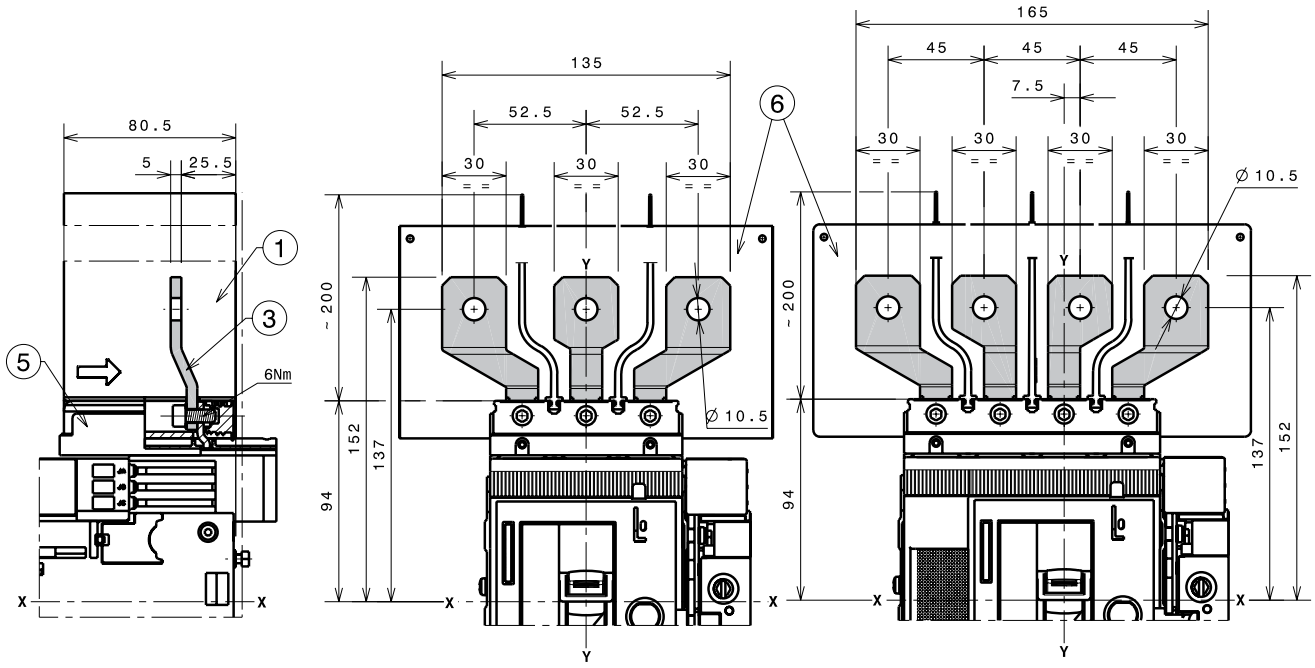
—

Note:
insulated plate (compulsory) provided

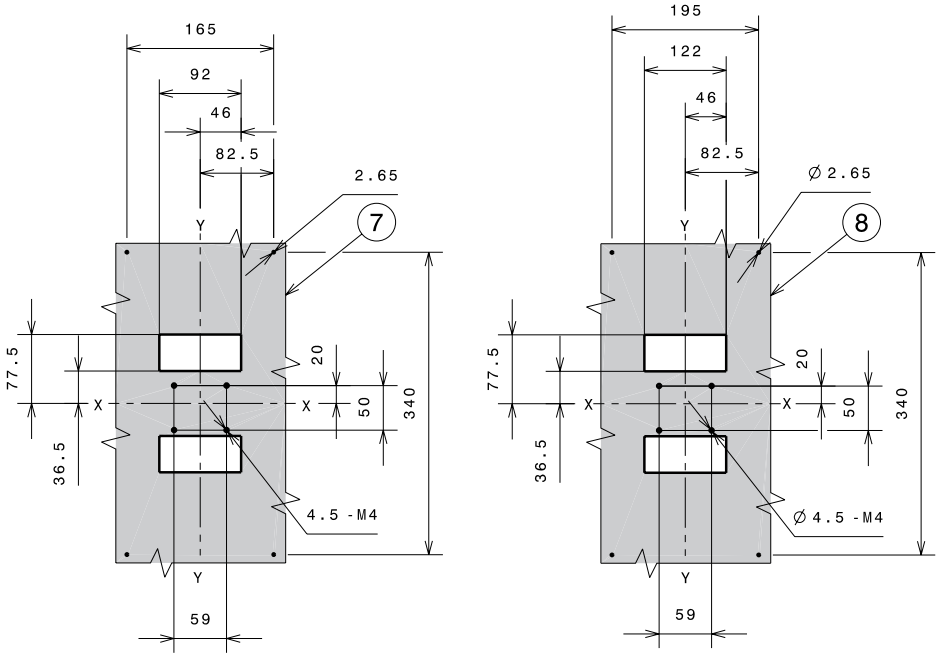
Tmax XT2 – Installation

Terminals for withdrawable circuit-breaker

Terminals ES



FIXING AT 50mm

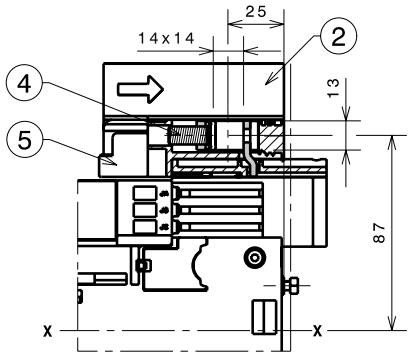


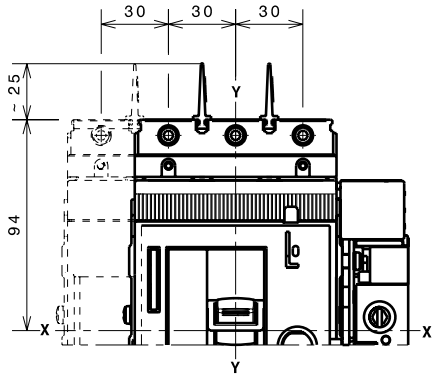
Key

1 200mm insulating barriers between phases (compulsory) provided
3 Front extended spread terminals
5 Adaptor (compulsory) not provided
6 Insulated plate (compulsory) provided
7 Drilling template for 3p circuit-breaker Ue>440V (compulsory)
8 Drilling template for 4p circuit-breaker Ue>440V (compulsory)

1x1...95mm² terminals FCCuAl

Key
2 25mm insulating barriers between phases (compulsory) provided
4 1x1...95mm² front terminals FcCuAl
5 Adaptor (compulsory) not provided

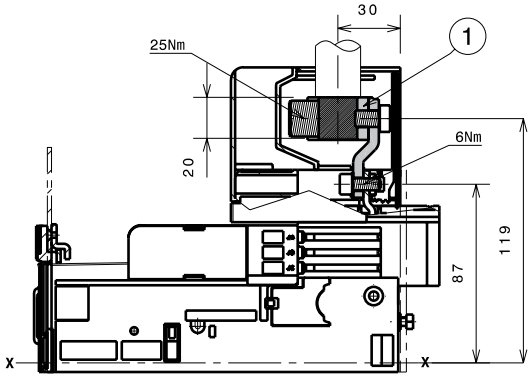


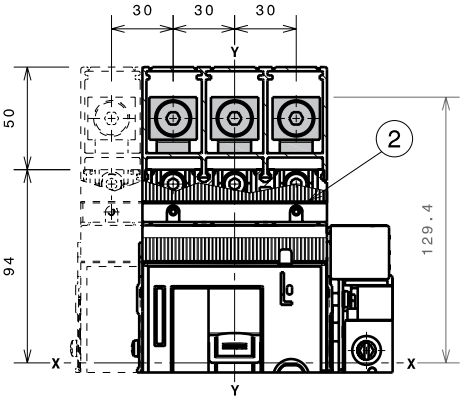


FIXING AT 50mm

1x70...185mm² terminals FCCuAl

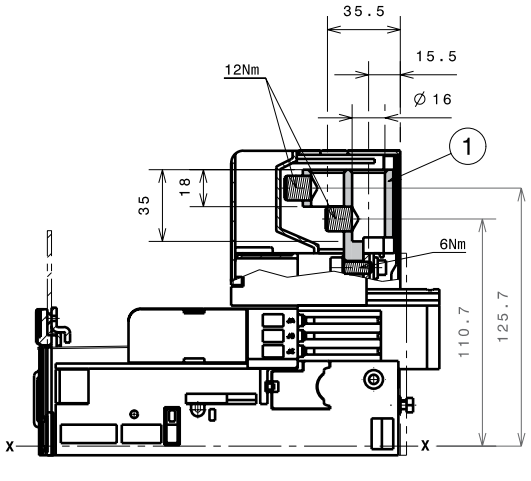
Key
1 External terminal FCCuAl
2 High terminal covers with degree of protection IP40 (optional) provided

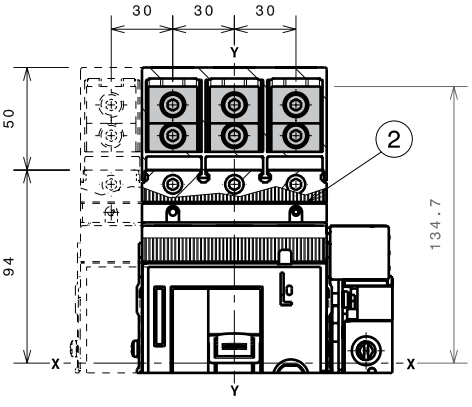




2x35...95mm² terminals FCCuAl

Key
1 External terminal FCCuAl 2x95mm²
2 High terminal covers with degree of protection IP40 (optional) provided



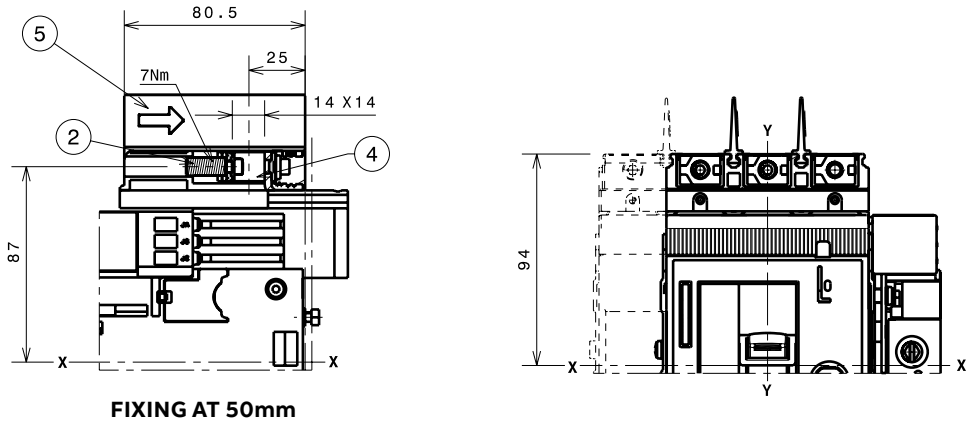


Tmax XT2 – Installation

Terminals for withdrawable circuit-breaker

Terminals FCCu

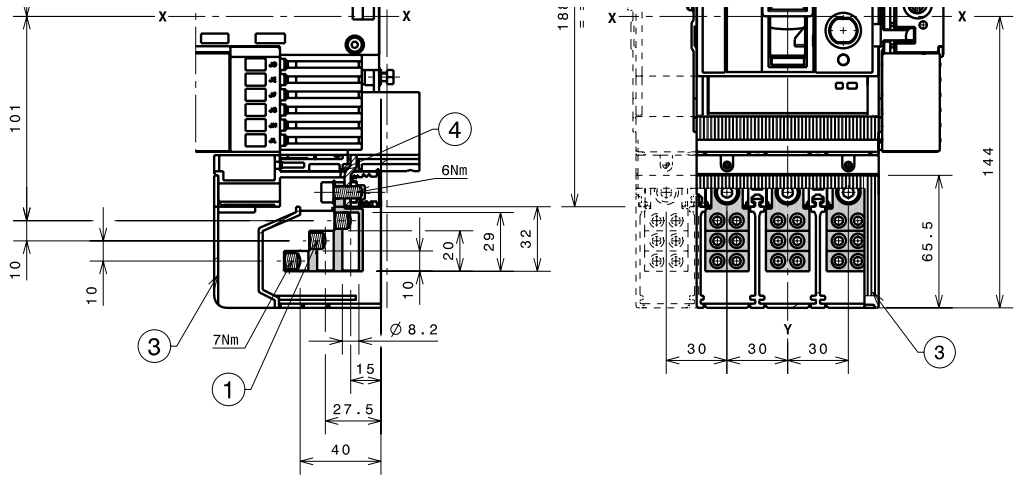
Key
2 Terminals FCCu
4 Adaptor (compulsory) not provided
5 25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker



FIXING AT 50mm

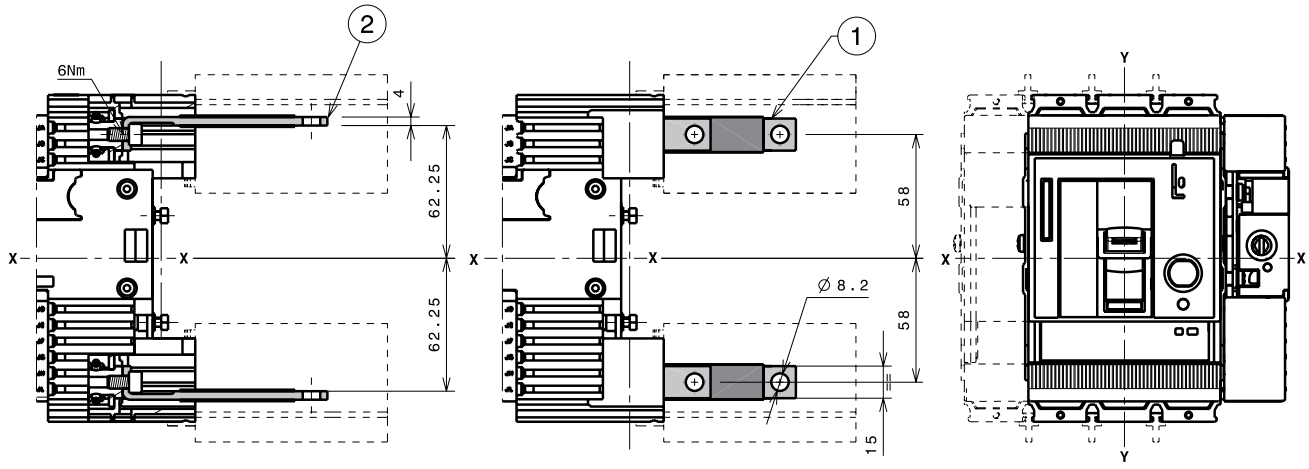
Terminals MC

Key
1 Multicable terminals
3 High terminal covers with degree of protection IP40 (optional) provided
4 Adaptor (compulsory) not provided

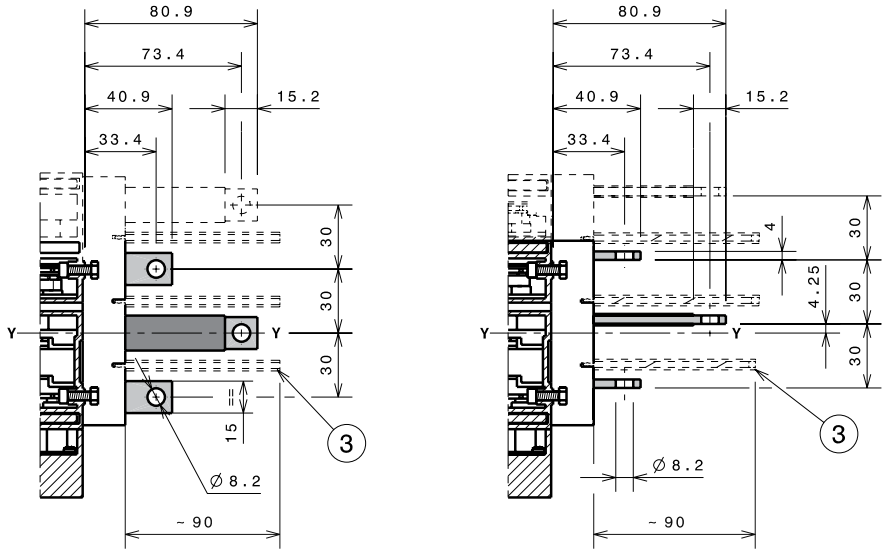


FIXING AT 50mm

Terminals HR/VR



FIXING AT 50mm **FIXING AT 50mm**



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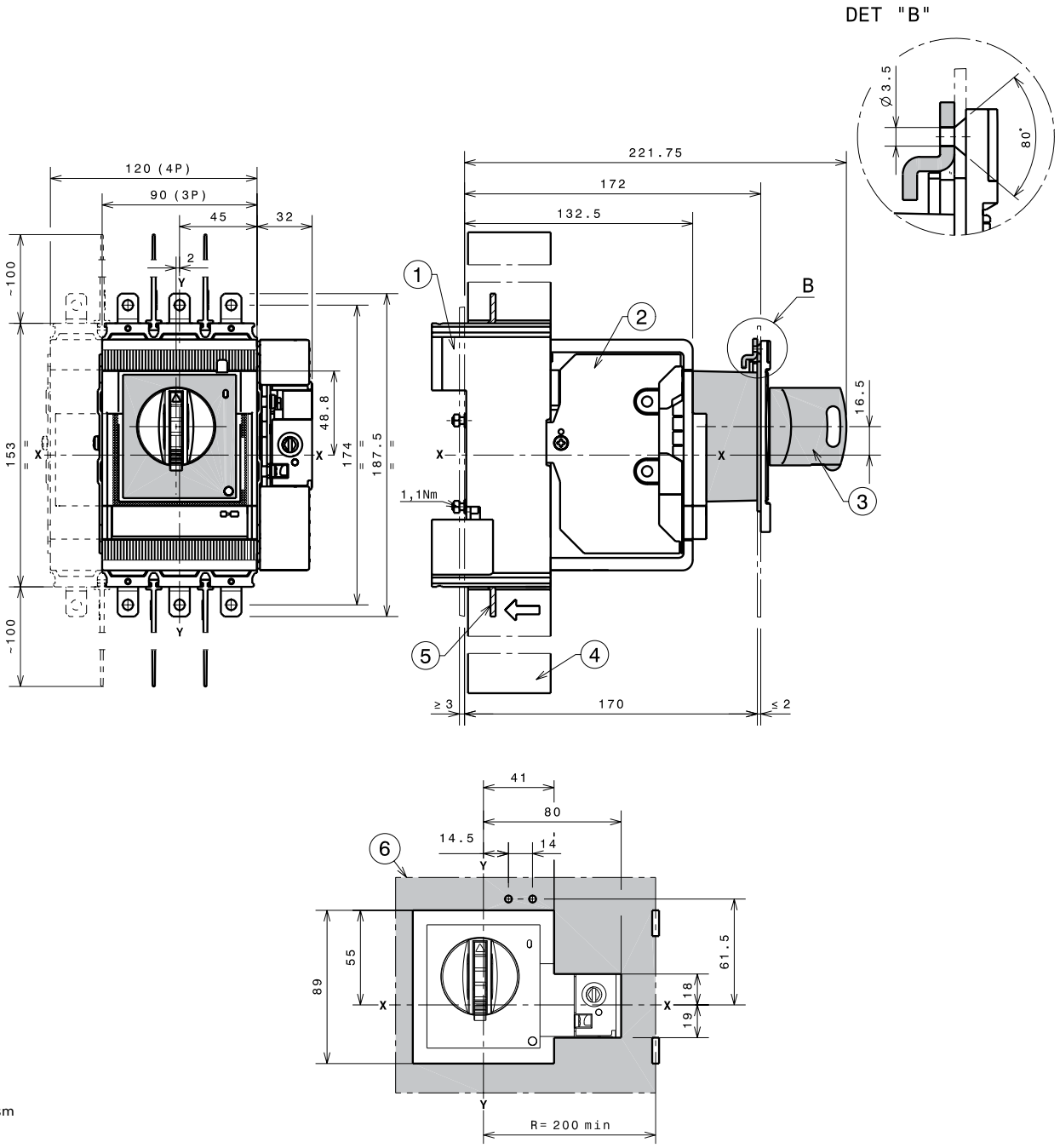
Key

1 Rear vertical terminals
2 Rear horizontal terminals
3 90mm insulating barriers between phases (compulsory) not provided

Tmax XT2 – Installation

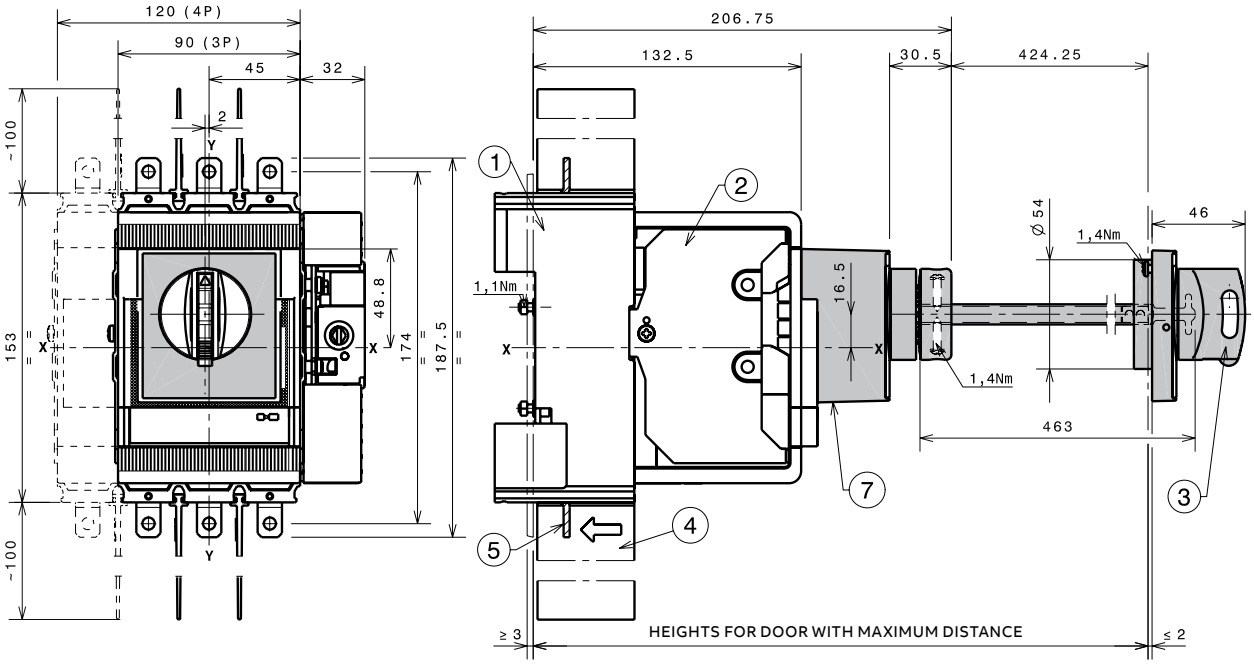
Accessories for withdrawable circuit-breaker

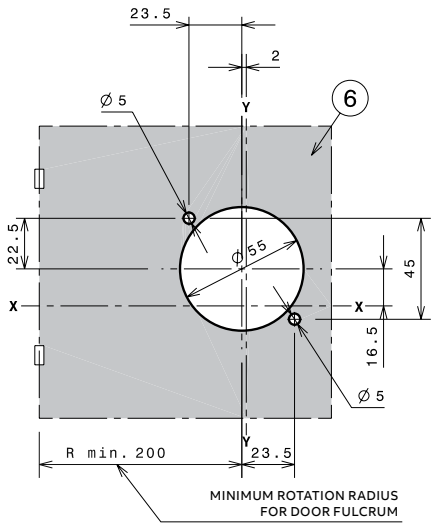
Rotary handle operating mechanism on circuit-breakers (RHD)

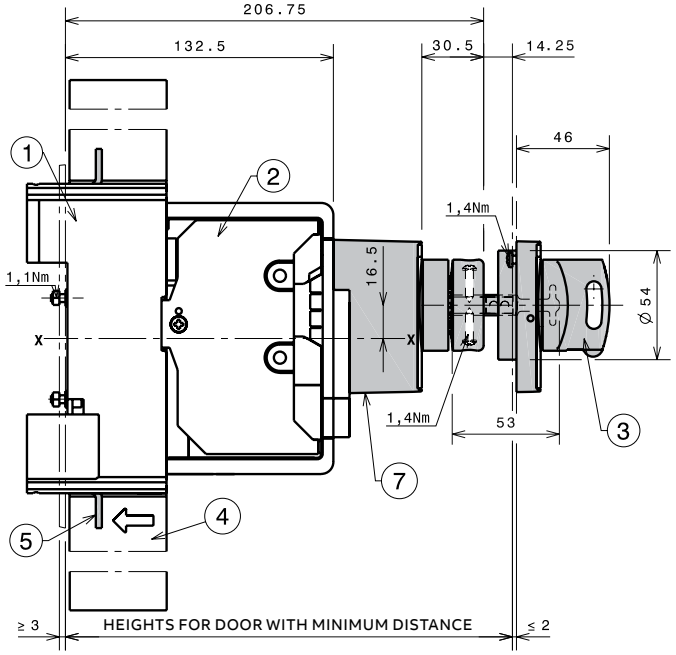


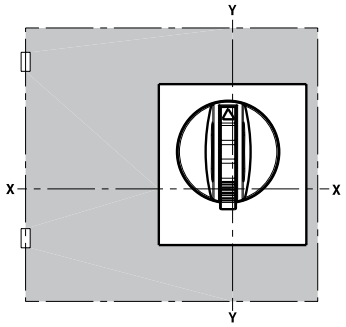
Key
1 Fixed part
2 Moving part
3 Rotary handle operating mechanism on circuit-breaker
4 100mm insulating barriers between phases (compulsory) provided
5 Extended terminals
6 Drilling template of door with direct rotary handle

Rotary handle operating mechanism on the compartment door (RHE)









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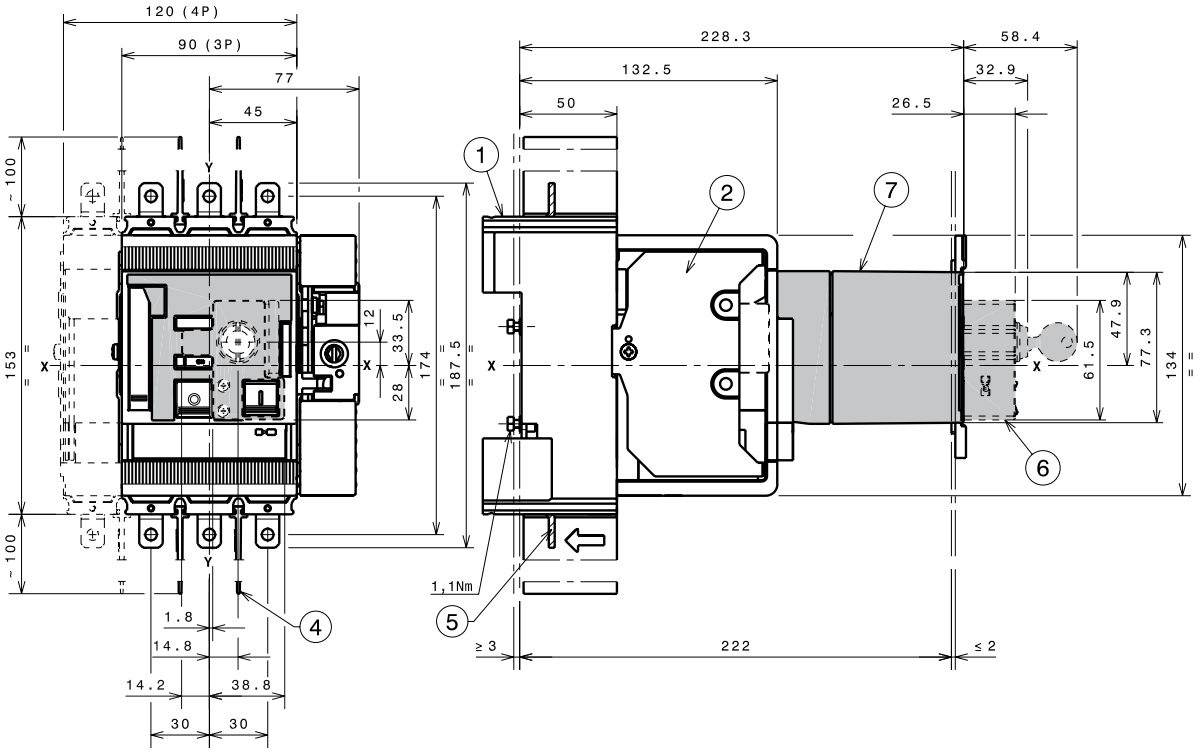
Key

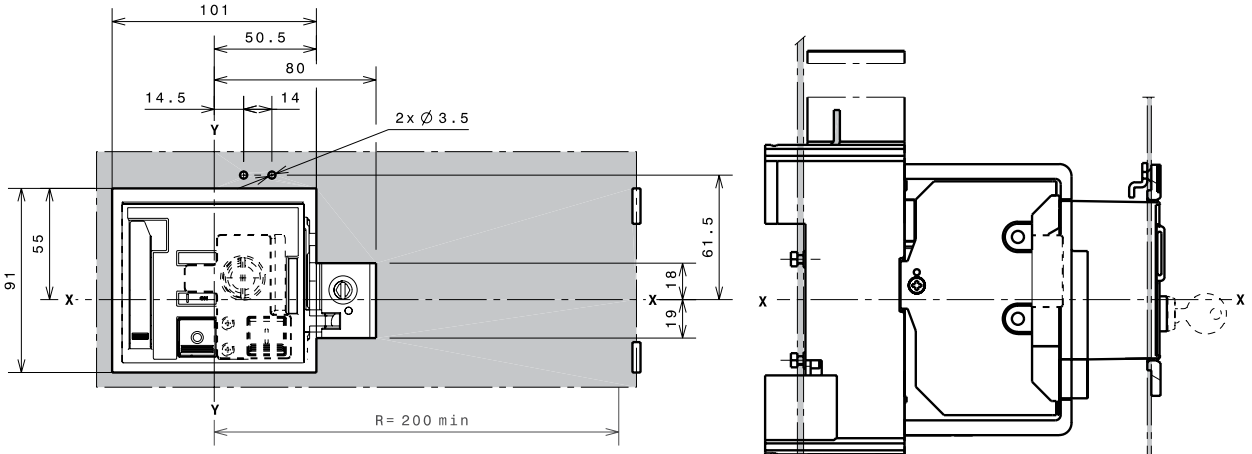
1 Fixed part
2 Moving part
3 Rotary handle operating mechanism on the compartment door (RHE)
4 100mm insulating barriers between phases (compulsory) provided
5 Extended terminals
6 Door drilling template with transmetted rotary handle
7 Transmission unit

Tmax XT2 – Installation

Accessories for withdrawable circuit-breaker

Stored energy motor operator (MOE)

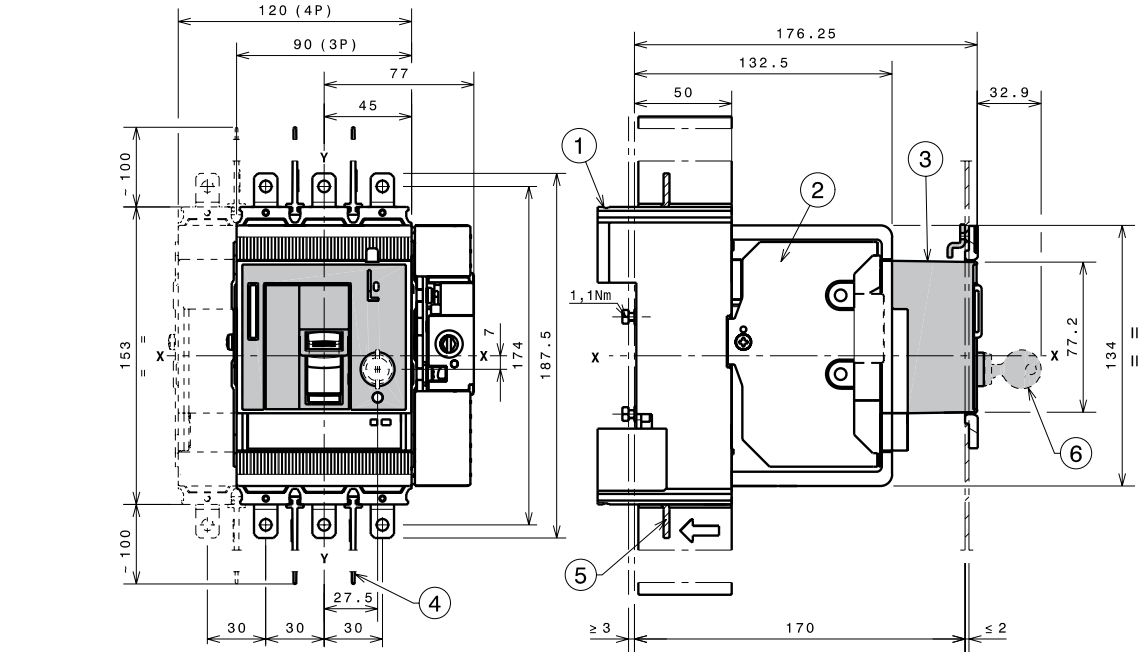


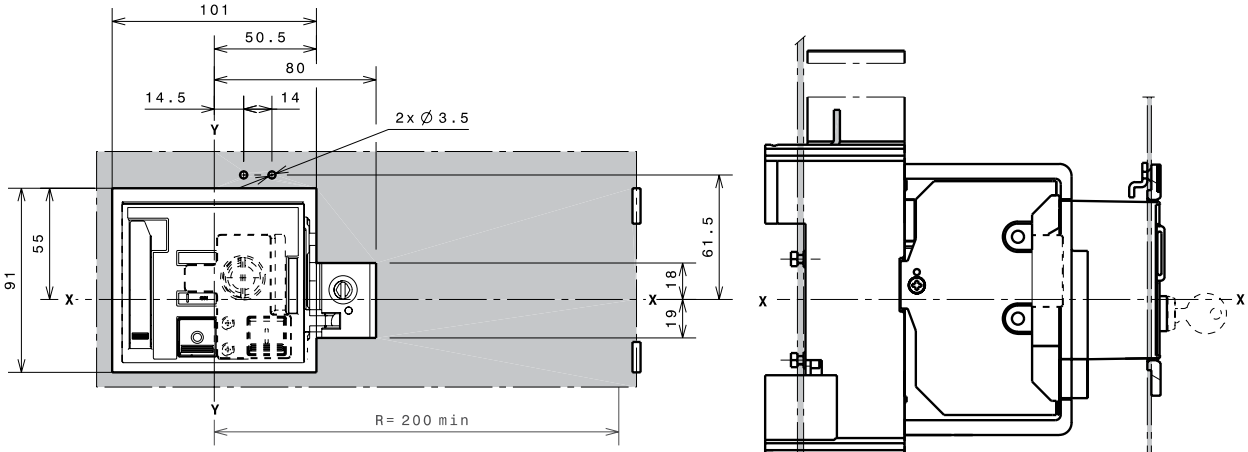


Key
1 Fixed part
2 Moving part
4 100mm insulating barriers between phases (compulsory) provided
5 Extended terminals
6 Key lock optional
7 Stored energy motor operator (MOE)

		A
Motor operator MOE	III-IV	222

Front for lever operating (FLD)





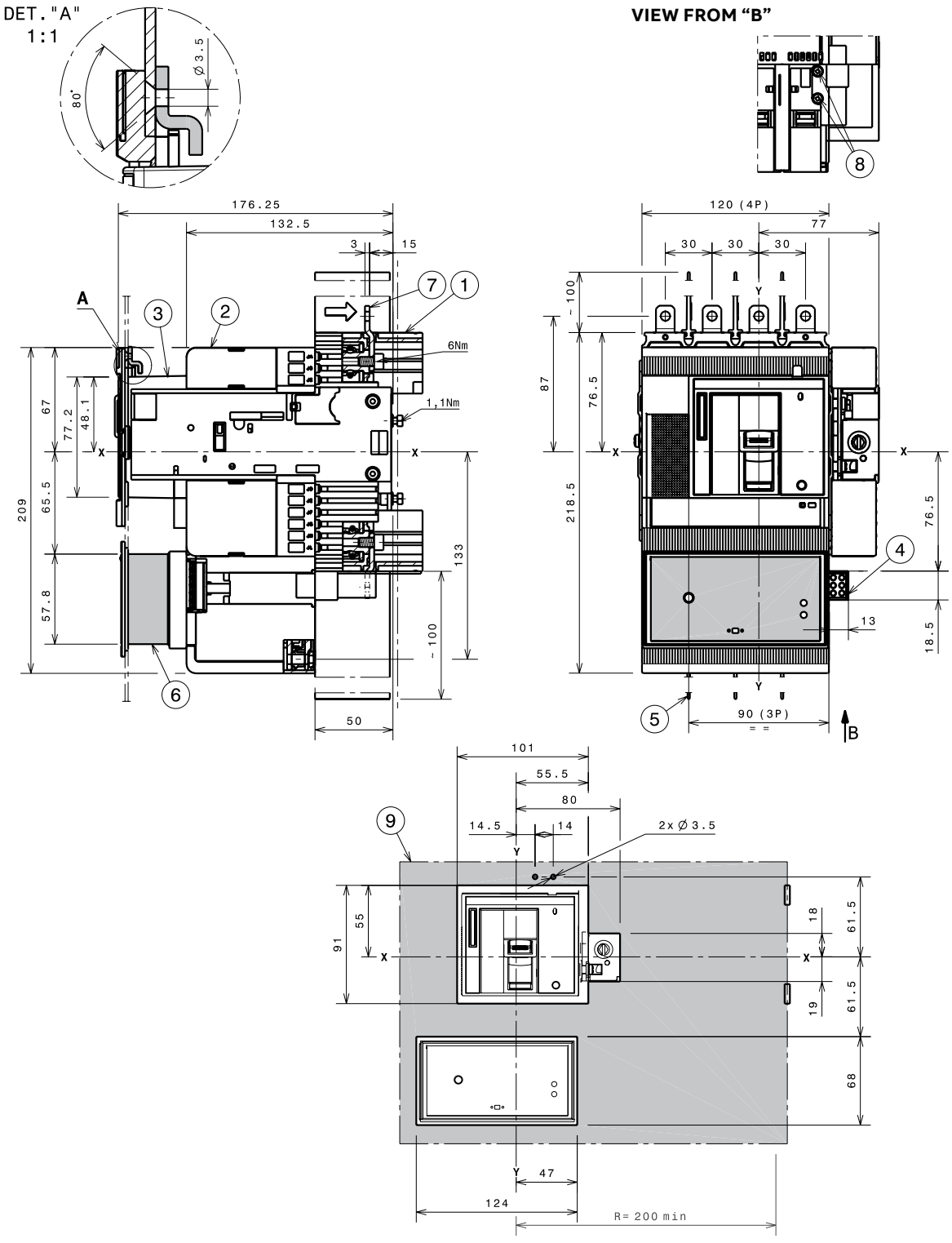
Key
1 Fixed part
2 Moving part
3 Front for lever operating (FLD)
4 100mm insulating barriers between phases (compulsory) provided
5 Extended terminals
6 Key lock optional

		A
Front for lever operating FLD	III-IV	170

Tmax XT2 – Installation

Accessories for withdrawable circuit-breaker

Residual current RC Sel 4 poles



Key

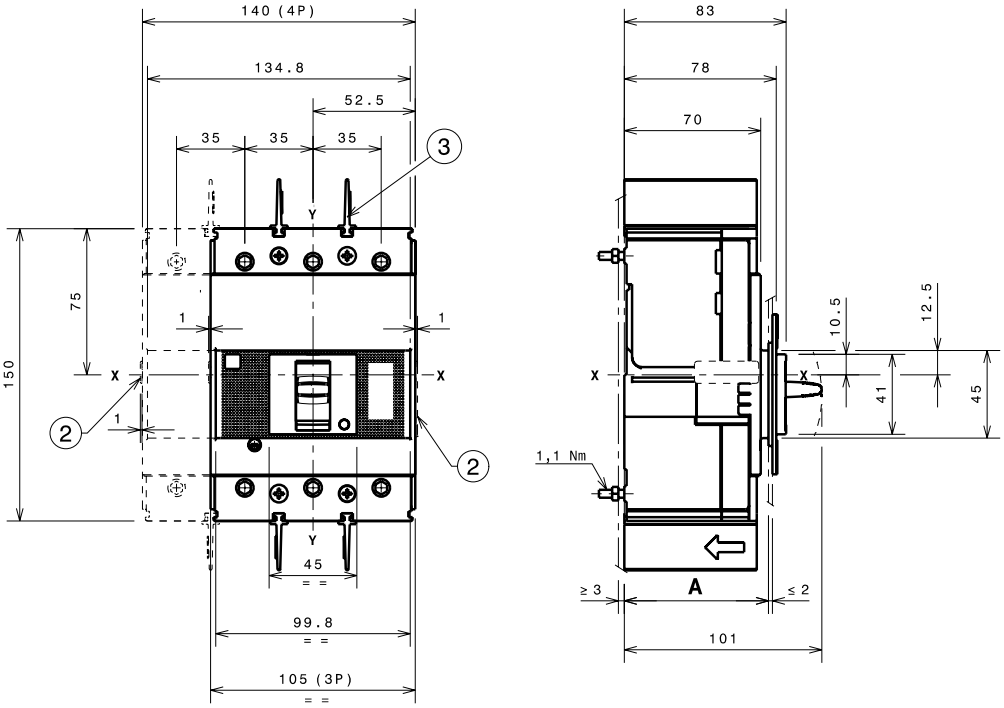
1 Fixed part
2 Moving part
3 Front for lever operating
4 Residual current connector (optional)
5 100mm insulating barriers between phases (compulsory) provided
6 Residual current
7 Extended terminals
8 Fixing screws for fixed part of connector
9 Door drilling template and flange fixing

Tmax XT3 – Installation

Installation for fixed circuit-breaker

Fixing on sheet

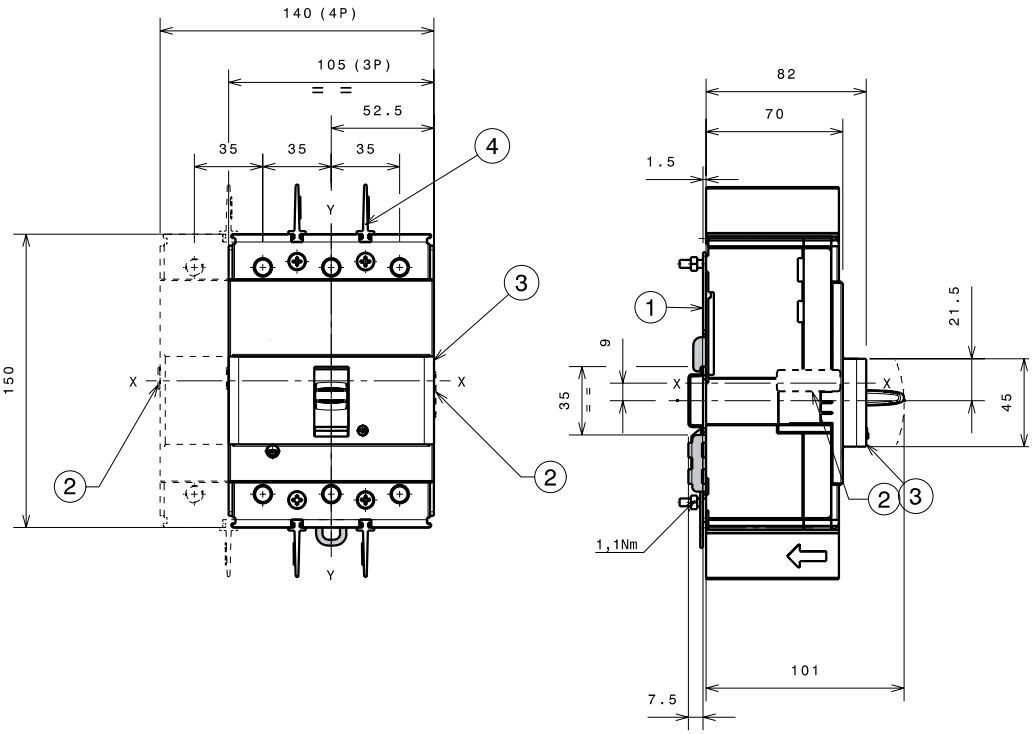
Key
2 Overall dimension of optional wiring ducts
3 25mm insulating barriers between phases (compulsory) provided



		A
With standard flange	II IV	74
Without flange	III - IV	71
	III - IV	79

Fixing on DIN EN 50022 rail

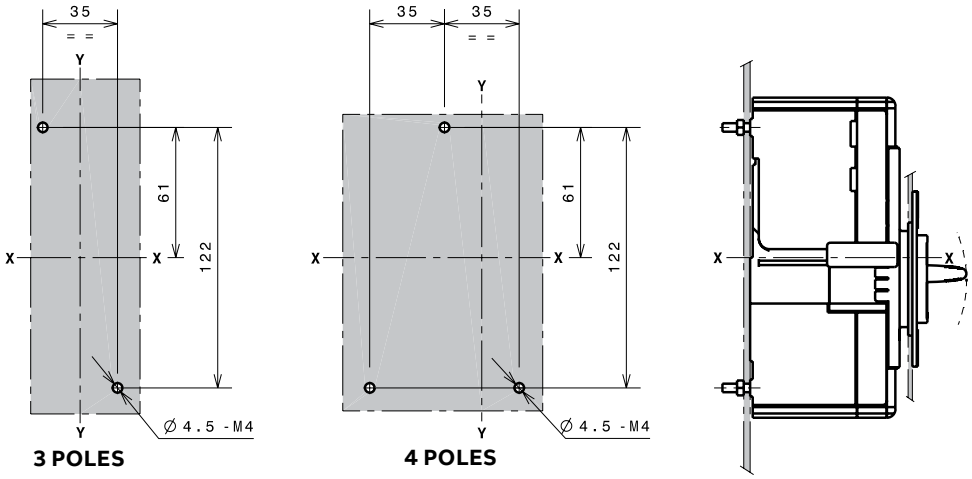
Key
1 Bracket for fixing
2 Optional wiring ducts
3 Optional front cover for DIN rail
4 25mm insulating barriers between phases (compulsory) provided



Tmax XT3 – Installation

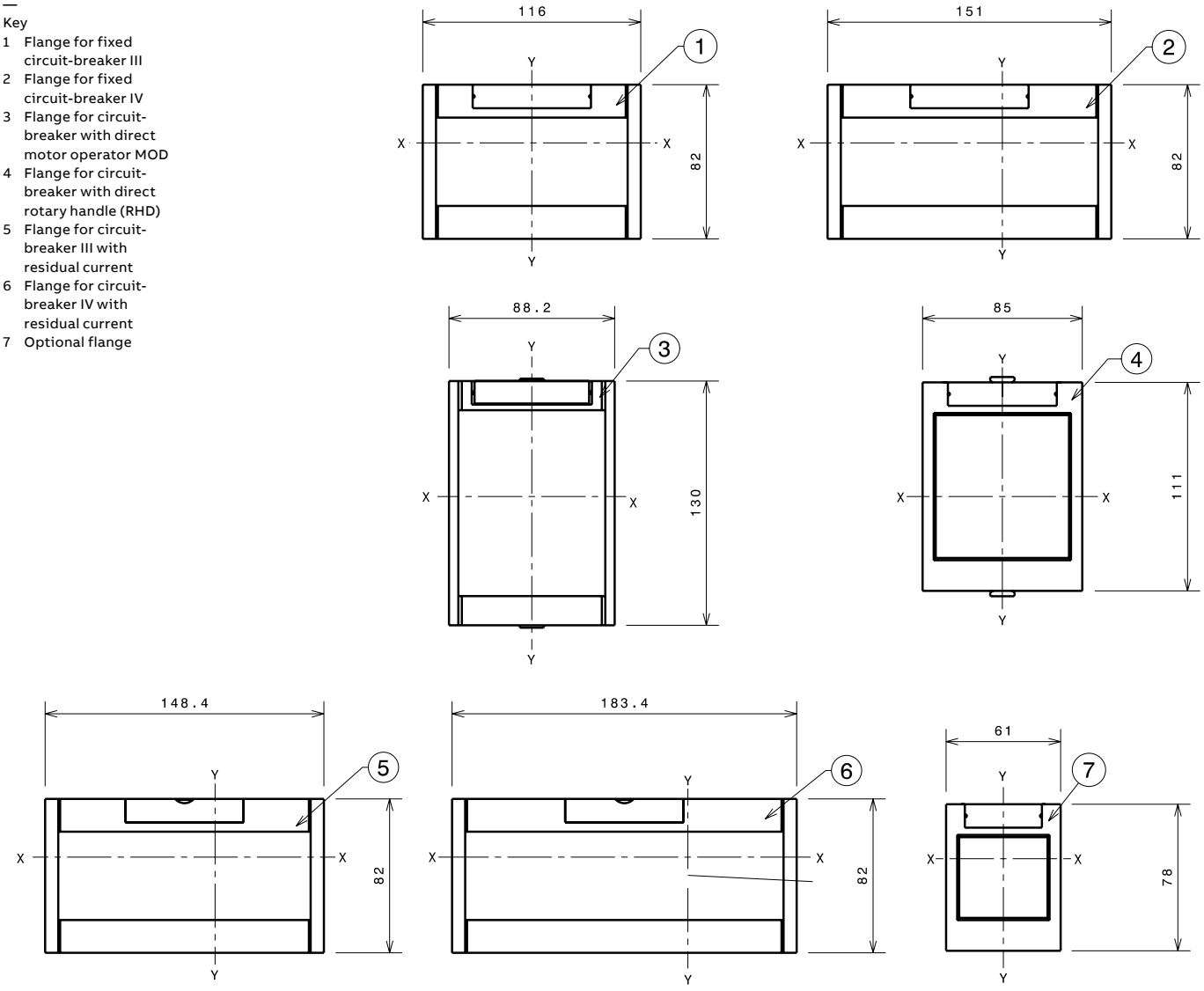
Installation for fixed circuit-breaker

Drilling templates for circuit-breaker fixing



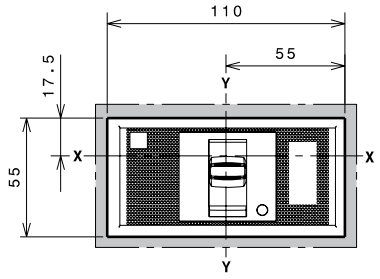
Flanges

Key
1 Flange for fixed circuit-breaker III
2 Flange for fixed circuit-breaker IV
3 Flange for circuit-breaker with direct motor operator MOD
4 Flange for circuit-breaker with direct rotary handle (RHD)
5 Flange for circuit-breaker III with residual current
6 Flange for circuit-breaker IV with residual current
7 Optional flange

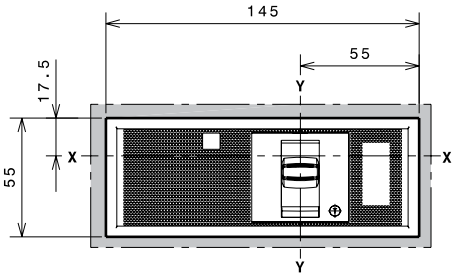


Drilling templates compartment door

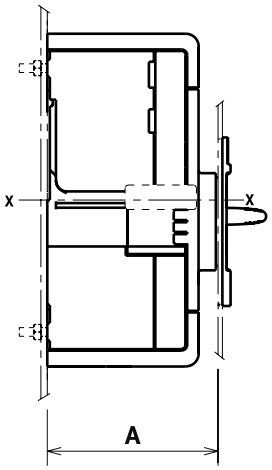
With standard flange



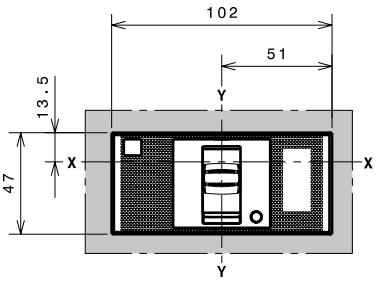
A=74
3 POLES



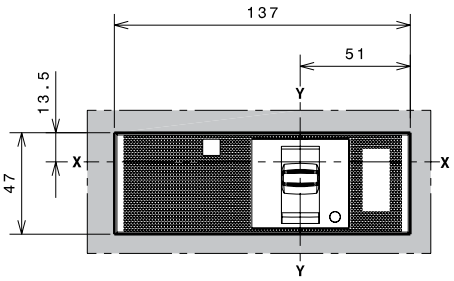
A=74
4 POLES



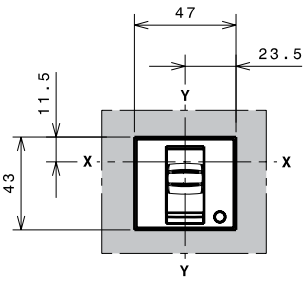
Without flange



A=71
3 POLES

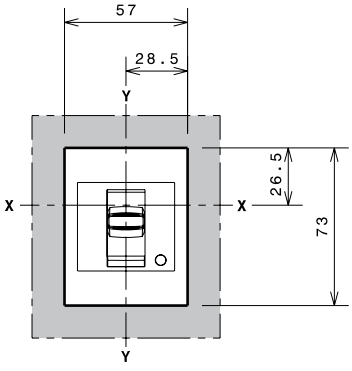


A=71
4 POLES

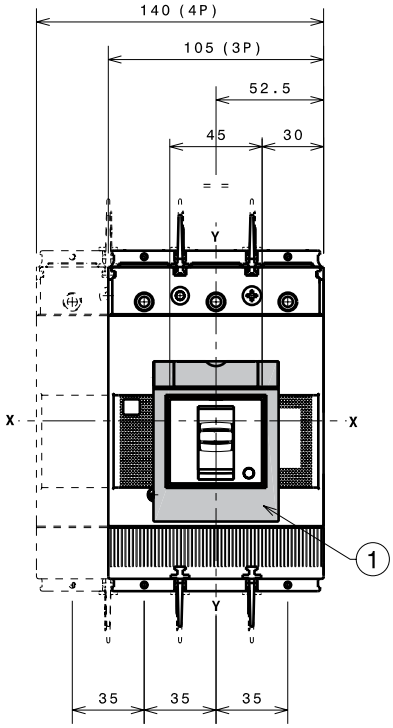


A=79
3-4 POLES

With optional flange



A=79
3-4 POLES



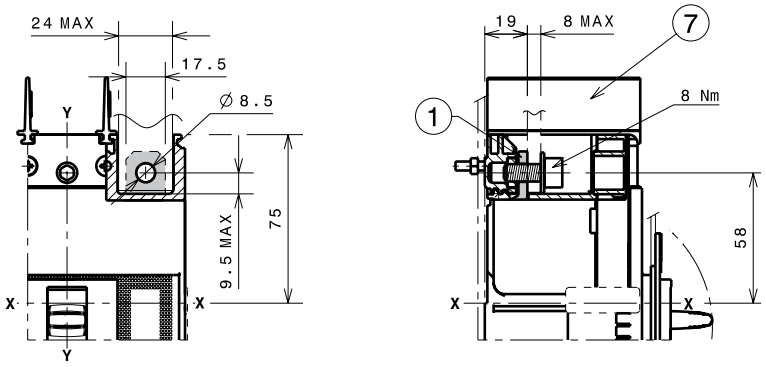
—
Key
1 Optional flange

Tmax XT3 – Installation

Terminals for fixed circuit-breaker

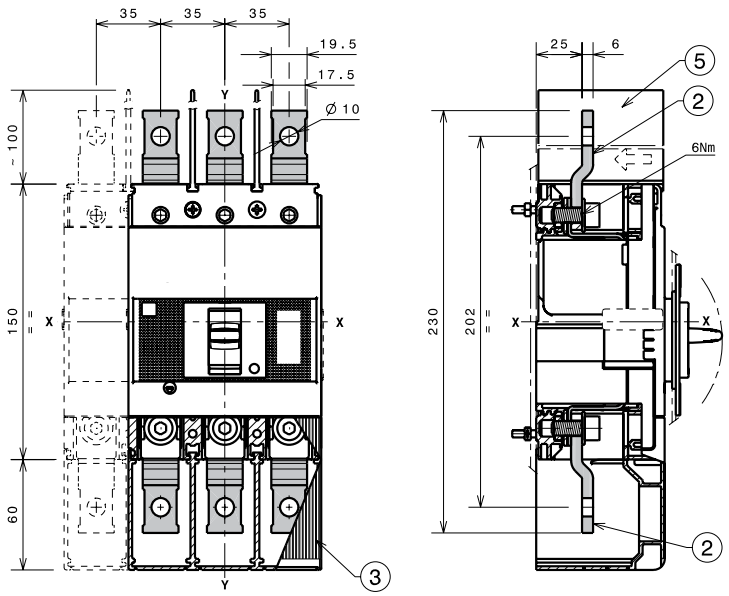
Terminals F

Key
1 Front terminals for busbars connection
7 25mm insulating barriers between phases (compulsory) provided



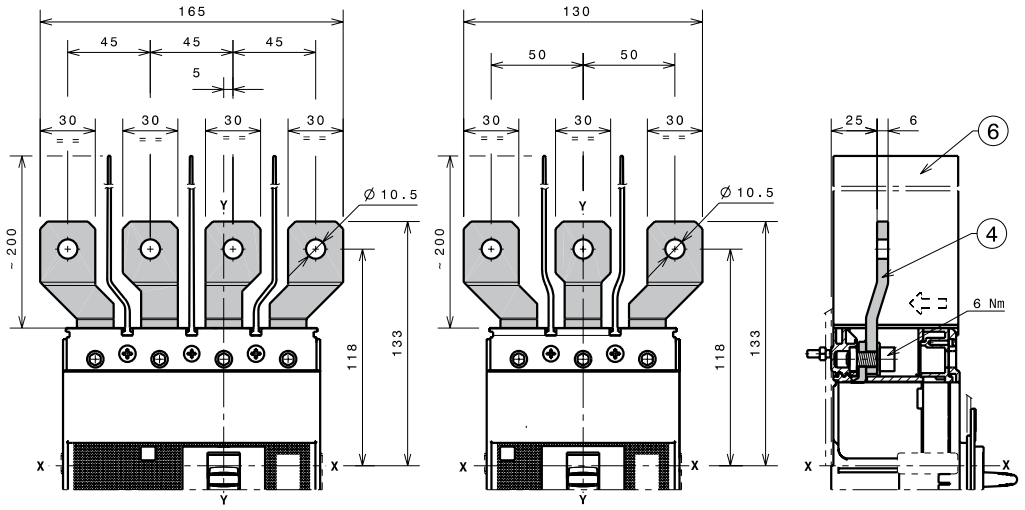
Terminals EF

Key
2 Front extended terminals
3 Terminal covers with degree of protection IP40 (optional) not provided
5 100mm insulating barriers between phases (compulsory) provided



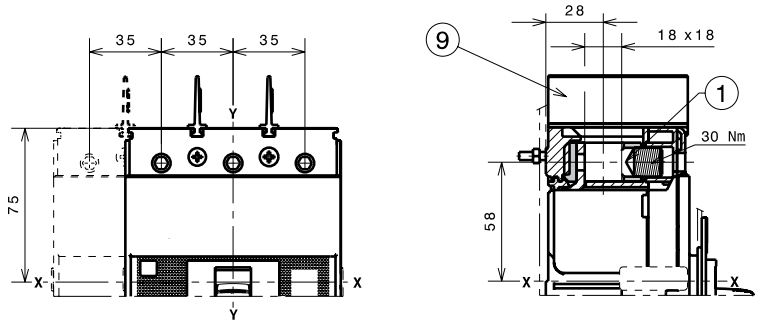
Terminals ES

Key
4 Front extended spread terminals for busbars connection
6 200mm insulating barriers between phases (compulsory) provided

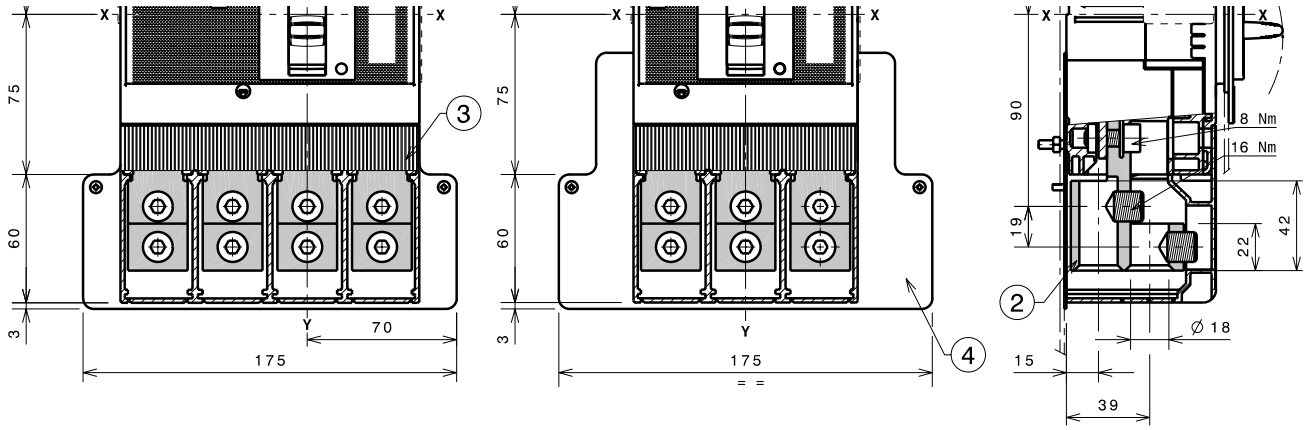


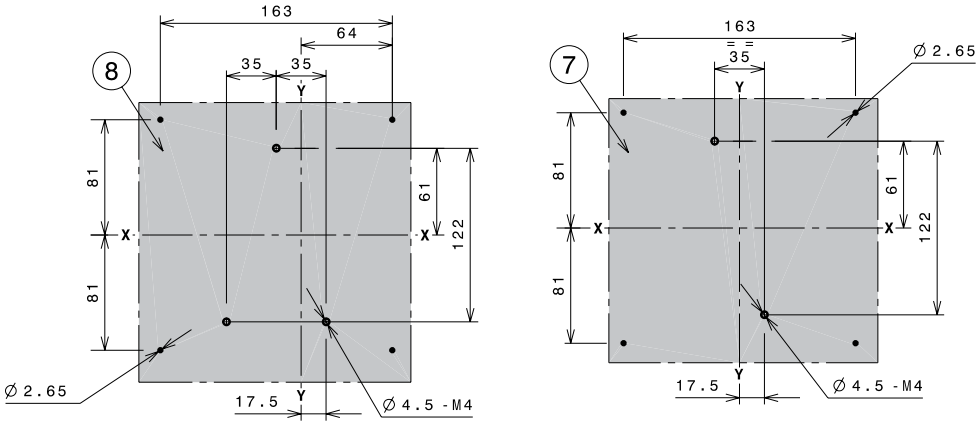
1x90...185mm² terminals FCCuAl

Key
1 1x90...185mm² terminals FCCuAl
9 25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker



2x35...150mm² terminals FCCuAl





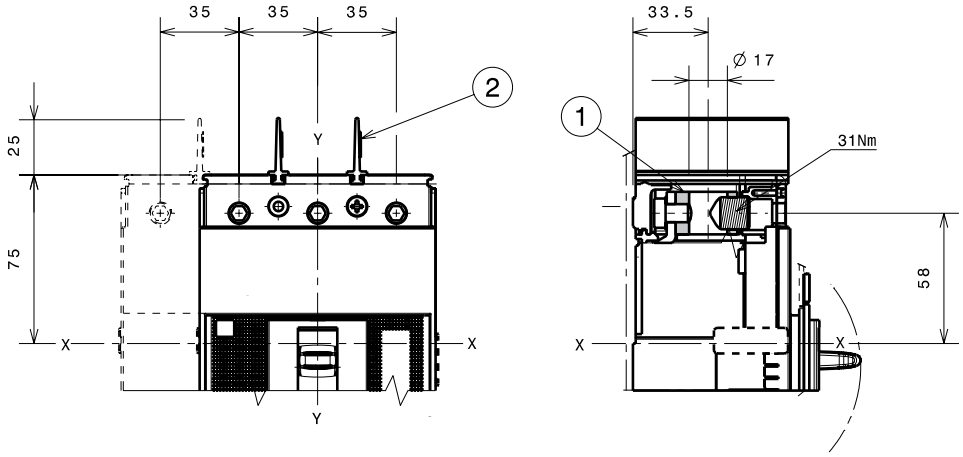
Key
2 2x35...150mm² terminals FCCuAl
3 Terminal covers with degree of protection IP40 (optional) provided
4 Provided rear insulated plate (mandatory for CuAl 2x150mm² cables)
7 Drilling template for circuit-breaker fixing on sheet III with rear insulated plate
8 Drilling template for circuit-breaker fixing on sheet IV with rear insulated plate

Tmax XT3 – Installation

Terminals for fixed circuit-breaker

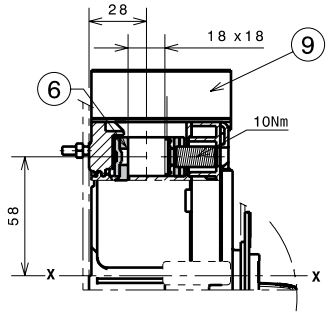
30...150mm² terminals FCCuAl

Key
1 30...150mm² terminals FCCuAl
2 25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker



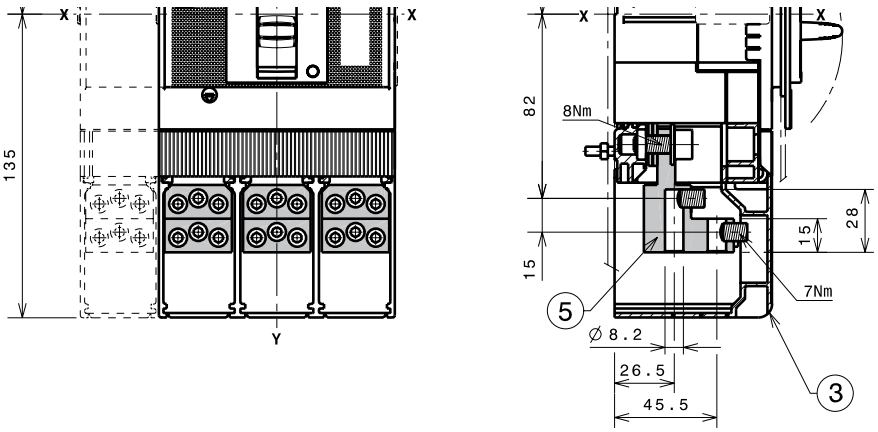
Terminals FCCu

Key
6 Front terminals FCCu
9 25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker

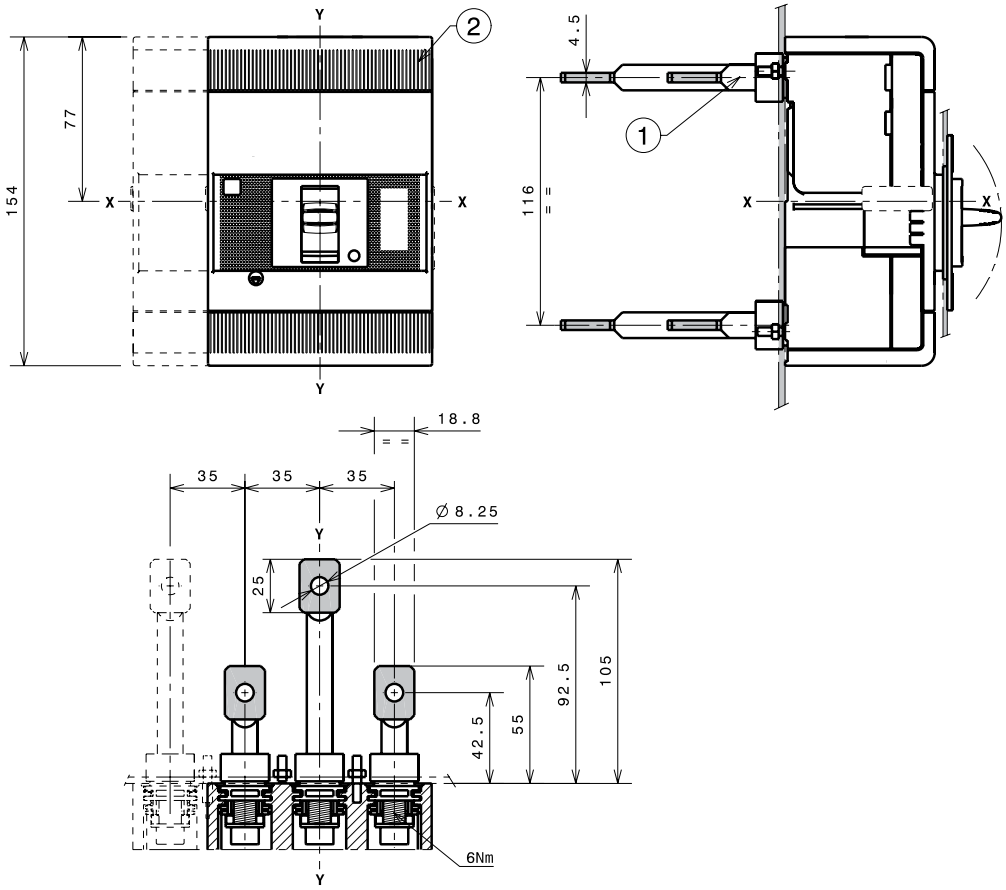


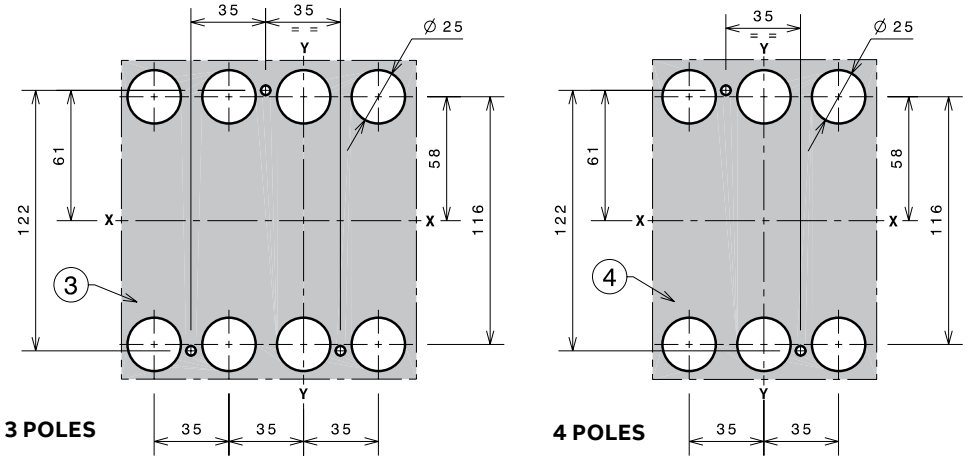
Terminals MC

Key
3 Terminal covers with degree of protection IP40 (optional) provided
5 Front terminal for multicable connection



Terminals R





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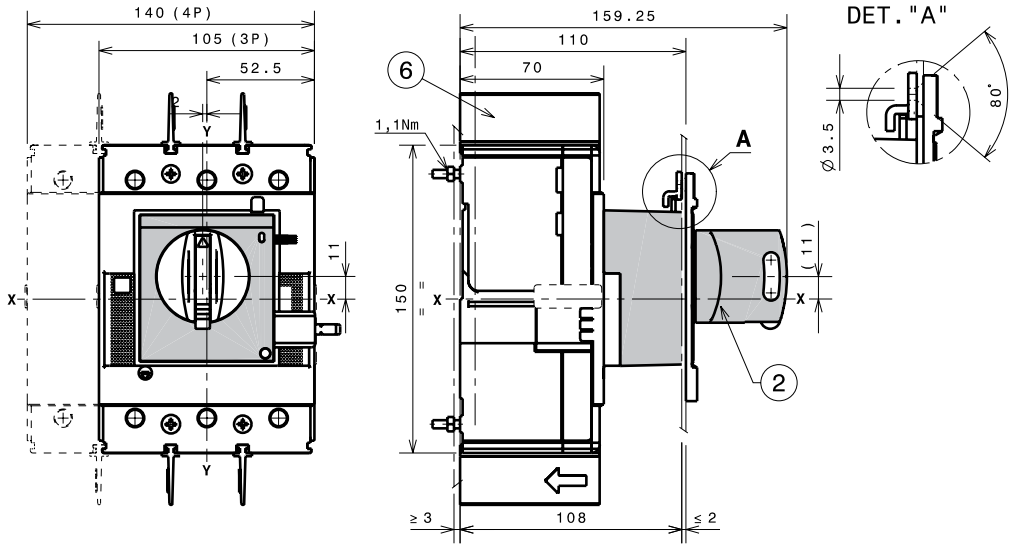
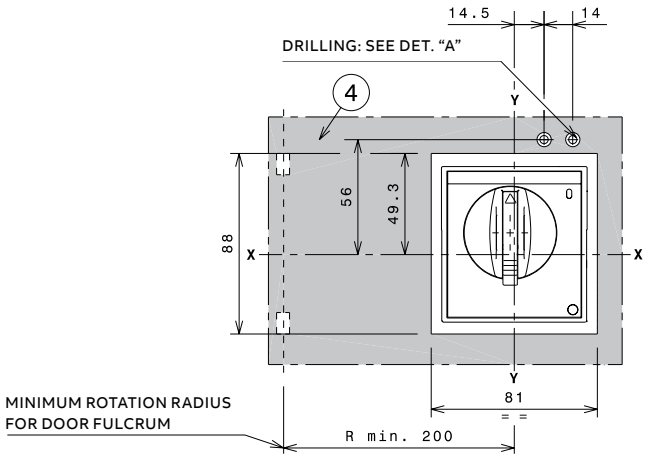
Key

1 Adjustable rear terminals
2 Bottom terminal covers with degree of protection IP30 (optional) provided
3 Drilling tamplate for circuit-breaker IV fixing on sheet
4 Drilling tamplate for circuit-breaker III fixing on sheet

Tmax XT3 – Installation
Accessories for fixed circuit-breaker

Rotary handle operating mechanism on circuit-breaker (RHD)





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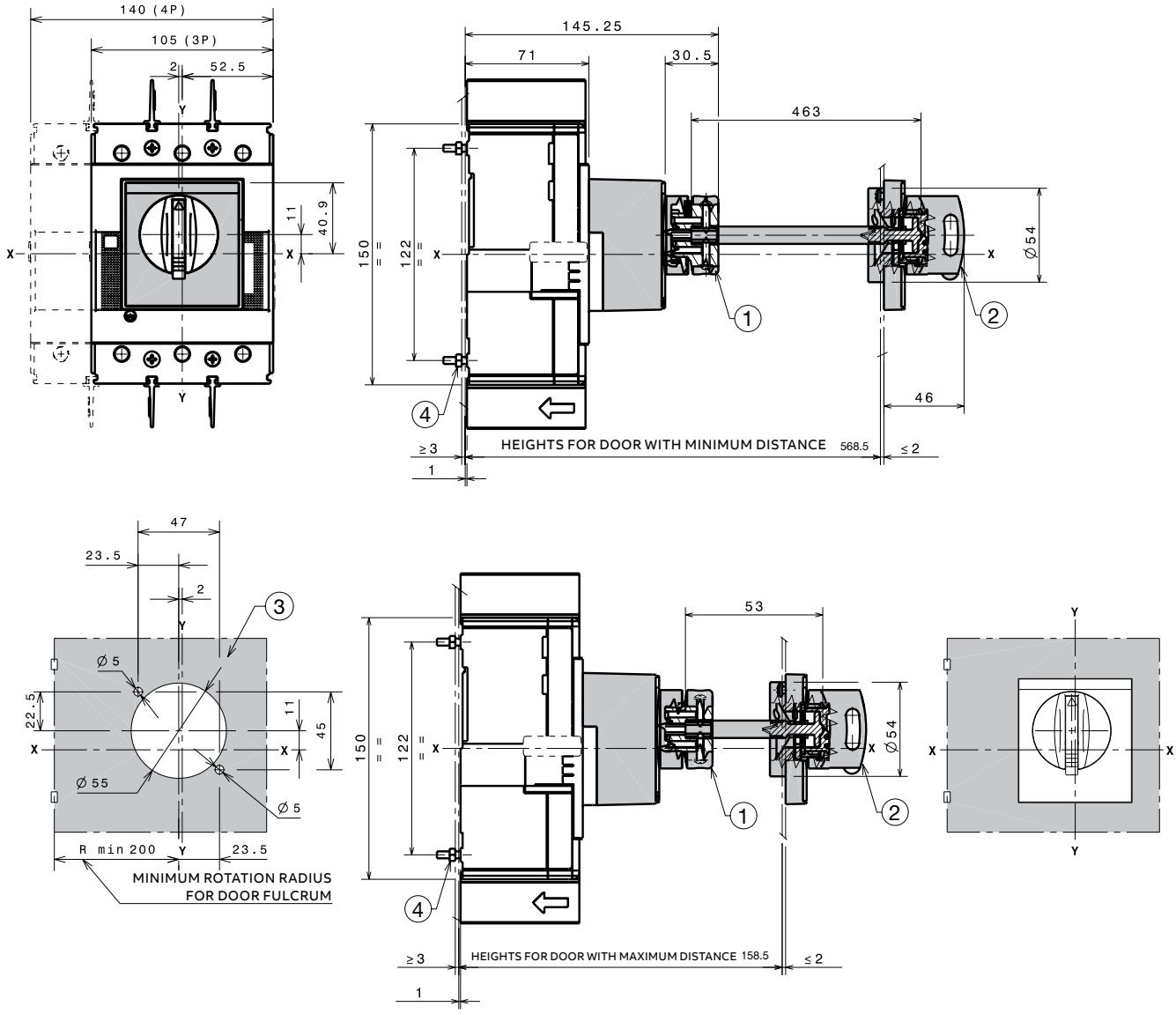
Key

2 Rotary handle operating mechanism on circuit-breaker RHD
4 Drilling template of door with direct rotary handle
6 25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker

Rotary handle operating mechanism on the compartment door (RHE)



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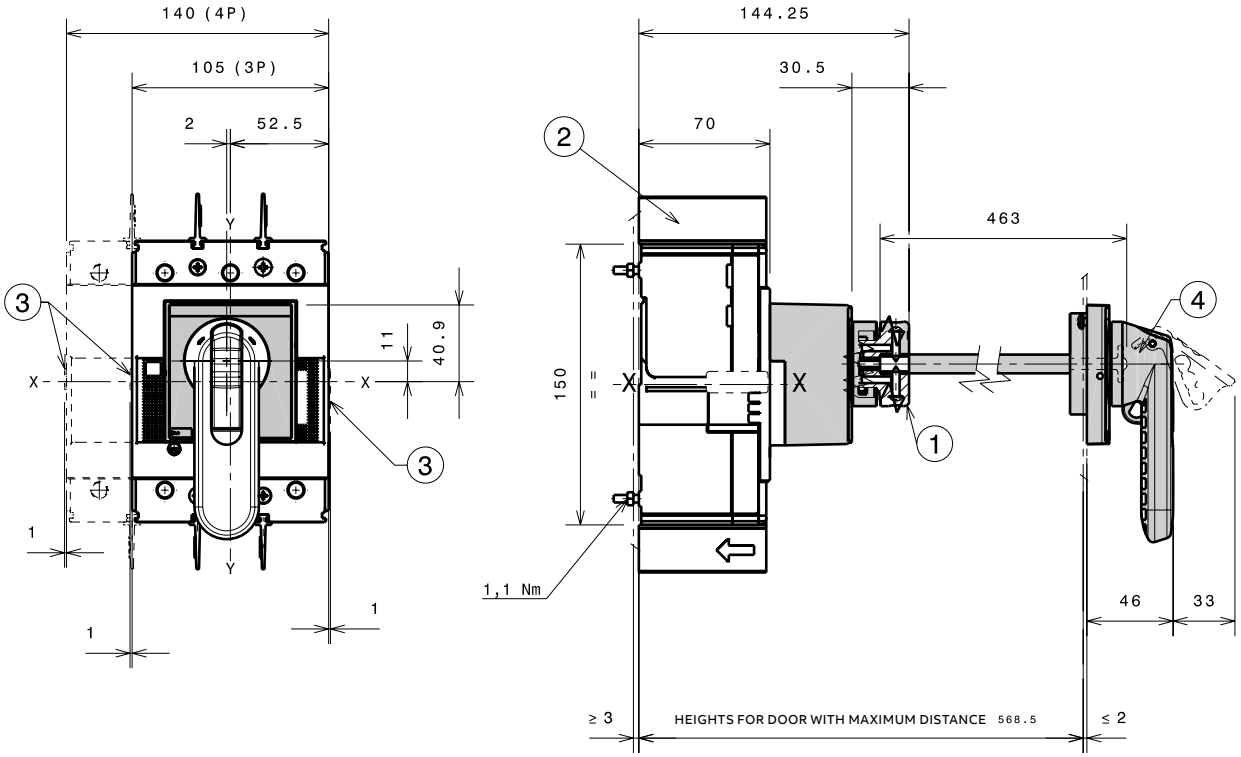
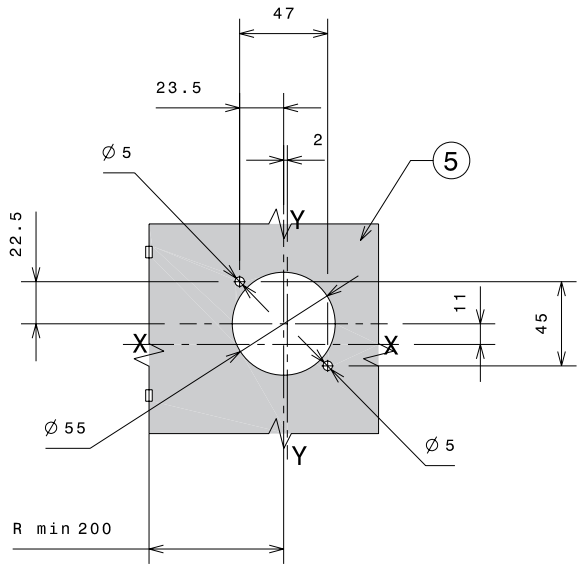
Key

1 Transmission mechanism
2 Rotary handle operating mechanism for compartment door (RHE)
5 Compartment door shett steel drilling
4 Tightening torque 1.1Nm

Tmax XT3 – Installation
Accessories for fixed circuit-breaker

Large rotary handle operating mechanism on the compartment door (RHE-LH)





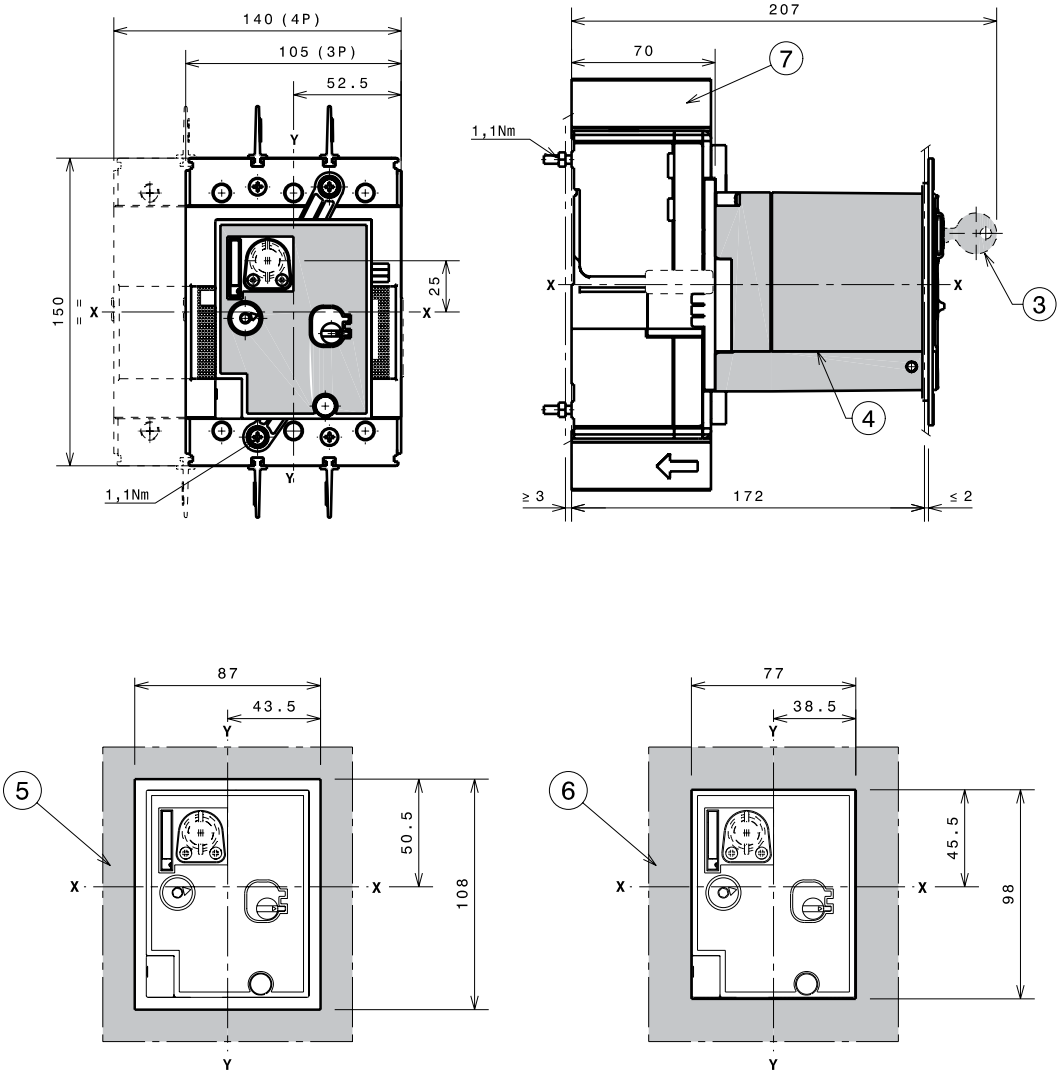
MINIMUM DISTANCE FROM DOOR HINGE R min 200

—

Key

1 Transmission unit
2 25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker
3 Optional wiring ducts
4 Large transmitted rotary handle
5 Drilling template of door with large transmitted rotary handle

Direct motor operator (MOD)



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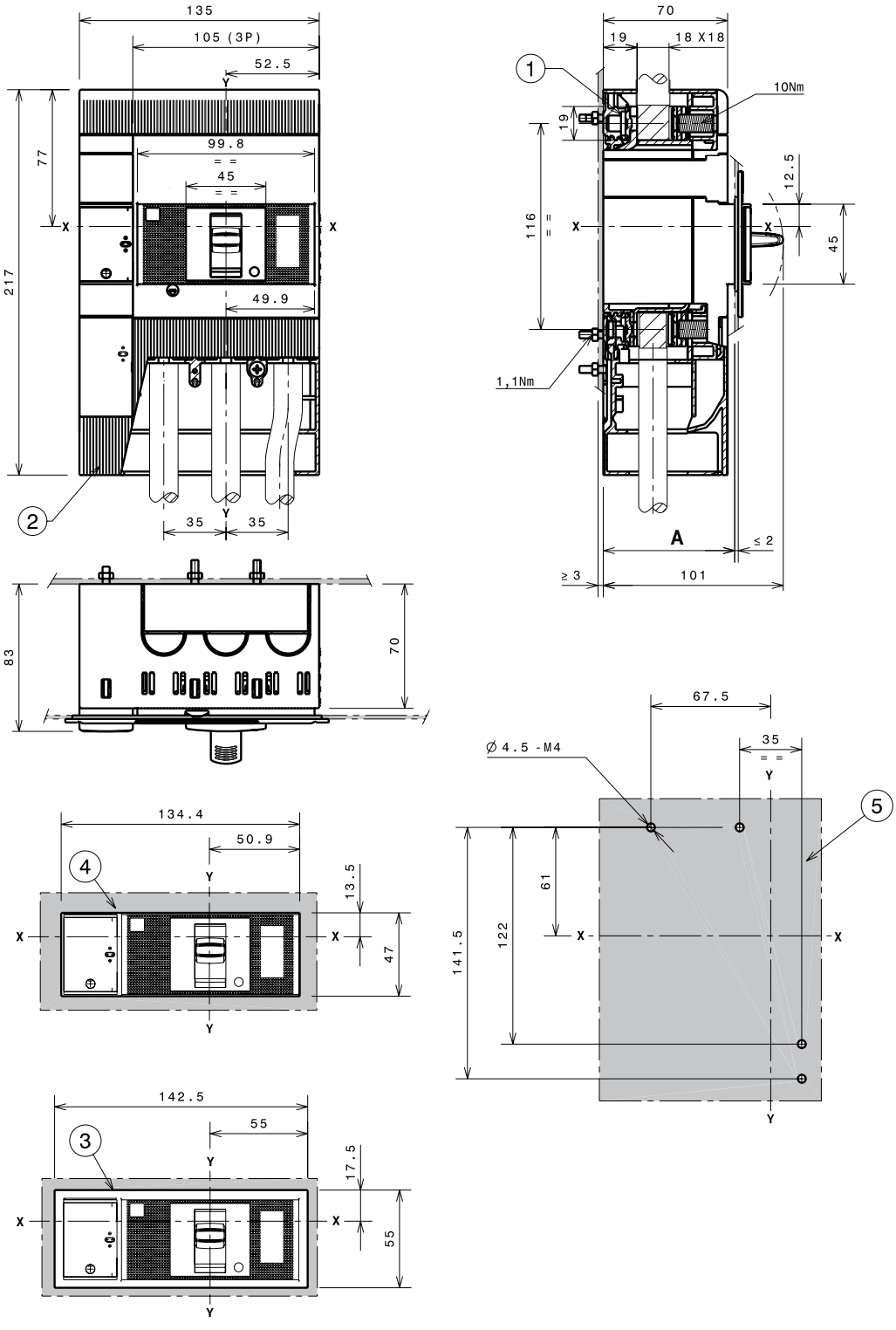
Key

3 Key lock (on request)
4 Direct motor operator MOD
5 Drilling template of door with MOD with flange
6 Drilling template of door with MOD without flange
7 25mm insulating barriers

Tmax XT3 – Installation

Accessories for fixed circuit-breaker

RC Inst and RC Sel residual current release for 3 poles circuit-breaker

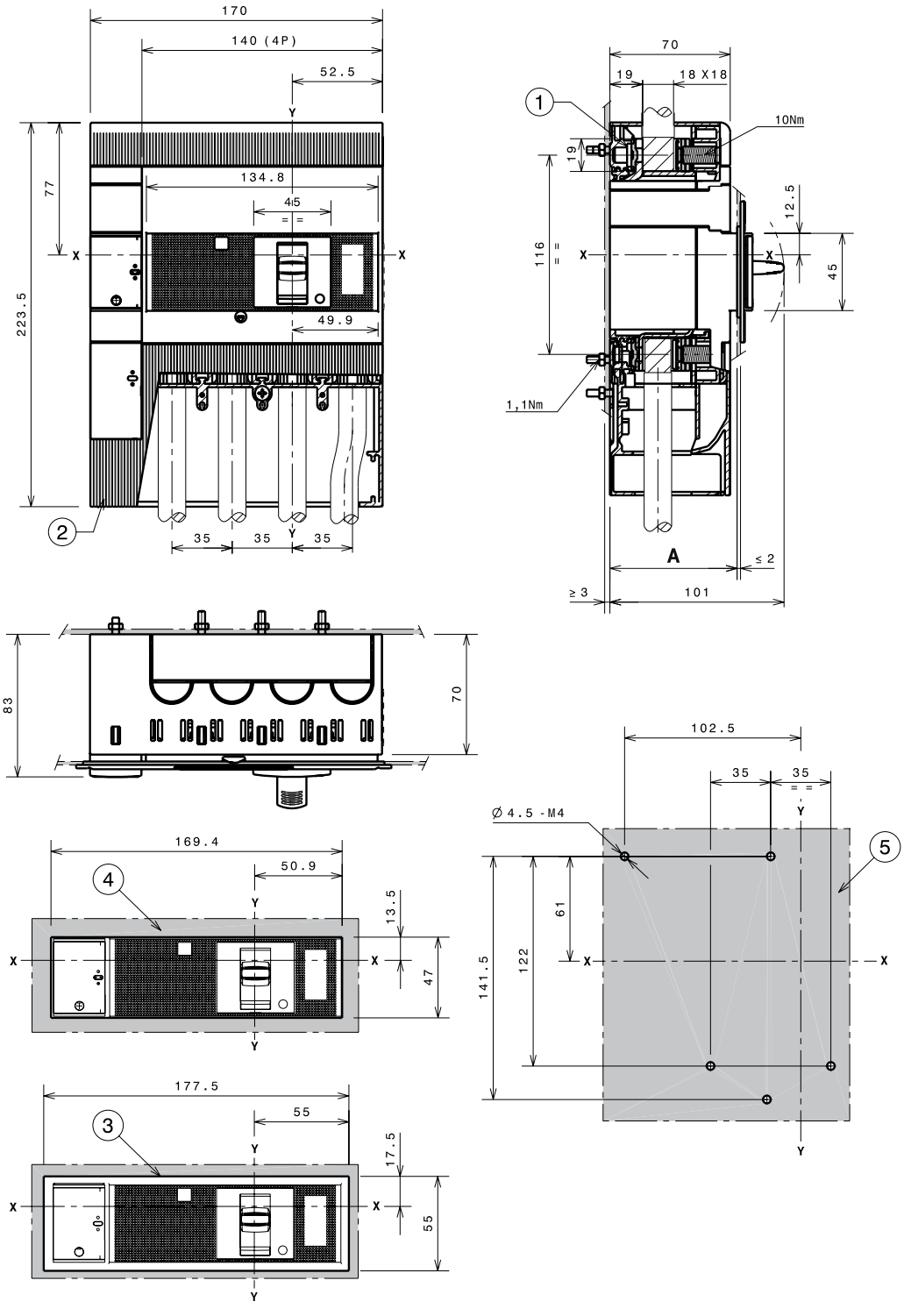


Key

1 Front terminals for cables connection
2 Terminal covers with degree of protection IP40
3 Drilling template of door with direct rotary handle with flange
4 Drilling template of door with direct rotary handle without flange
5 Drilling template for circuit-breaker fixing on sheet

		A
With standard flange	III	74
Without flange	III	71

RC Inst and RC Sel residual current release for 4 poles circuit-breaker



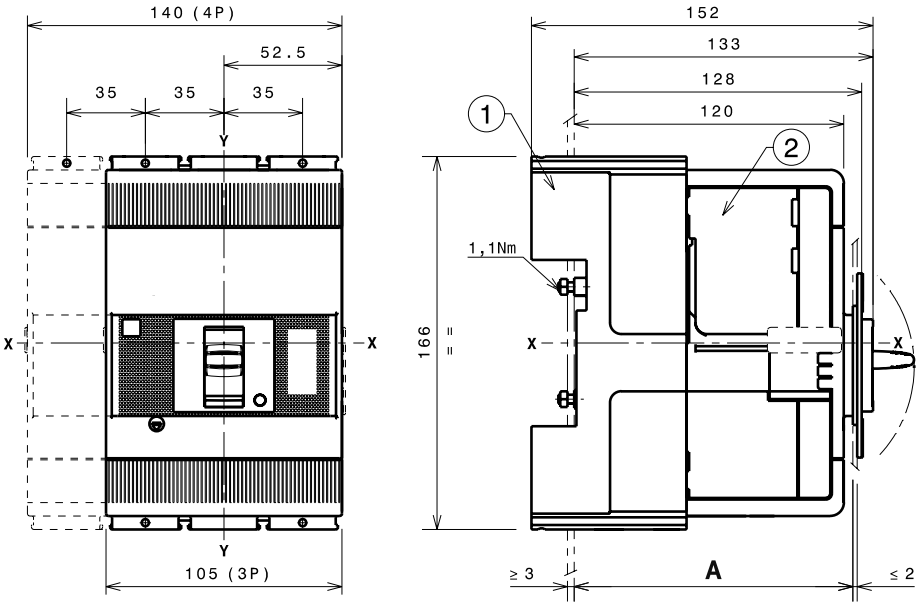
Key
1 Front terminals for cables connection
2 Terminal covers with degree of protection IP40
3 Drilling template of door with direct rotary handle with flange
4 Drilling template of door with direct rotary handle without flange
5 Drilling template for circuit-breaker fixing on sheet

		A
With standard flange	IV	74
Without flange	IV	71

Tmax XT3 – Installation

Installation for plug-in circuit-breaker

Fixing on support sheet

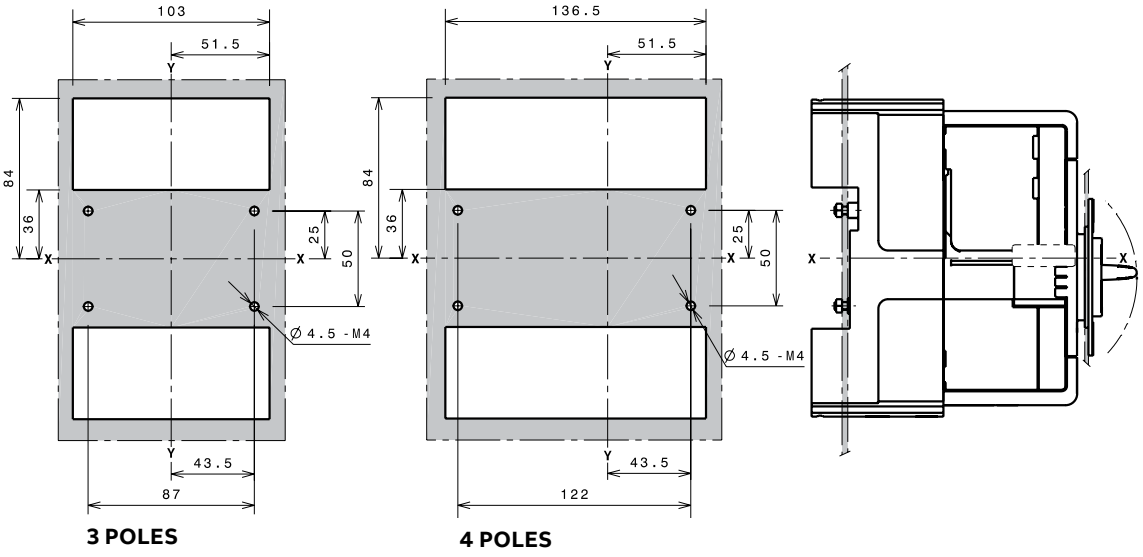


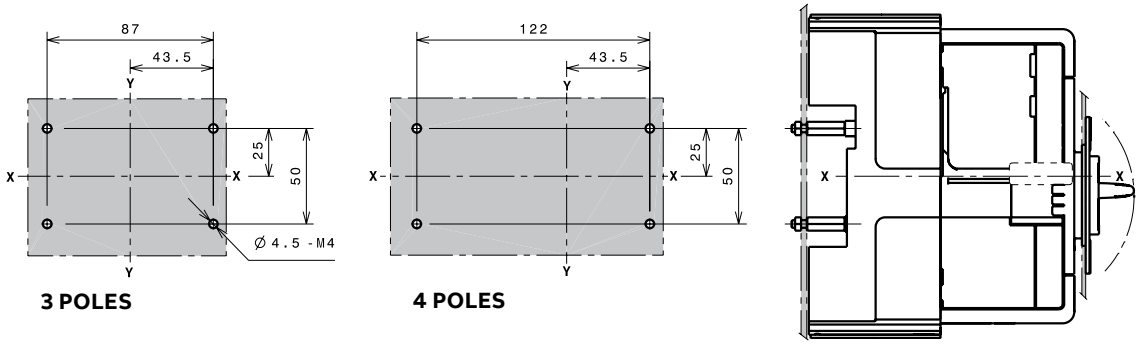
Fixing at 50mm		A
With standard flange	III-IV	124
Without flange	III-IV	121
	III-IV	129

Fixing at 70mm for extended front terminals		A
With standard flange	III-IV	144
Without flange	III-IV	141
	III-IV	149

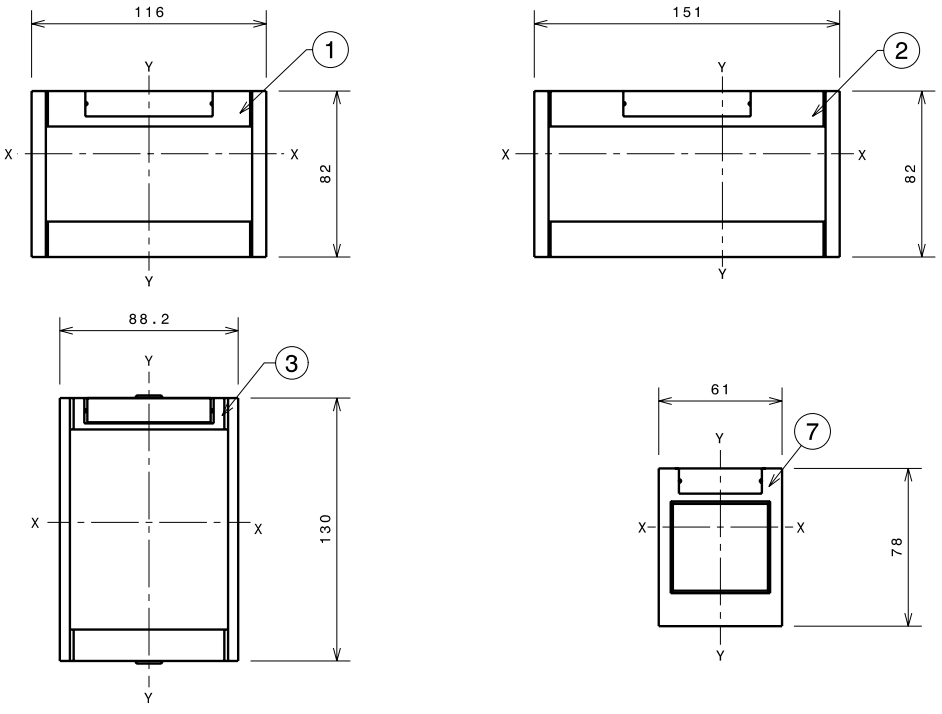
—
Key
1 Fixed part
2 Moving part

Drilling templates for support sheet





Flanges



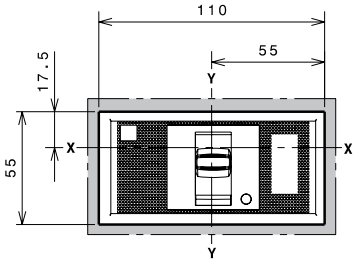
—
Key
1 Flange for plug-in circuit-breaker III
2 Flange for plug-in circuit-breaker IV
3 Flange for plug-in circuit-breaker with direct motor operator MOD
7 Optional flange

Tmax XT3 – Installation

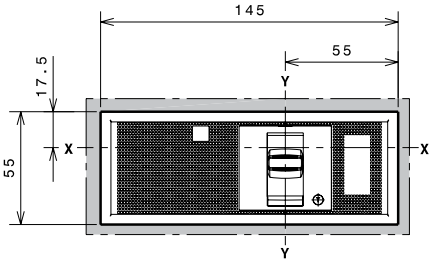
Installation for plug-in circuit-breaker

Drilling templates compartment door

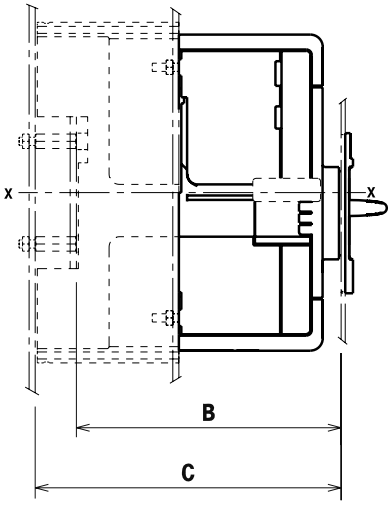
With standard flange



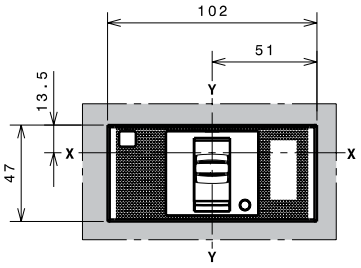
B=124 C=144
3 POLES



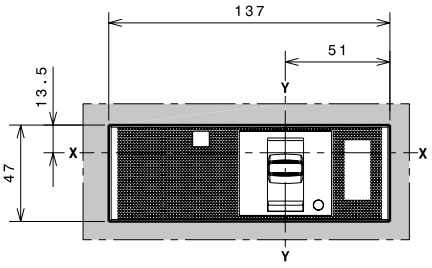
B=124 C=144
4 POLES



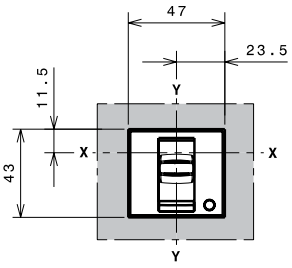
Without flange



B=121 C=141
3 POLES

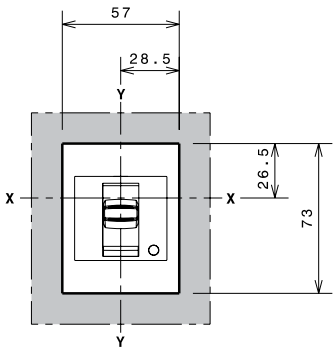


B=121 C=141
4 POLES

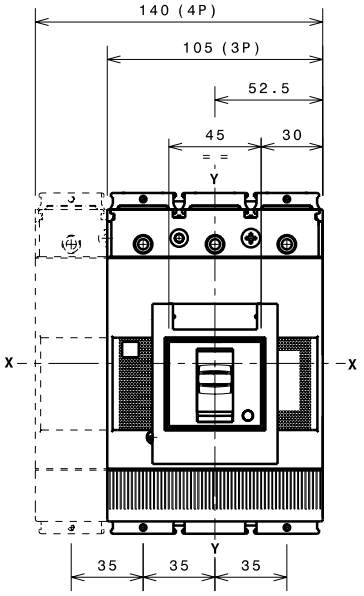


B=129 C=149
3-4 POLES

With optional flange



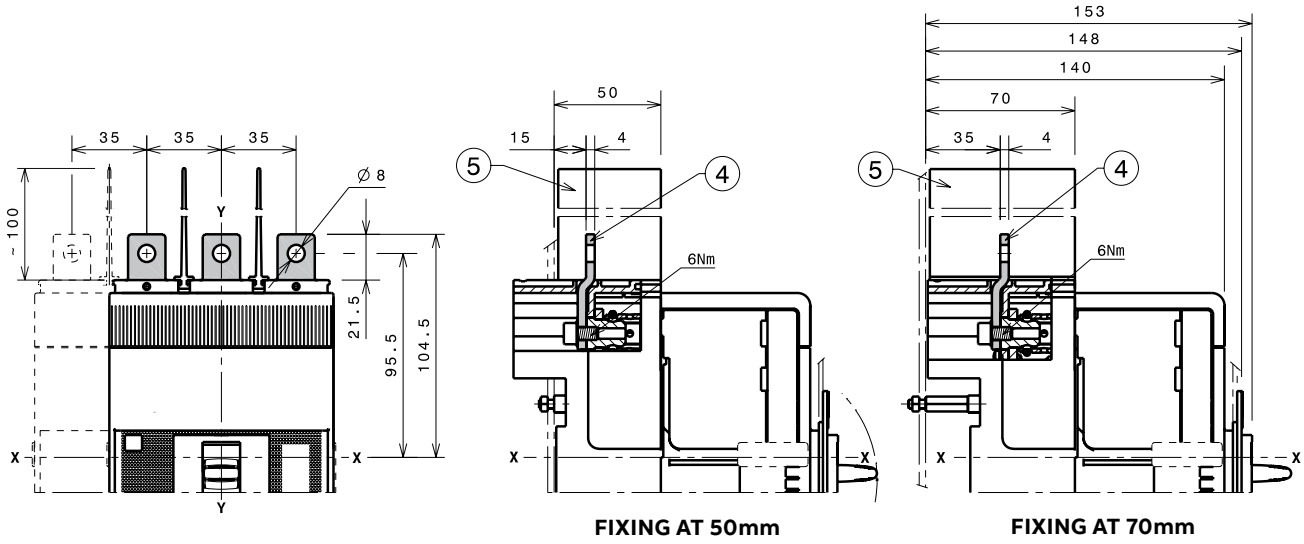
B=129 C=149
3-4 POLES



Tmax XT3 – Installation

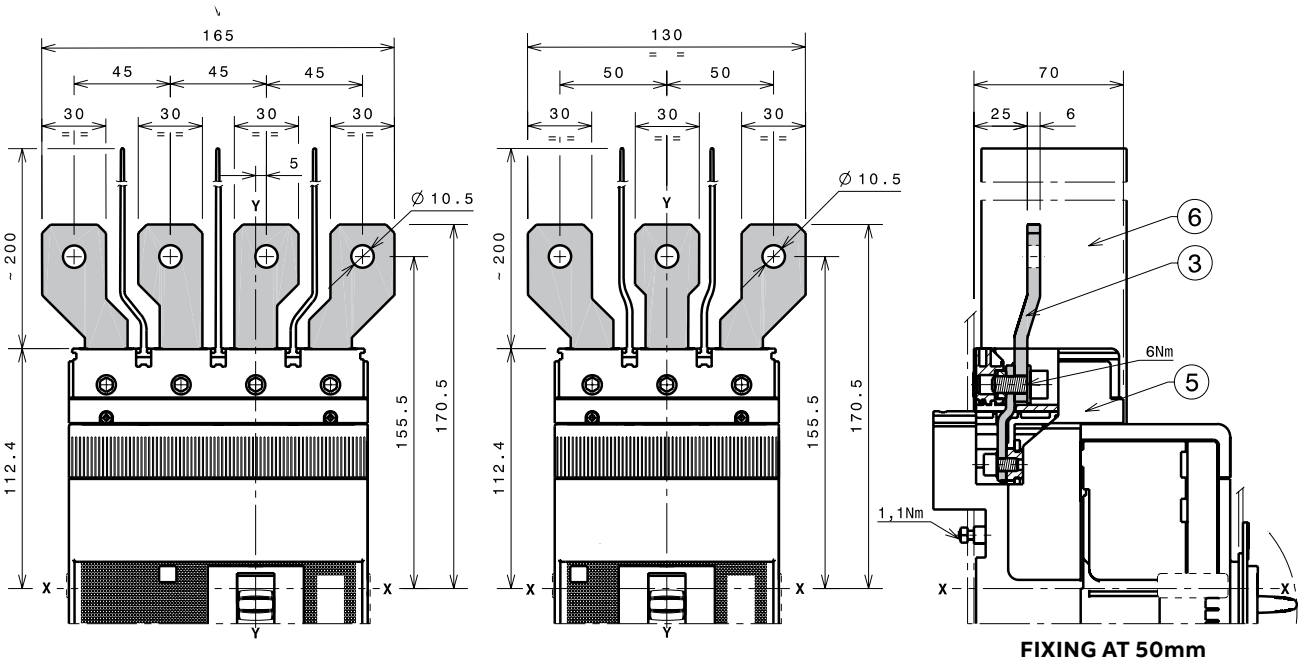
Terminals for plug-in circuit-breaker

Terminals EF



Key
4 Front extended terminals
5 100mm insulating barriers between phases (compulsory) provided

Terminals ES



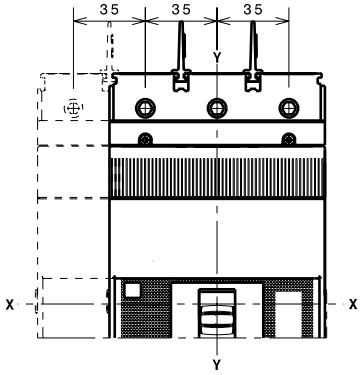
Key
3 Front extended spread terminals for busbars connection
5 Adapter for fixed part (compulsory) not provided
6 200mm insulating barriers between phases (compulsory) provided

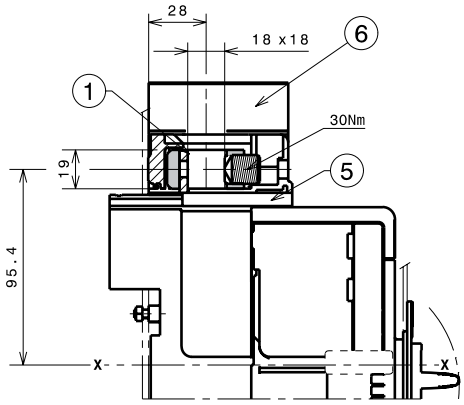
Tmax XT3 – Installation

Terminals for plug-in circuit-breaker

1x90...185mm² terminals FCCuAl

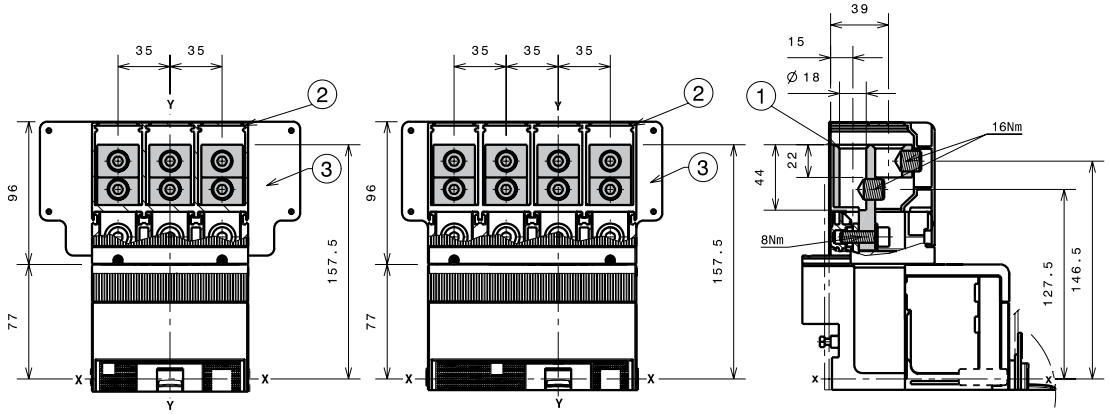
Key
1 1x90...185mm² front terminal FCCuAl
5 Adapter for fixed part (compulsory) not provided
6 25mm insulating barriers between phases (compulsory) provided



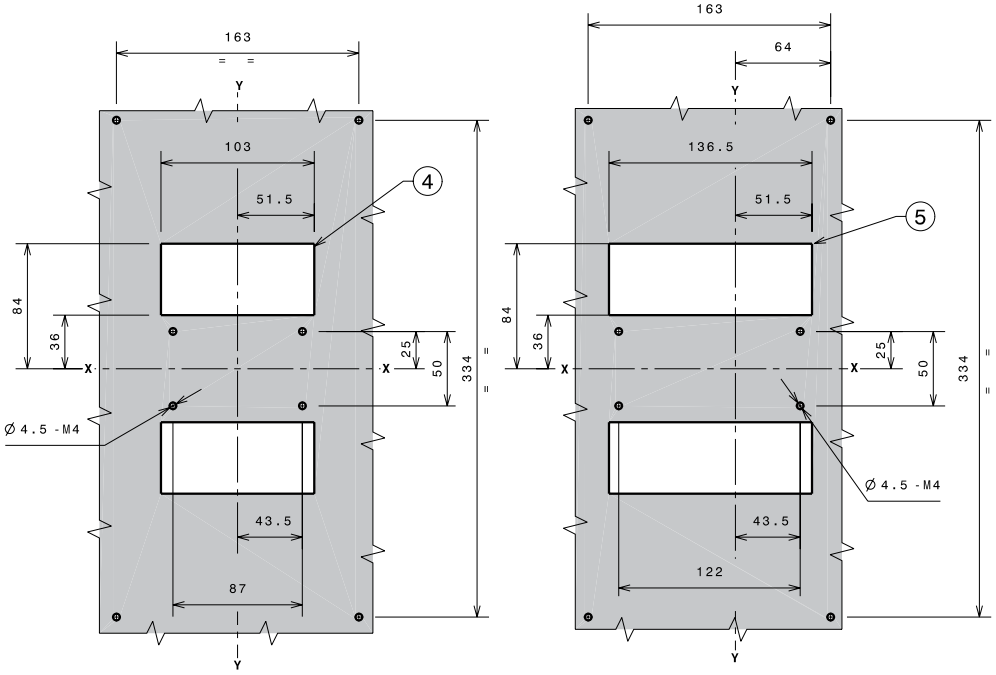


FIXING AT 70mm

2x35...150mm² terminals FCCuAl

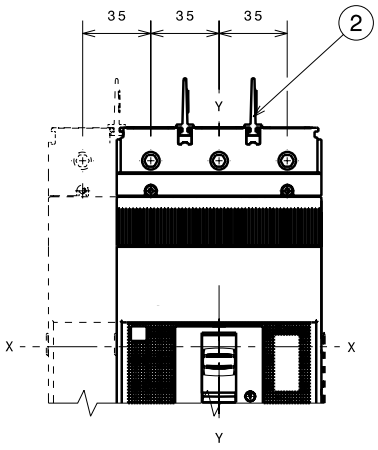


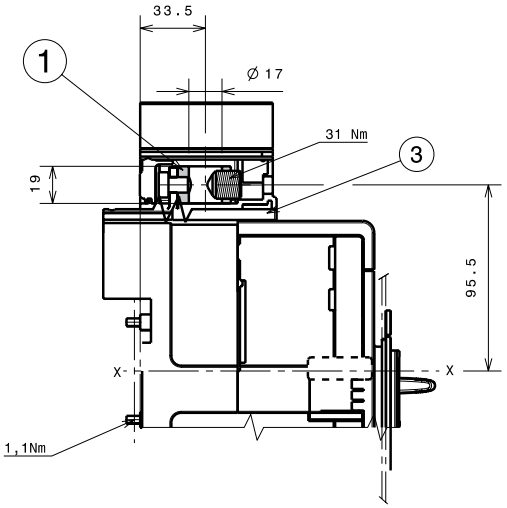
Key
1 1x35...95 mm² external terminal FCCuAl
2 High terminal covers with degree of protection IP40
3 Rear insulated plate (compulsory with 2x150mm²)
4 Drilling template for fixing circuit-breaker III with rear insulated plate
5 Drilling template for fixing circuit-breaker IV with rear insulated plate



30...150mm² terminals FCCuAl

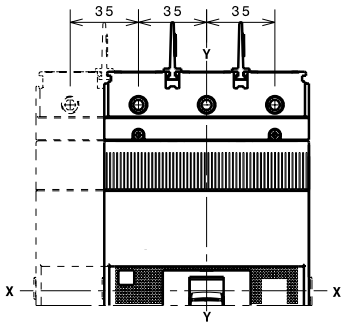
Key
1 30...150mm² terminals FCCuAl
2 25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker
3 Adapter for fixed part (compulsory) not provided

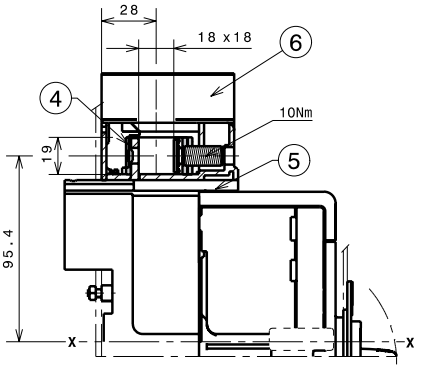




Terminals FCCu

Key
4 Front terminals FCCu
5 Adapter for fixed part (compulsory) not provided
6 25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker

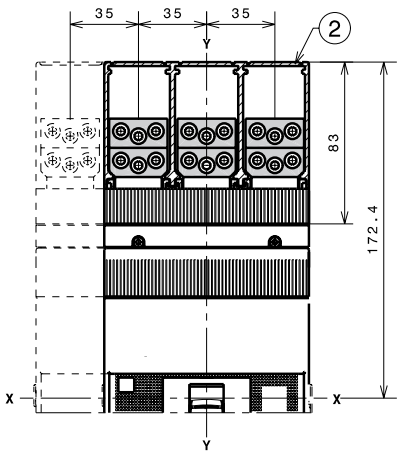


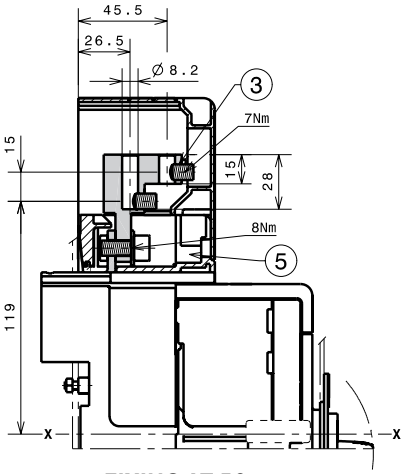


FIXING AT 50mm

Terminals MC

Key
2 High terminal covers with degree of protection IP40 (compulsory with multicable)
3 Front terminal for multicable connection
5 Adapter for fixed part (compulsory) not provided



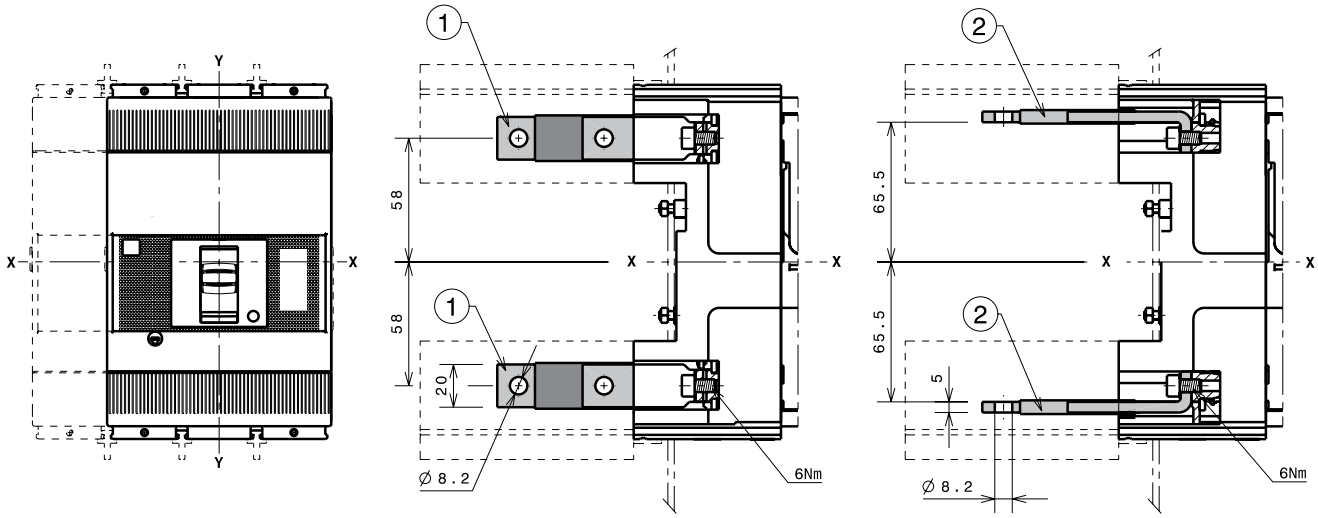


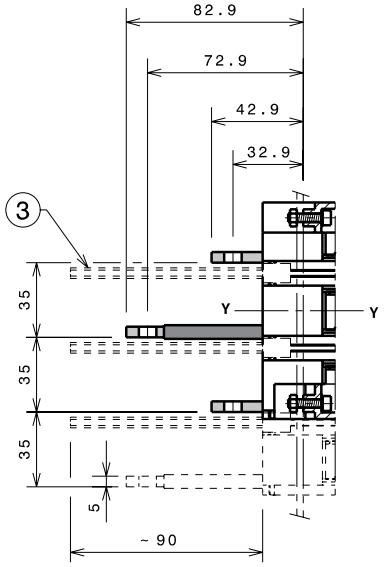
FIXING AT 50mm

Tmax XT3 – Installation

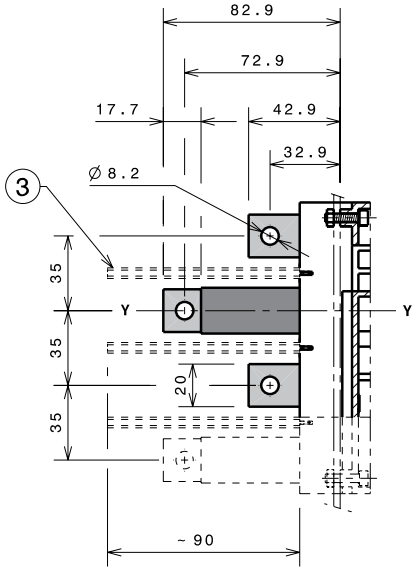
Terminals for plug-in circuit-breaker

Terminals HR/VR





FIXING AT 50mm



FIXING AT 50mm

—

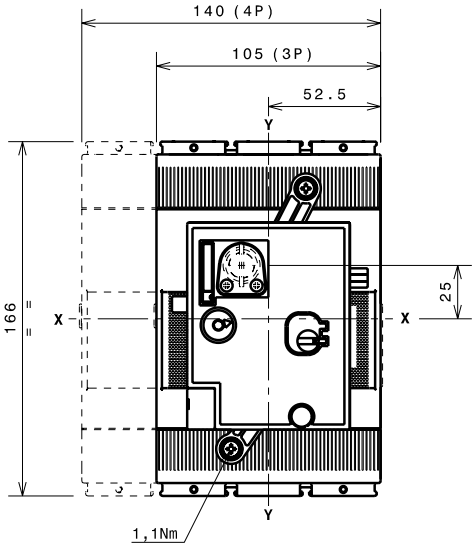
Key

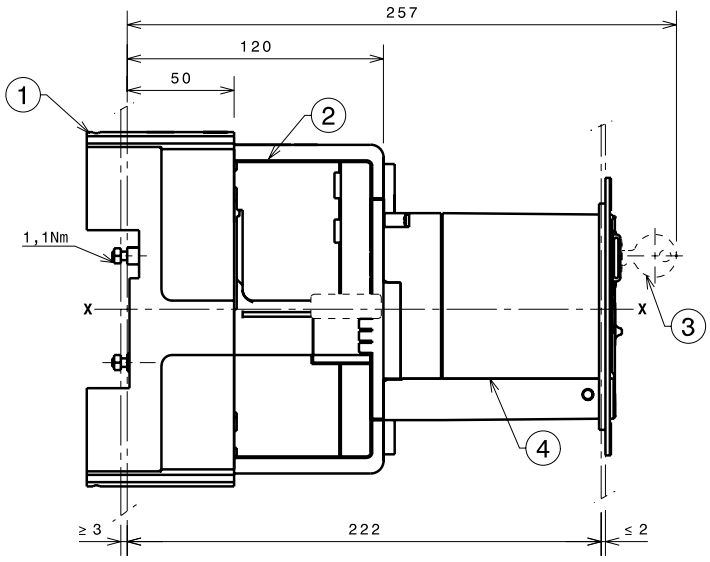
1 Rear vertical terminals
2 Rear horizontal terminals
3 90mm insulating barriers between phases (compulsory) not provided

Tmax XT3 – Installation

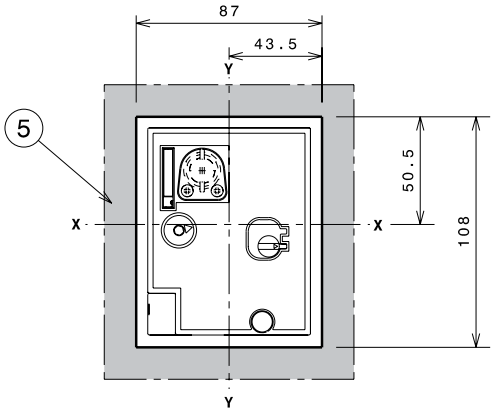
Accessories for plug-in circuit-breaker

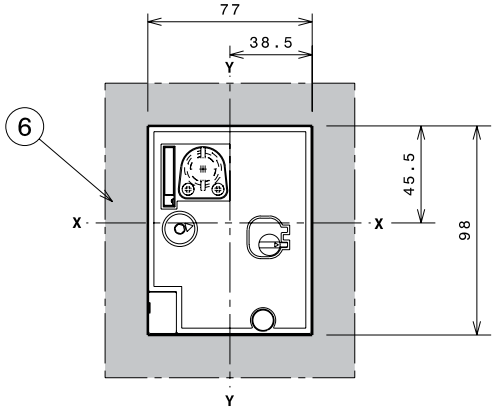
Direct motor operator (MOD)





FIXING AT 50mm





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Key

1 Fixed part
2 Moving part
3 Key lock (on request)
4 Direct motor opetrator MOD
5 Drilling template of door with MOD with flange
6 Drilling template of door with MOD without flange

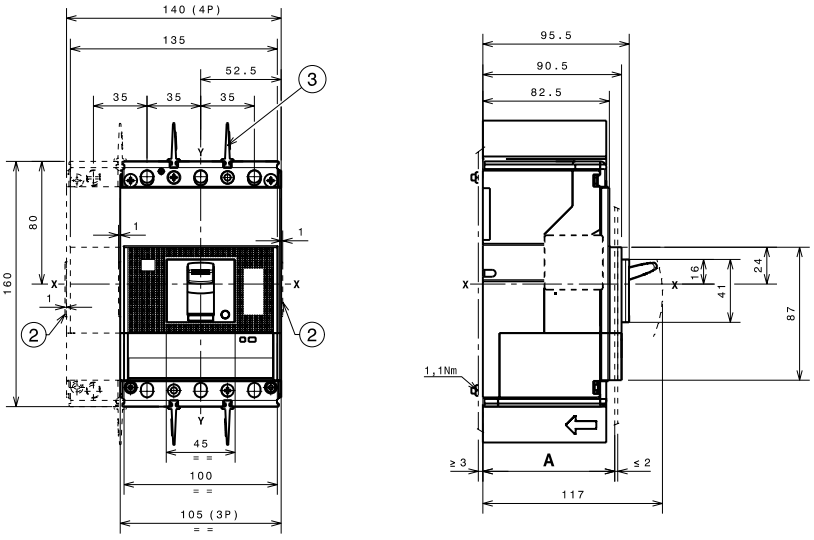
Tmax XT4 – Installation

Installation for fixed circuit-breaker

Fixing on sheet

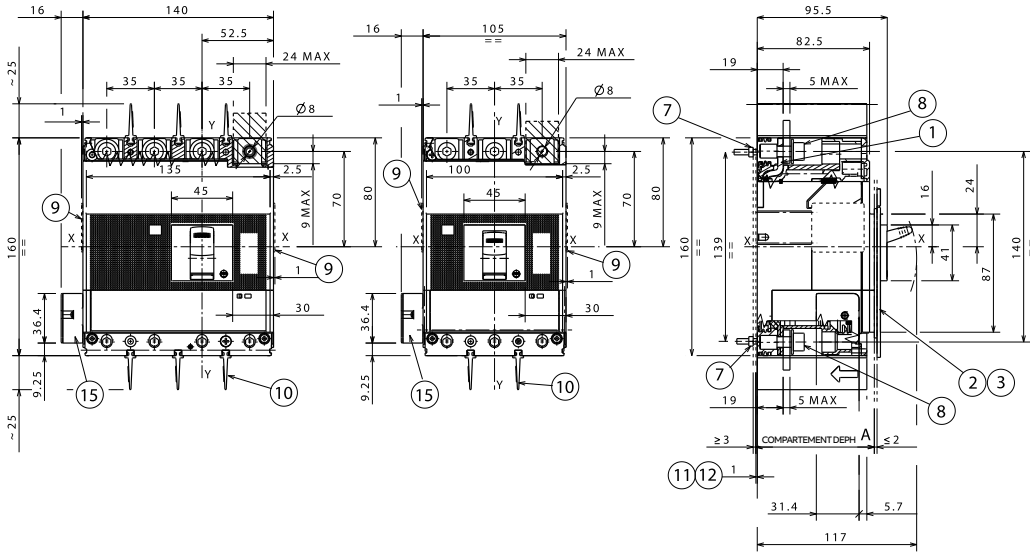
Key
2 Overall dimension of optional wiring ducts
3 25mm insulating barriers between phases (compulsory) provided

		A
With standard flange	III-IV	86
Without flange	III-IV	83.5
	III-IV	91.5



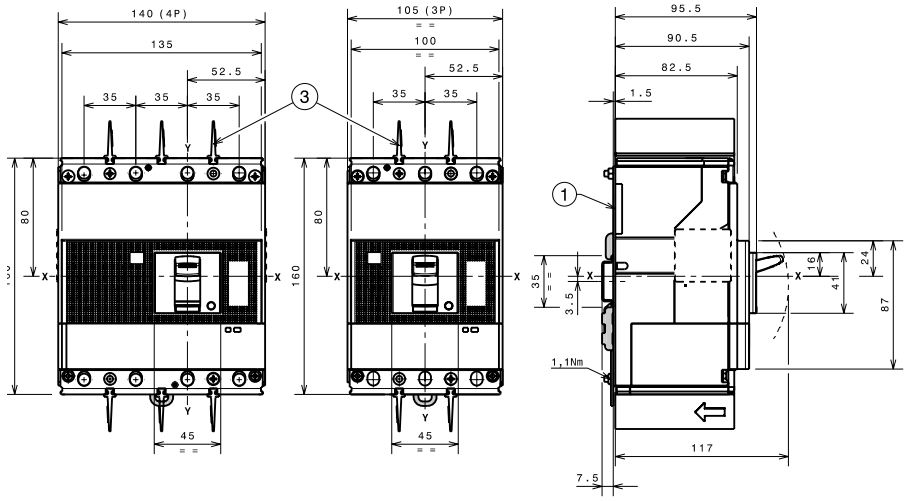
With side connector for Ekip Touch trip units

Key
1 Front terminals
2 Flange for IV circuit-breaker (always supplied with IV cb)
3 Flange for III circuit-breaker (always supplied with III cb)
7 Tightening torque 1,1 Nm - 10 In.Lbs
8 Tightening torque 8 Nm - 70.3 In.Lbs
9 Optional wiring duct
10 Interphase insulating barriers 25mm - 0.98"(compulsory)
11 Rear plate insulating III (only ul version)
12 Rear plate insulating IV (only ul version)
15 Connection kit F/P IntBus/ExtNeut/Se

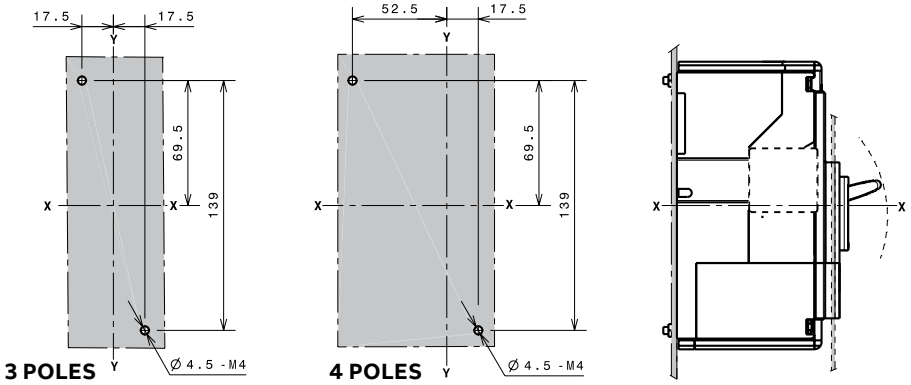


Fixing on DIN 50022 rail

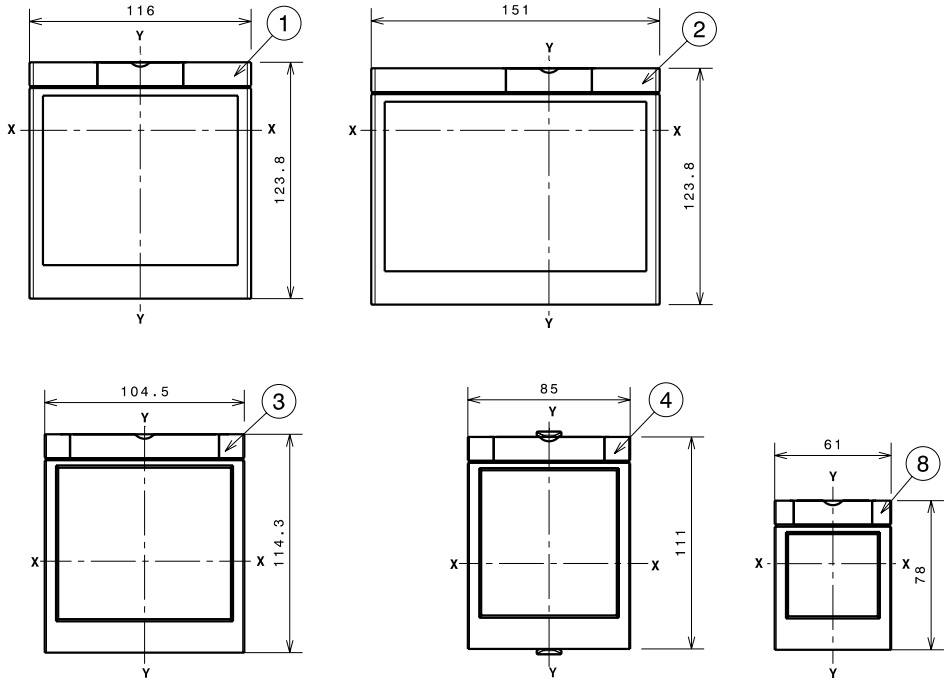
Key
1 Bracket for fixing
3 25mm insulating barriers between phases (compulsory) provided

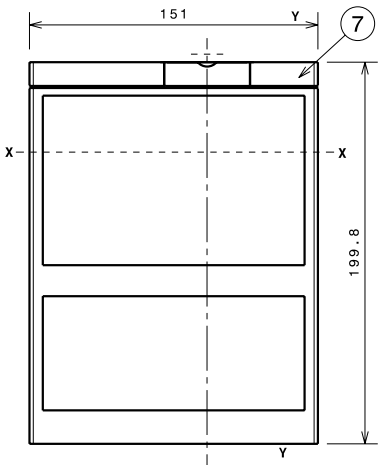


Drilling templates for support sheet



Flanges





—

Key

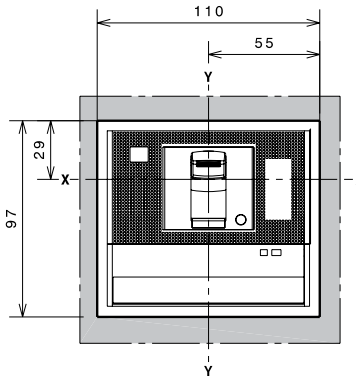
1 Flange for fixed circuit-breaker III
2 Flange for fixed circuit-breaker IV
3 Flange for fixed circuit-breaker III-IV with MOE and FLD
4 Flange for circuit-breaker III-IV with direct rotary handle RHD
7 Flange for fixed circuit-breaker IV with front extended terminals and residual current
8 Optional flange

Tmax XT4 – Installation

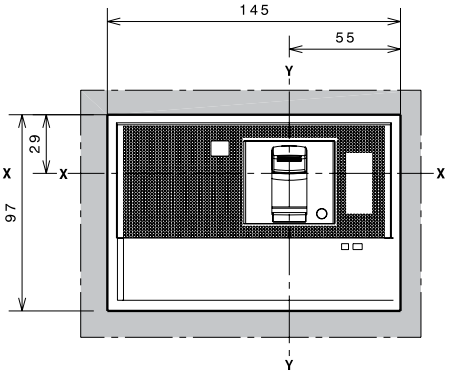
Installation for fixed circuit-breaker

Drilling templates compartment door

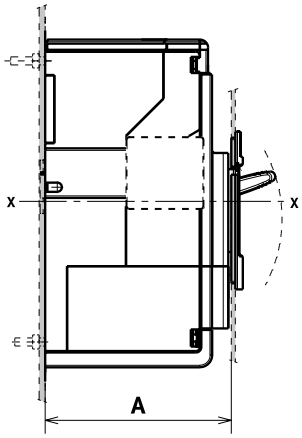
With standard flange



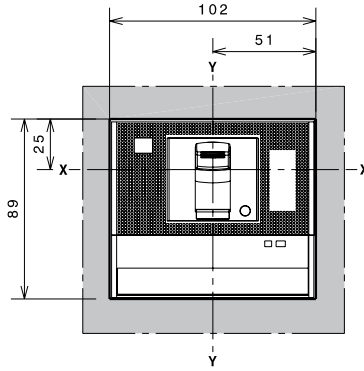
A=86
3 POLES



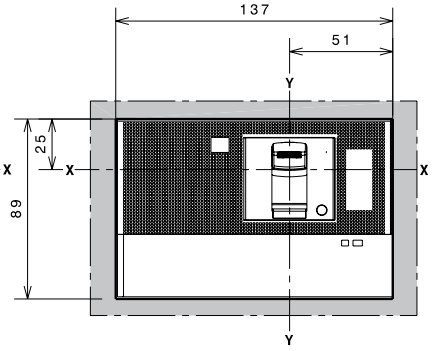
A=86
4 POLES



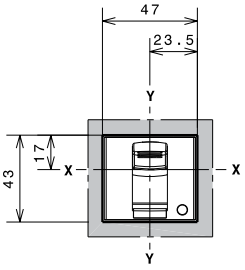
Without flange



A=83.5
3 POLES

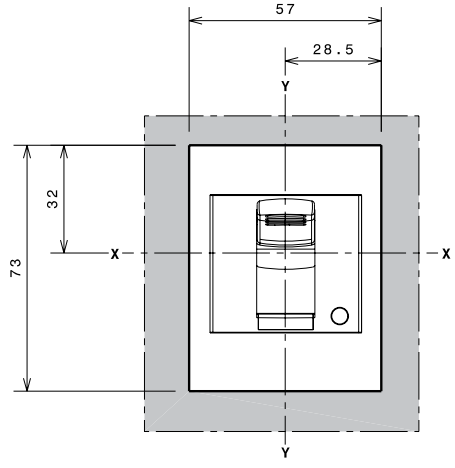


A=83.5
4 POLES

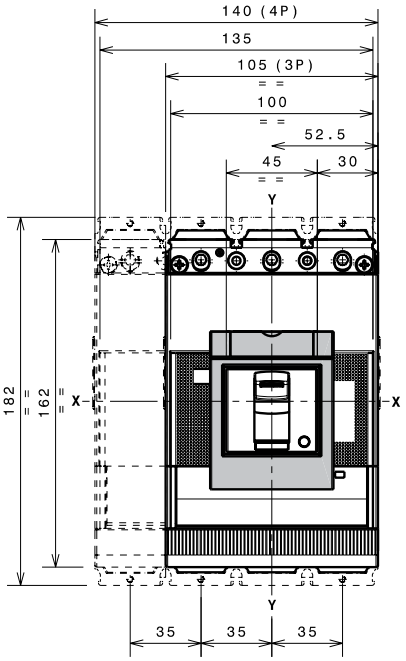


A=91.5
3-4 POLES

With optional flange



A=92
3-4 POLES

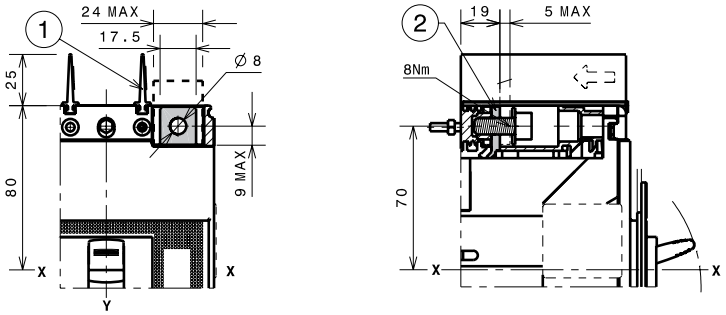


Tmax XT4 – Installation

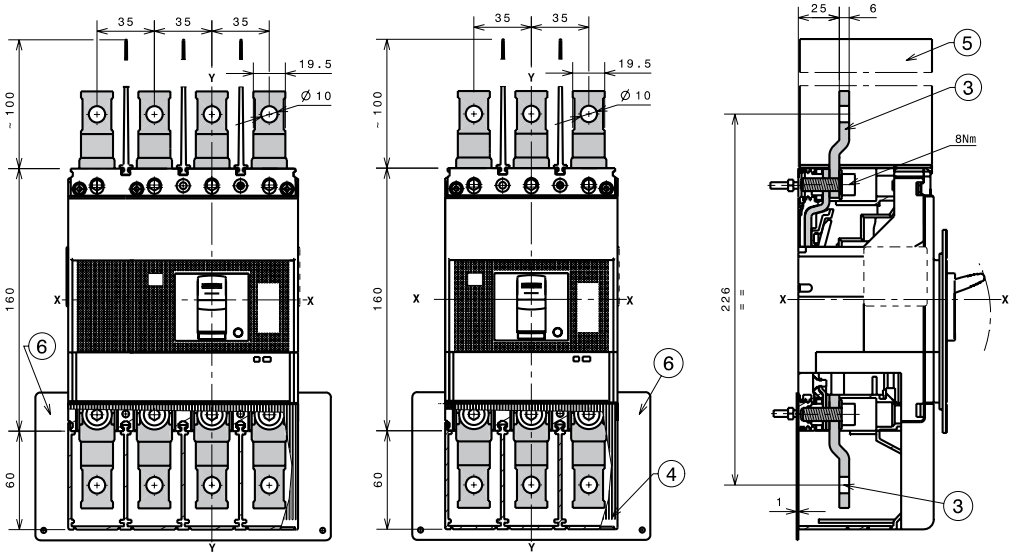
Terminals for fixed circuit-breaker

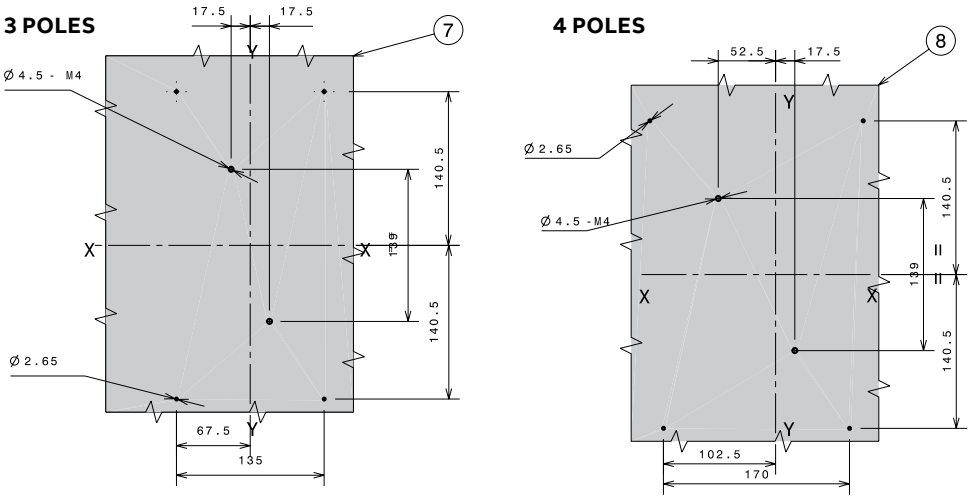
Terminals F

Key
1 25mm insulating barriers between phases (compulsory) provided
2 Top terminal covers with degree of protection IP30 (optional) not provided



Terminals EF





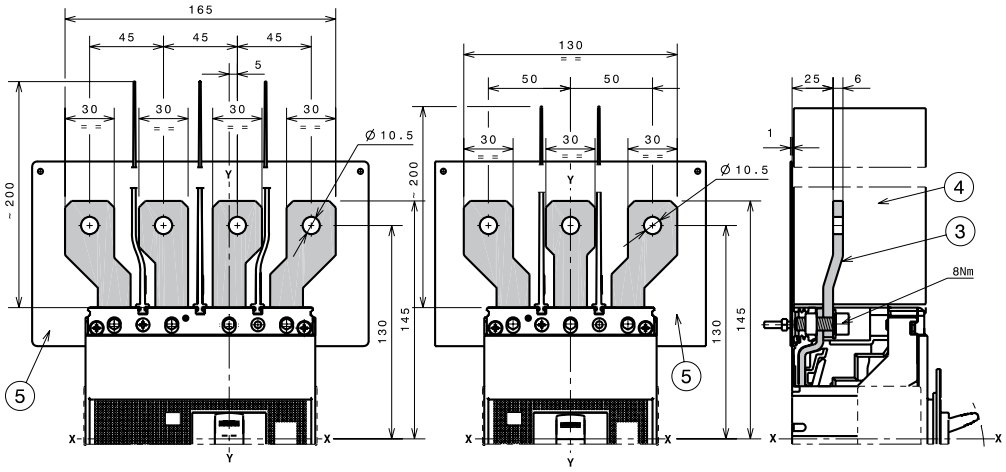
Key
3 Front extended terminals
4 Terminal covers with degree of protection IP40 (optional) not provided
5 100mm insulating barriers between phases (compulsory) provided
6 Insulated plate provided compulsory for Ue>440V
7 Drilling template for 3p circuit-breaker
8 Drilling template for 4p circuit-breaker

Tmax XT4 – Installation

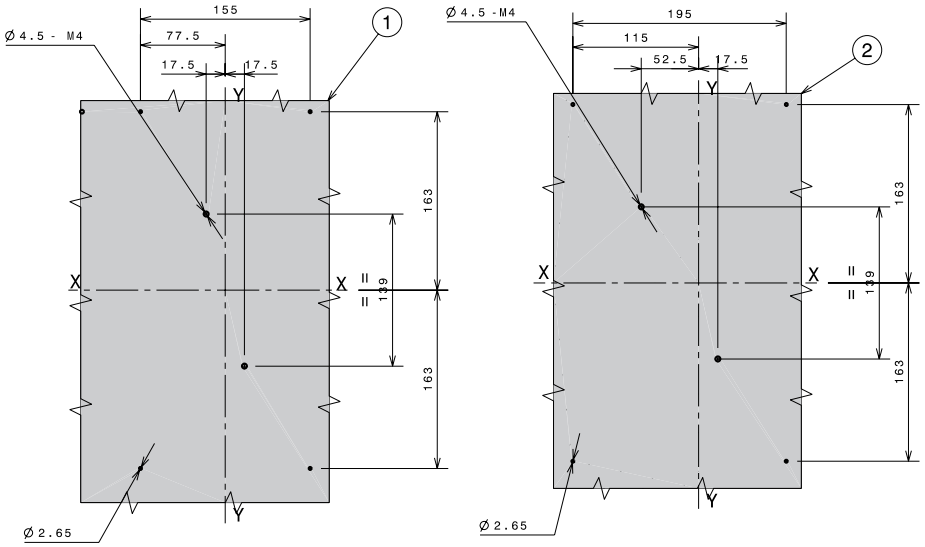
Terminals for fixed circuit-breaker

Terminals ES

Key
1 Drilling template for 3p circuit-breaker
2 Drilling template for 4p circuit-breaker
3 Front extended spread terminals
4 200mm insulating barriers between phases (compulsory) provided
5 Insulated plate provided compulsory for Ue>440V

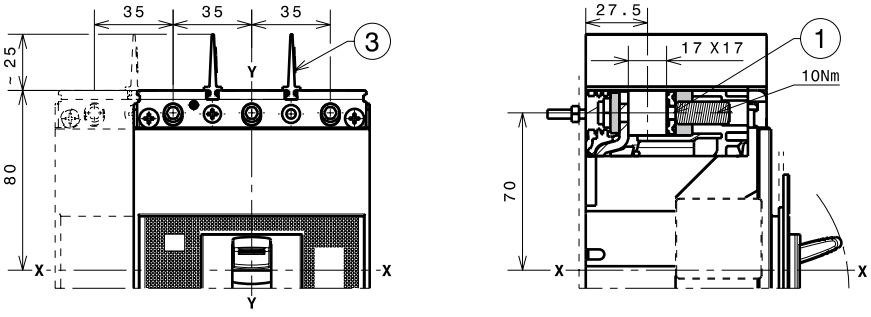


3 POLES **4 POLES**

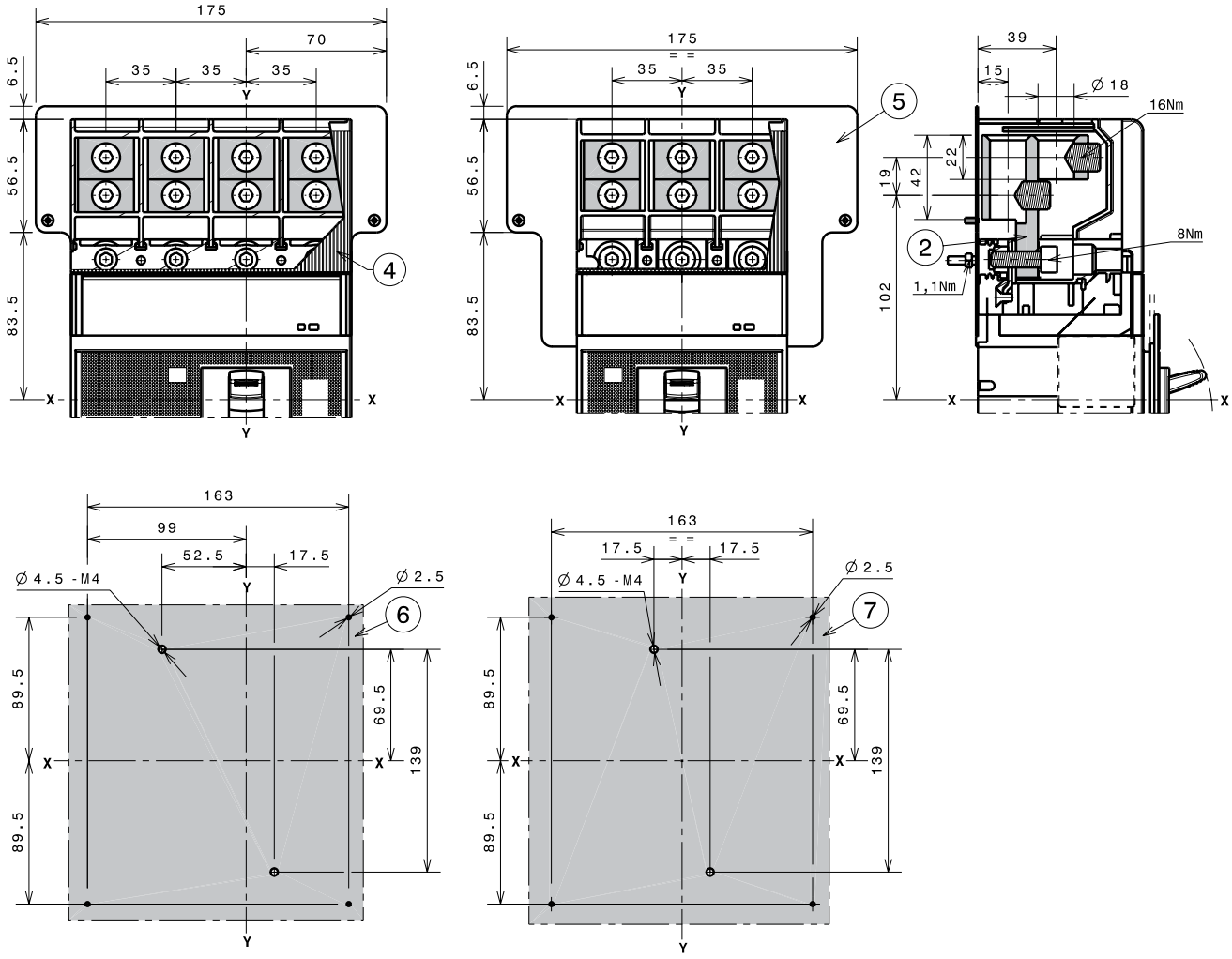


1x1...185mm² terminals FCCuAl

Key
1 1x1...185mm² terminals FCCuAl
3 25mm insulating barriers between phases (compulsory) provided



2x35...150mm² terminals FCCuAl



—

Key

2 2x35...150mm² terminals FCCuAl

4 Terminal covers with degree of protection IP40 (optional) provided

5 Provided rear insulated plate (mandatory for CuAl 2x150mm² cables)

6 Drilling template for circuit-breaker IV fixing with insulating courtes plate

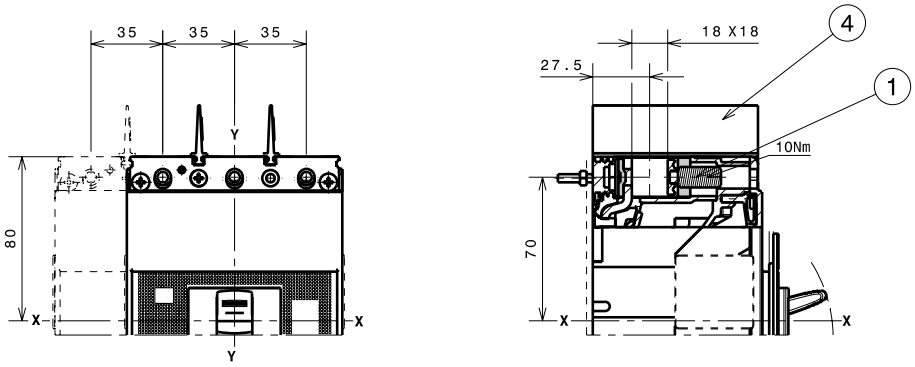
7 Drilling template for circuit-breaker III fixing with insulating courtes plate

Tmax XT4 – Installation

Terminals for fixed circuit-breaker

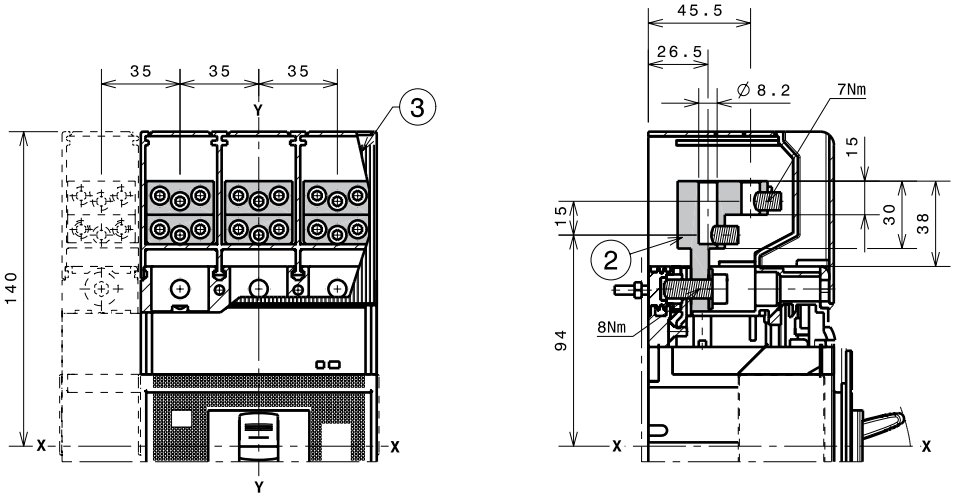
Terminals FCCu

Key
1 Terminals FCCu
4 25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker

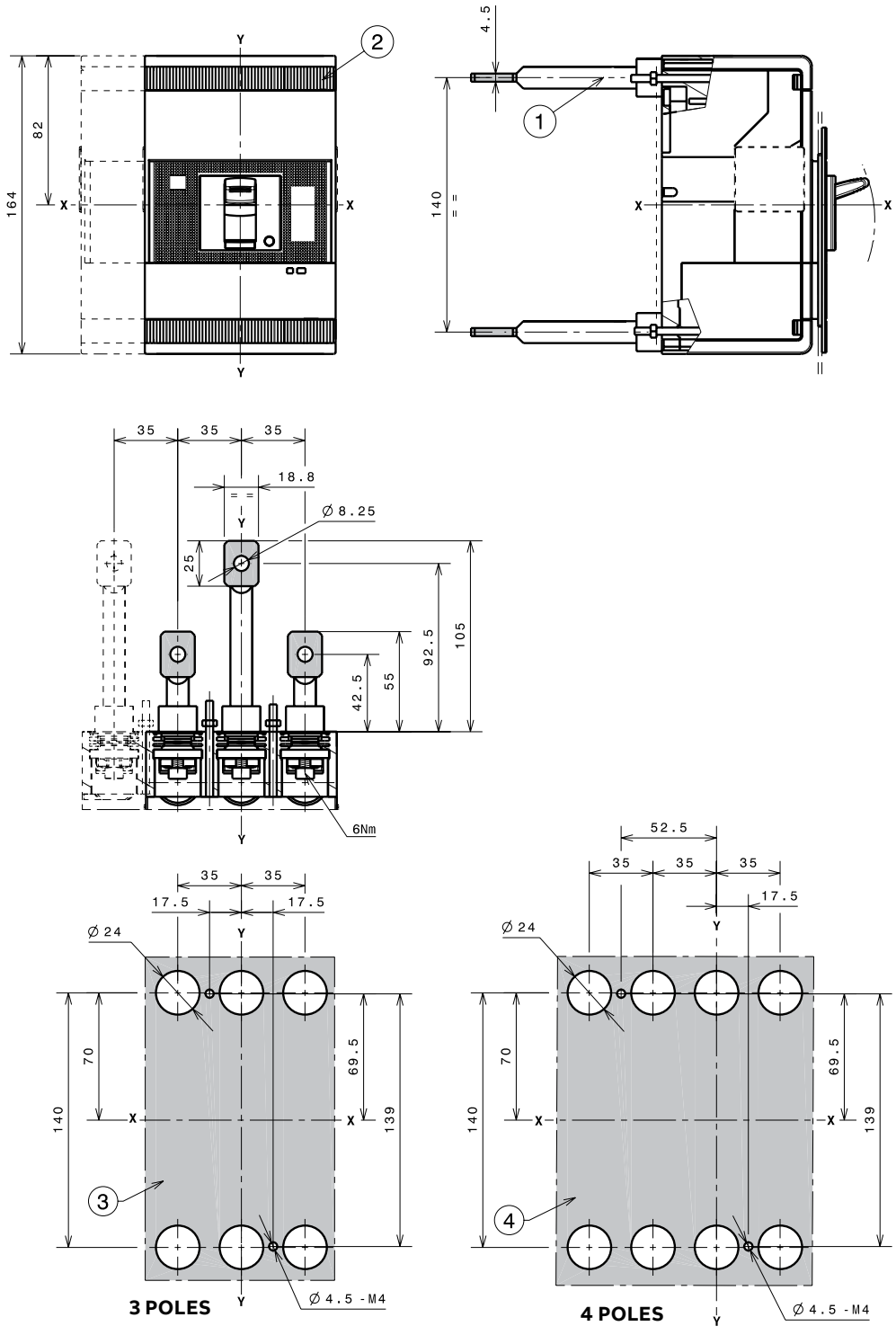


Terminals MC

Key
2 Multicable terminals
3 Terminal covers with degree of protection IP40 (optional) provided



Terminals R



—

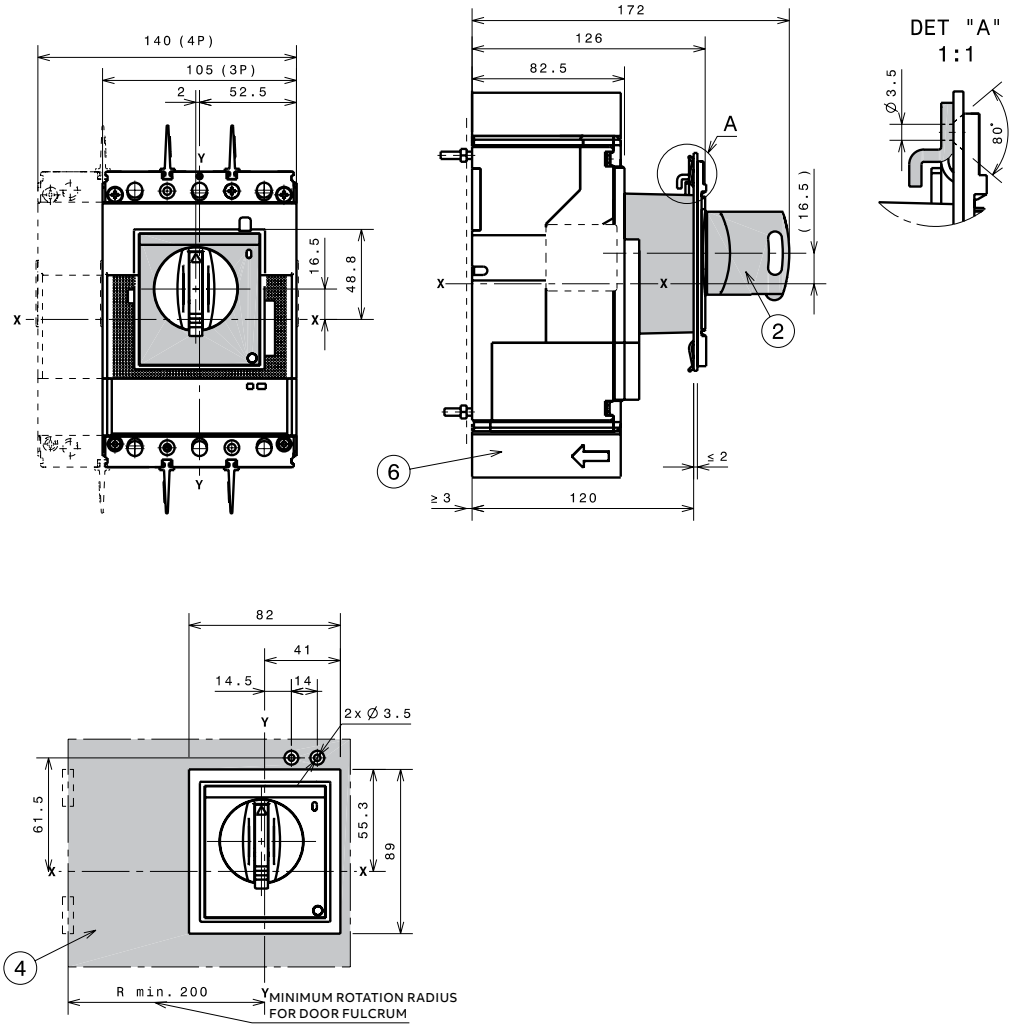
Key

1 Adjustable rear terminals
2 Bottom terminal covers with degree of protection IP40 (optional) provided
3 Drilling template for circuit-breaker III fixing on sheet
4 Drilling template for circuit-breaker IV fixing on sheet

Tmax XT4 – Installation

Accessories for fixed circuit-breaker

Rotary handle operating mechanism on circuit-breaker (RHD)



—

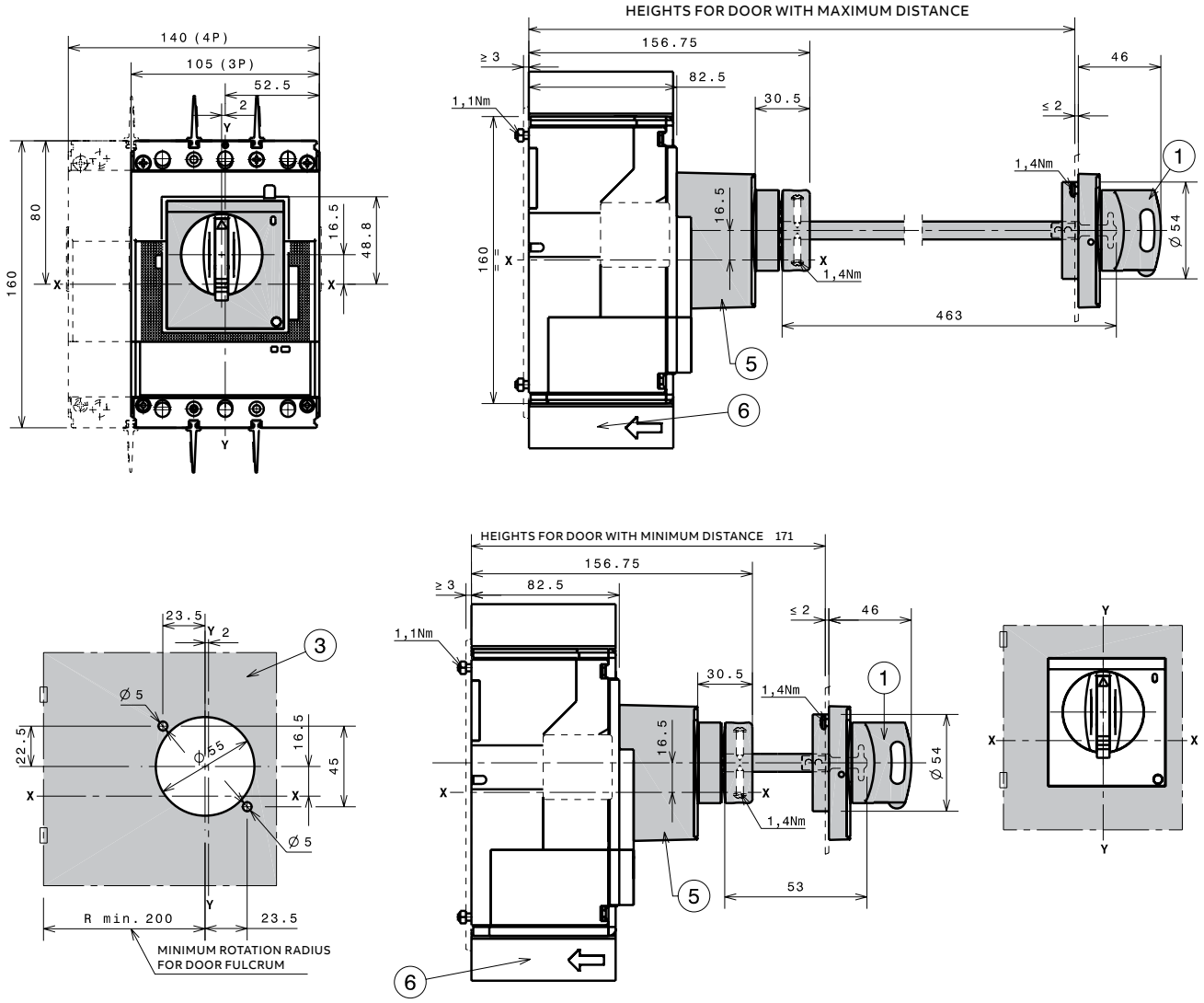
Key

2 Rotary handle operating mechanism on circuit-breaker

4 Drilling template of door with direct rotary handle

6 25mm insulating barriers between phases

Rotary handle operating mechanism of the compartment door (RHE)



—

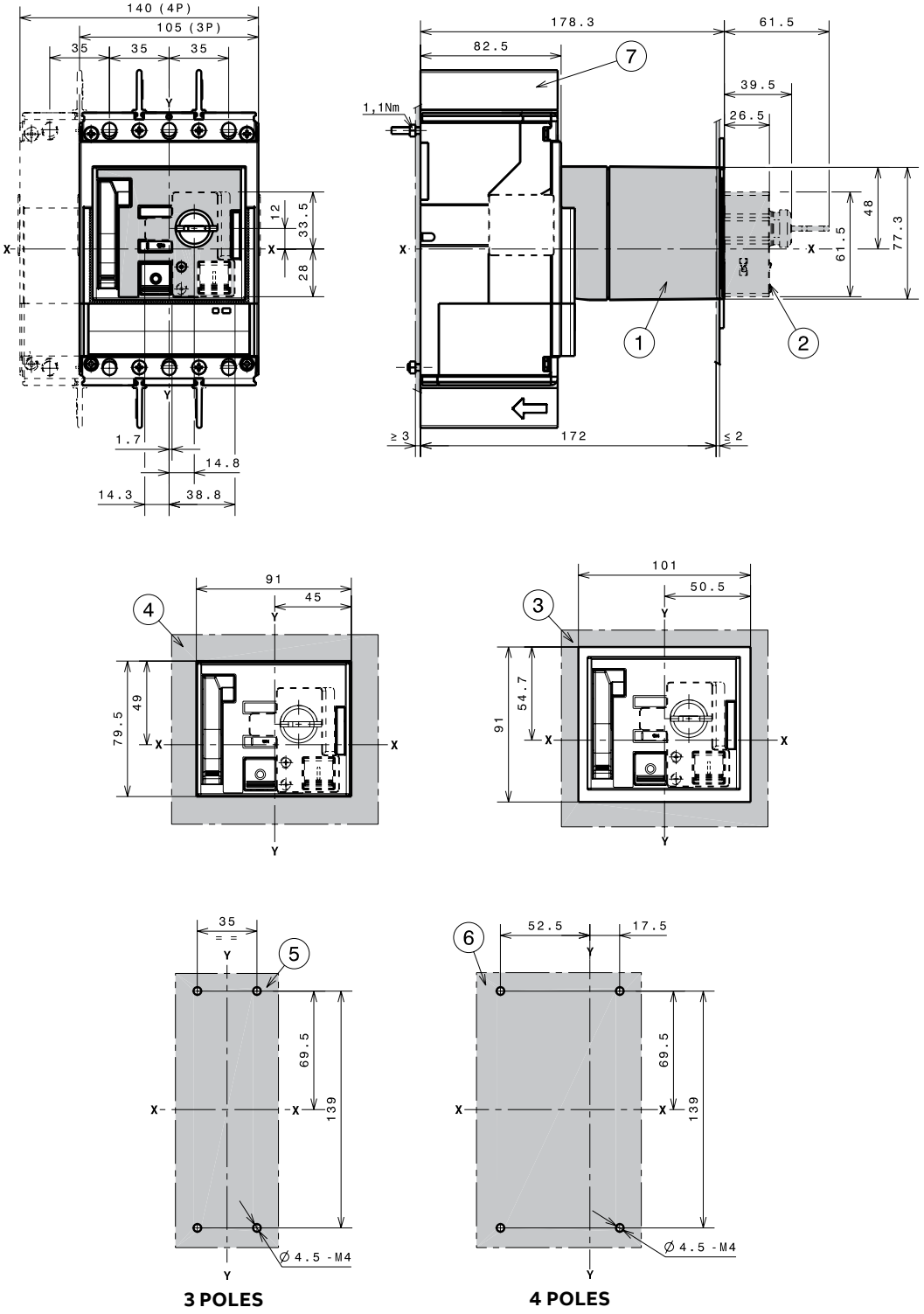
Key

1 Rotary handle operating mechanism of the compartment door
3 Drilling template for RHE
5 Transmission unit
6 25mm insulating barriers between phases

Tmax XT4 – Installation

Accessories for fixed circuit-breaker

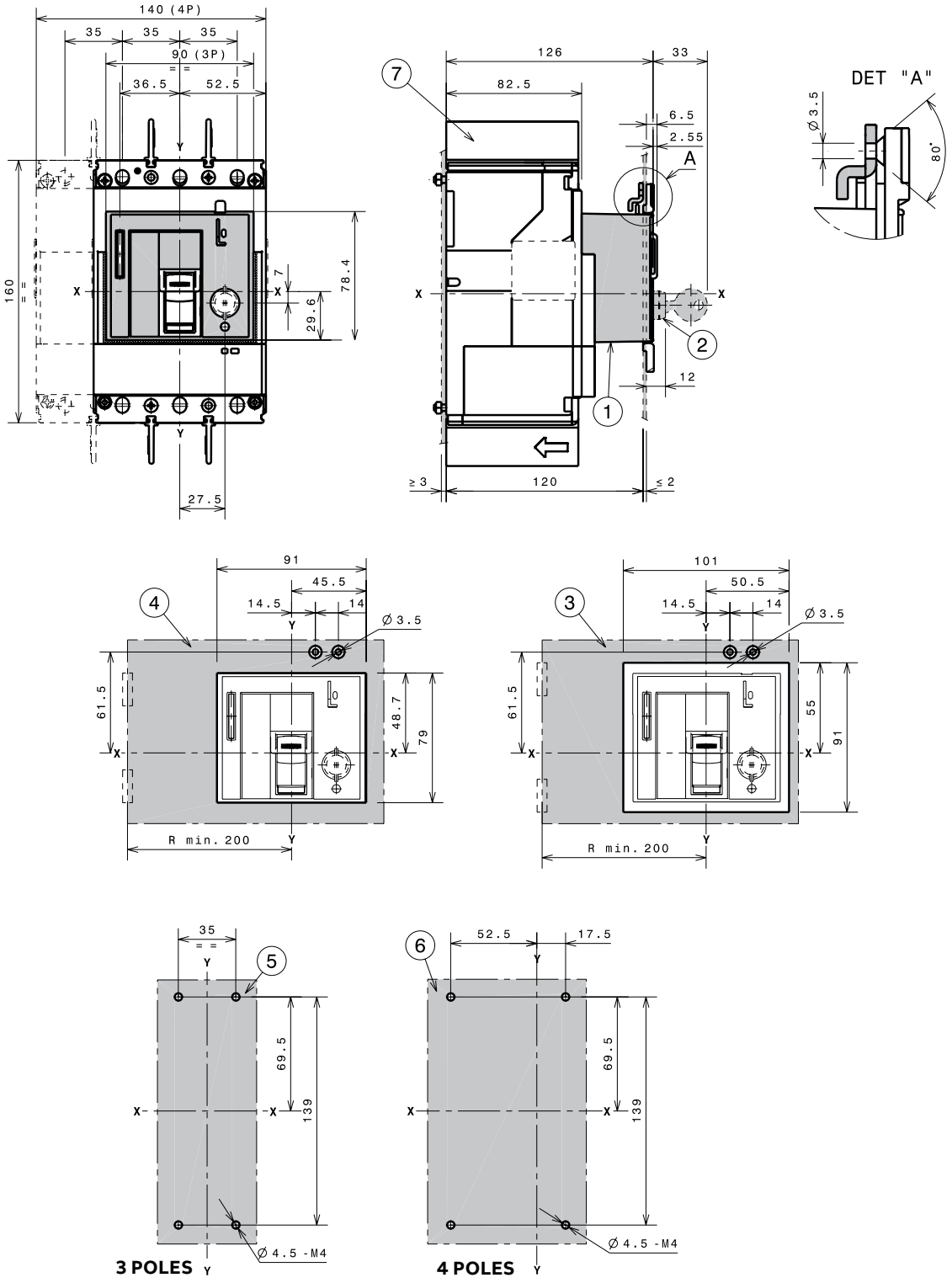
Stored energy motor operator (MOE)



Key

1 Stored energy motor operator (MOE)
2 Key lock optional
3 Drilling template of door with direct rotary handle with flange (MOE)
4 Drilling template of door with direct rotary handle without flange (MOE)
5 Drilling template for circuit-breaker III fixing on sheet
6 Drilling template for circuit-breaker IV fixing on sheet
7 25mm insulating barriers between phases

Front for lever operating mechanism (FLD)



—

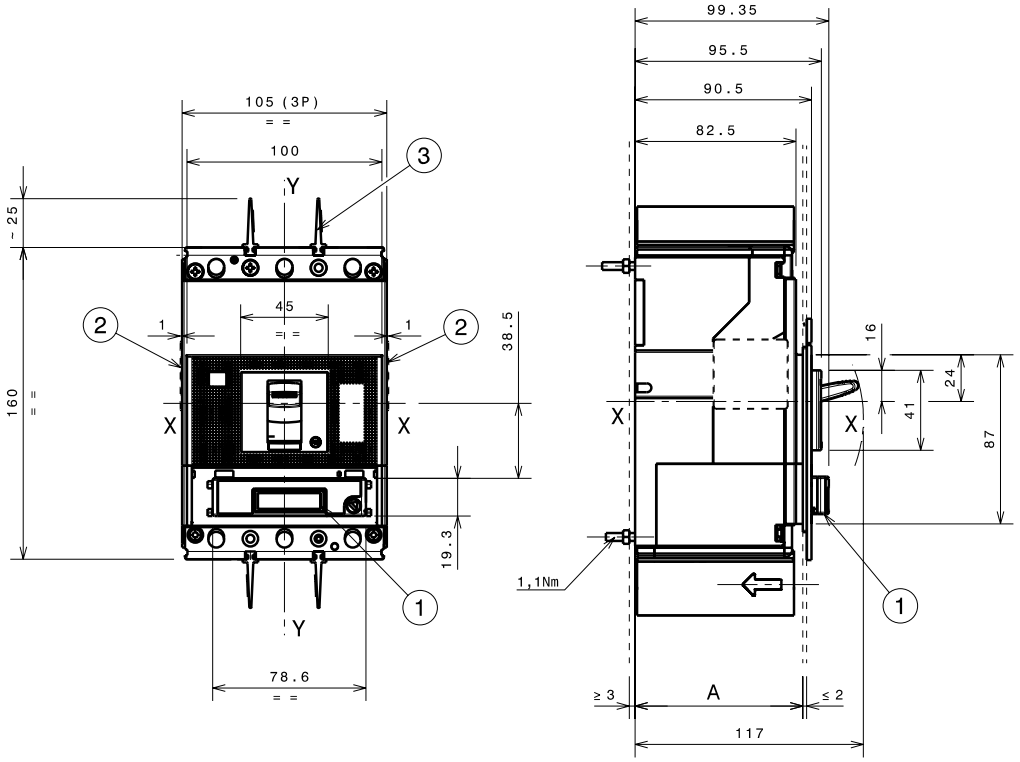
Key

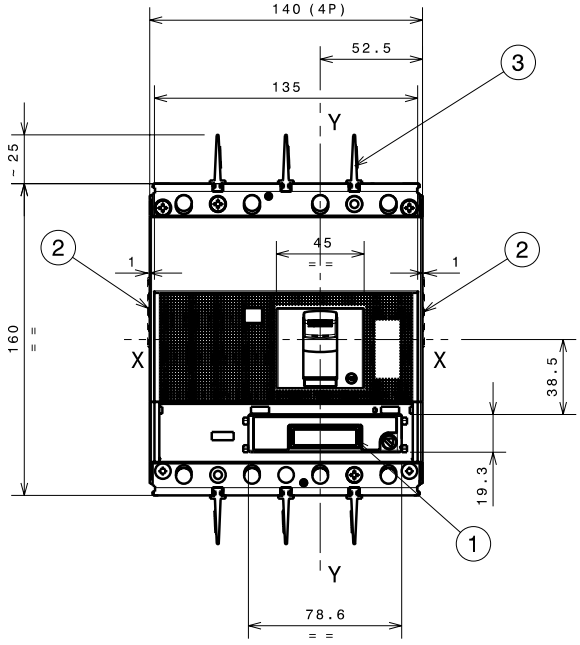
1 Front for lever operating mechanism (FLD)
2 Key lock optional
3 Drilling template of door with direct rotary handle with flange (FLD)
4 Drilling template of door with direct rotary handle without flange (FLD)
5 Drilling template for circuit-breaker III fixing on sheet
6 Drilling template for circuit-breaker IV fixing on sheet
7 25mm insulating barriers between phases

Tmax XT4 – Installation

Accessories for fixed circuit-breaker

Ekip Display or LED Meter



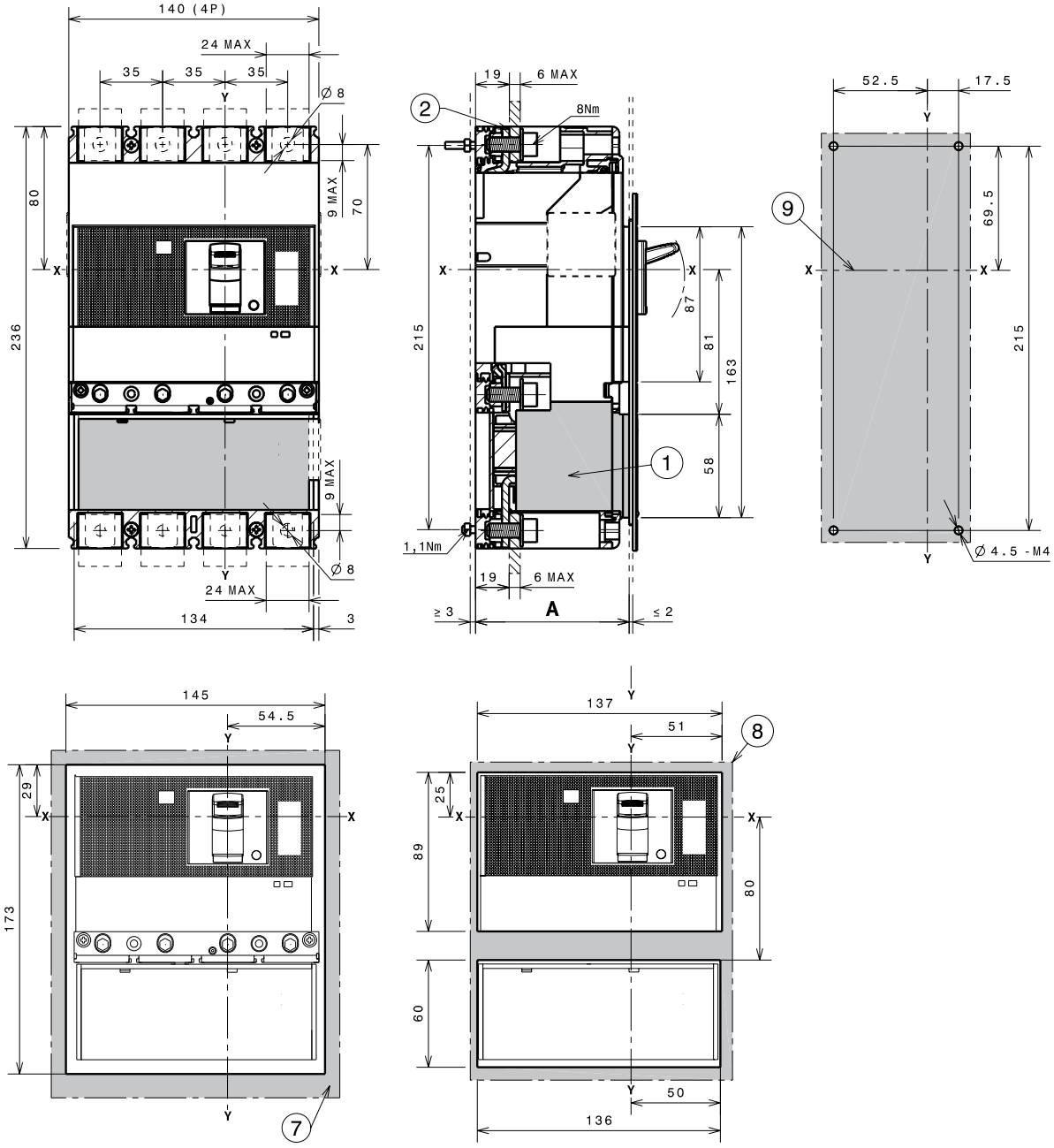


—

Key

1 Ekip Display or LED Meter
2 Optional wiring ducts
3 25mm insulating barriers between phases

Residual current RC Sel



Key
1 Residual current
2 Front terminals
7 Drilling template of door with direct rotary handle and fixing with flange
8 Drilling template of door with direct rotary handle and fixing without flange
9 Drilling template for circuit-breaker fixing on sheet

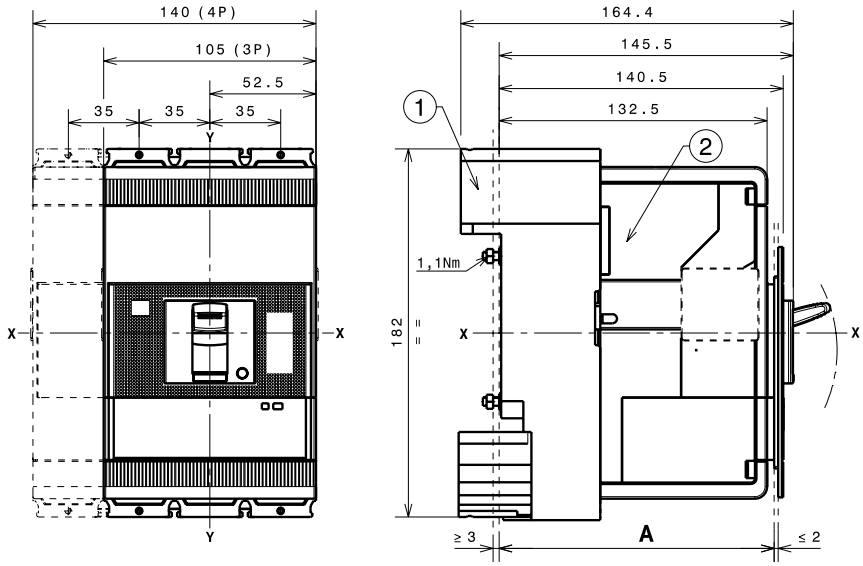
		A
With standard flange	IV	86
Without flange	IV	83.5

Tmax XT4 – Installation

Installation for plug-in circuit-breaker

Fixing on sheet

Key
1 Fixed part
2 Moving part

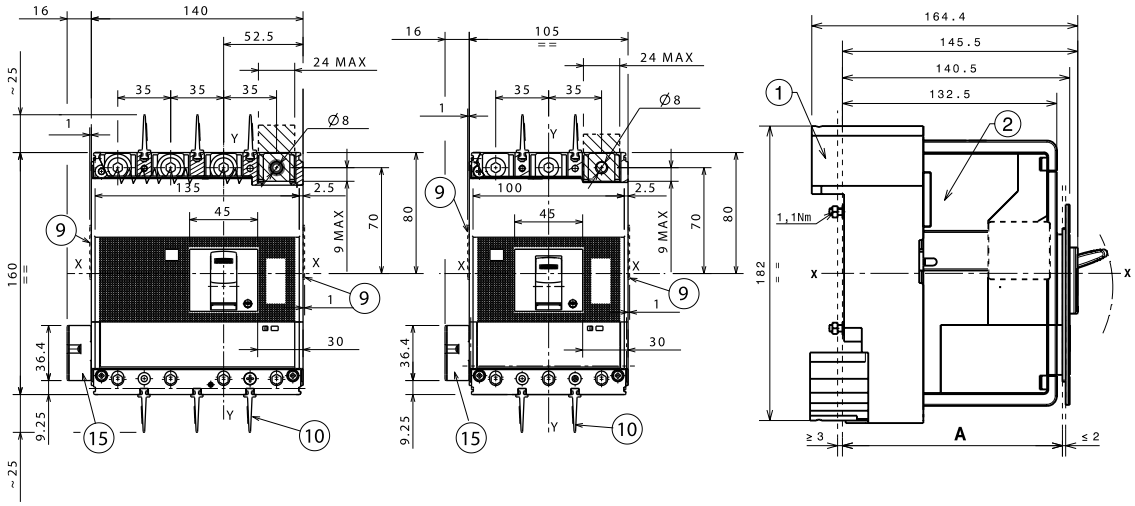


Fixing at 50mm		A
With standard flange	III-IV	136
Without flange	III-IV	133.5
	III-IV	141.5

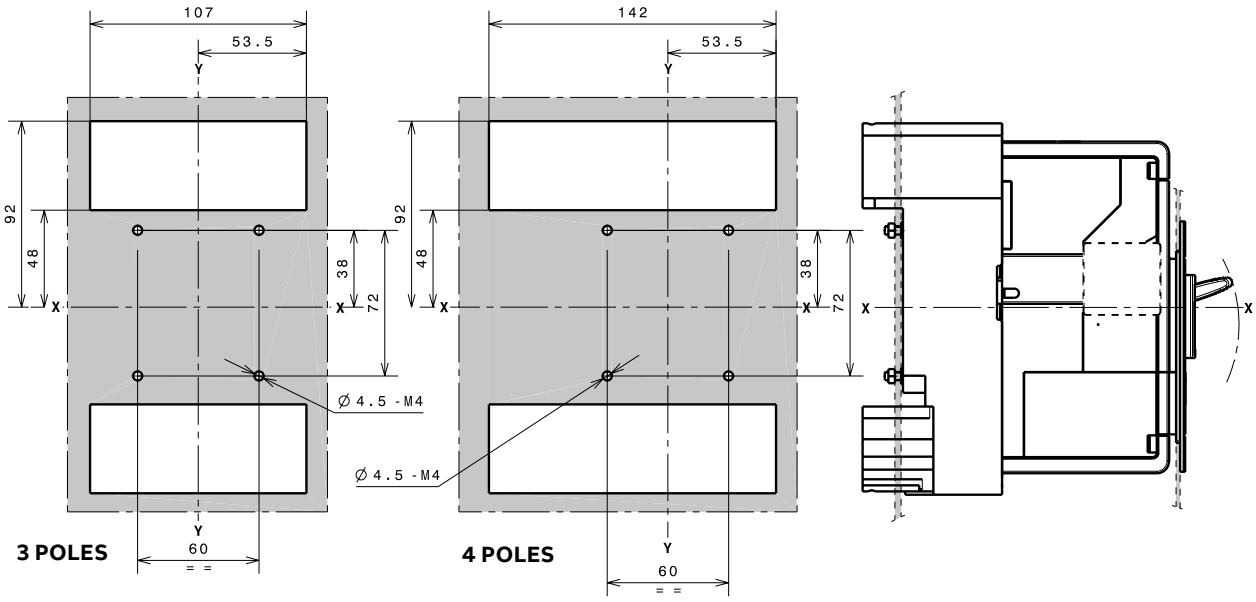
Fixing at 70mm for extended front terminals		A
With standard flange	III-IV	156
Without flange	III-IV	153.5
	III-IV	161.5

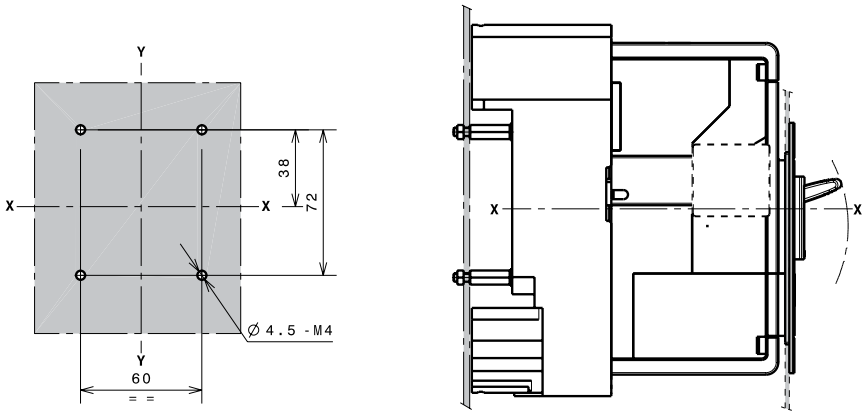
With side connector for Ekip Touch trip units

Key
1 Front terminals
2 Flange for IV circuit-breaker (always supplied with IV cb)
9 Optional wiring duct
10 Interphase insulating barriers 25mm - 0.98"(compulsory)
15 Connection kit F/P IntBus/ExtNeut/Se



Drilling templates for support sheet



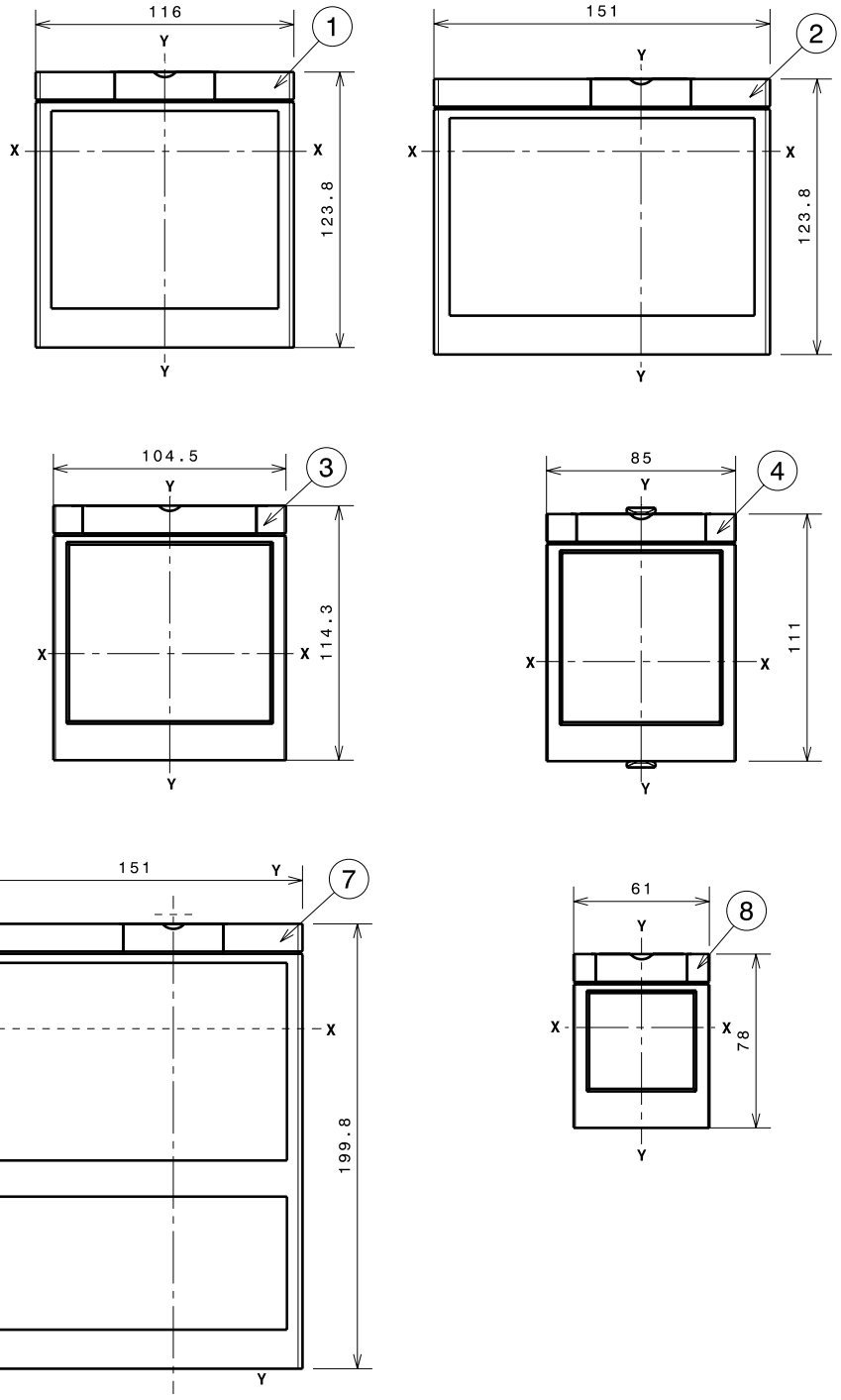


3-4 POLES

Tmax XT4 – Installation

Installation for plug-in circuit-breaker

Flanges



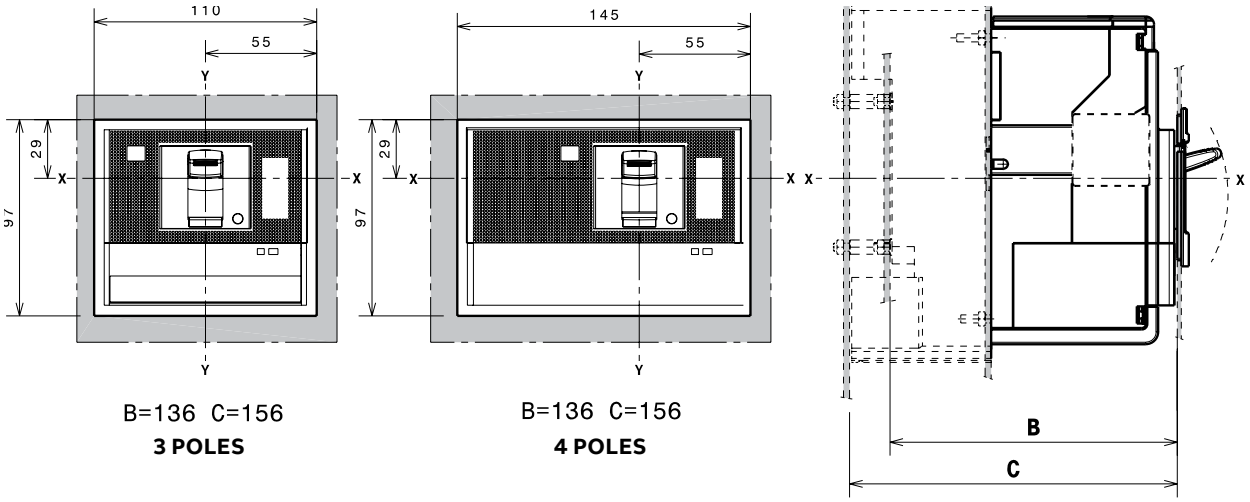
—

Key

1 Flange for plug-in circuit-breaker III
2 Flange for plug-in circuit-breaker IV
3 Flange for plug-in circuit-breaker III-IV with MOE and FLD
4 Flange for circuit-breaker III-IV with direct rotary handle
7 Flange for plug-in circuit-breaker IV with front extended terminals and residual current
8 Optional flange

Drilling templates compartment door

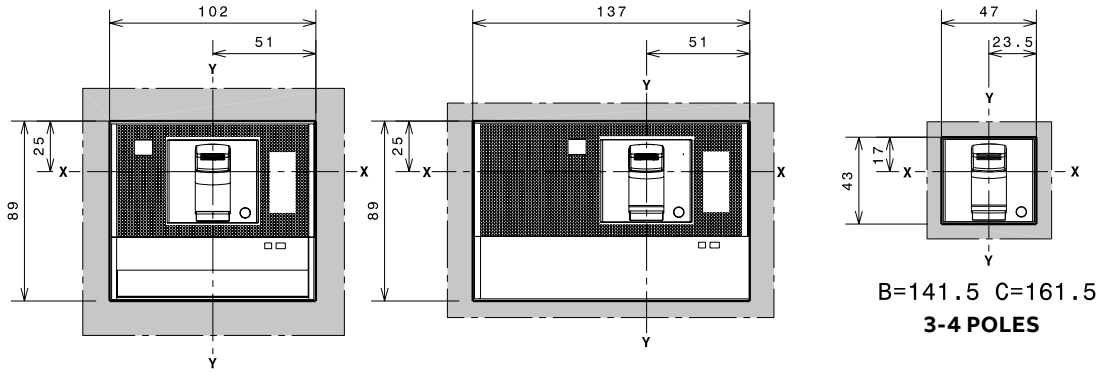
With standard flange



B=136 C=156
3 POLES

B=136 C=156
4 POLES

Without flange

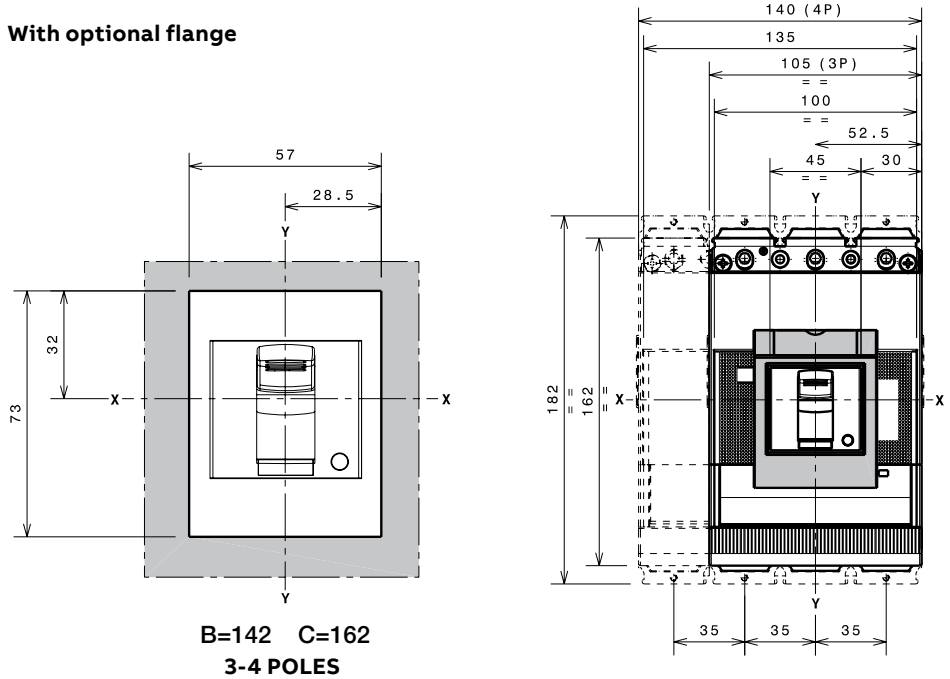


B=133.5 C=153.5
3 POLES

B=133.5 C=153.5
4 POLES

B=141.5 C=161.5
3-4 POLES

With optional flange

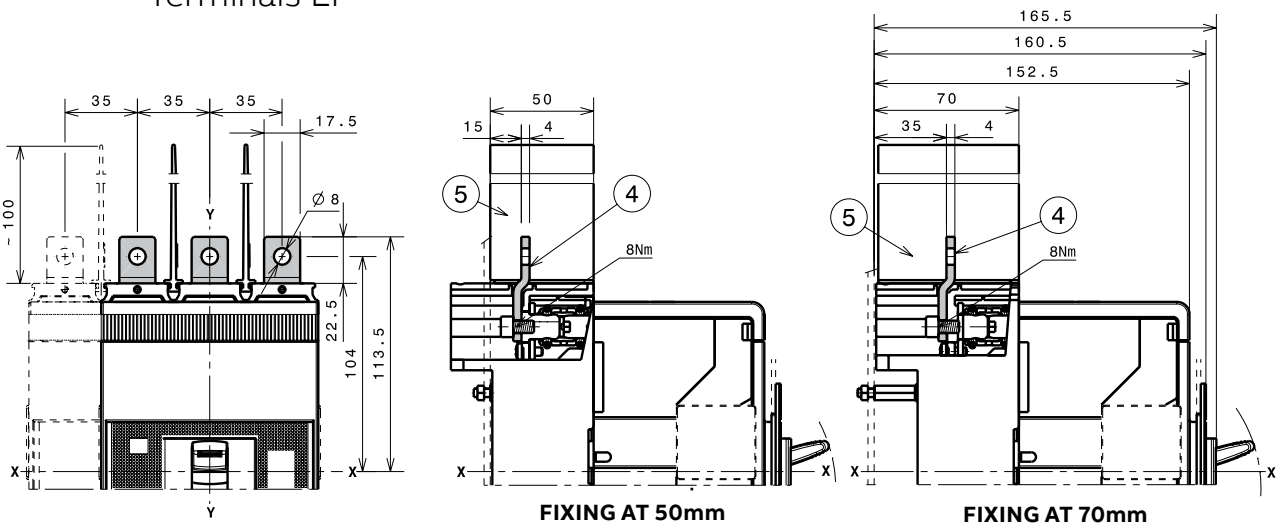


B=142 C=162
3-4 POLES

Tmax XT4 – Installation

Terminals for plug-in circuit-breaker

Terminals EF



—

Key

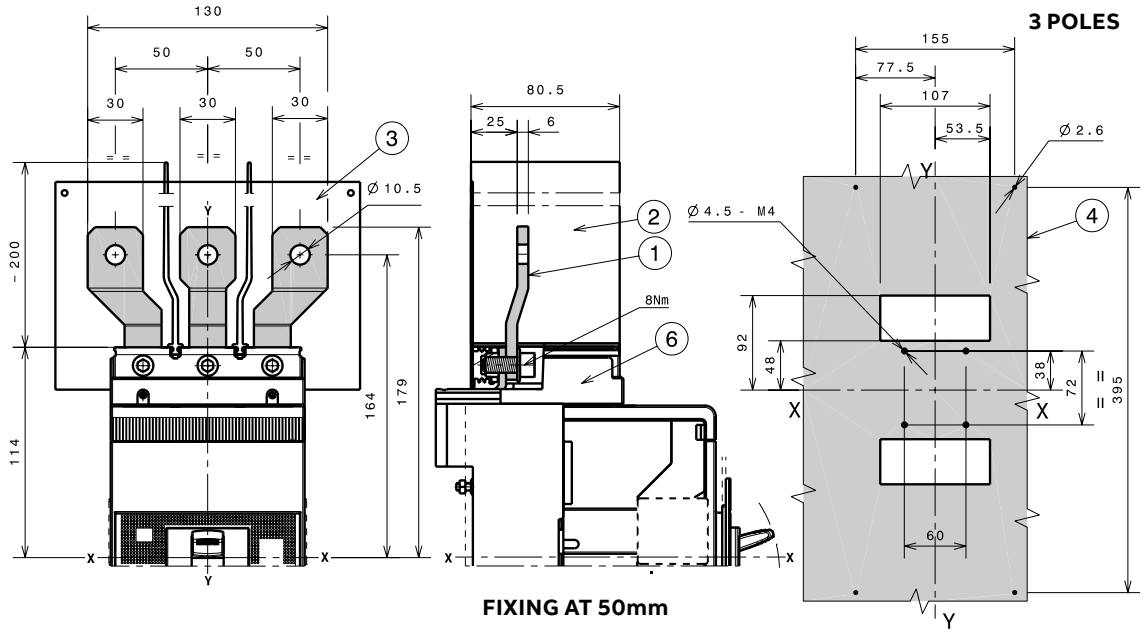
4 Front extended terminals

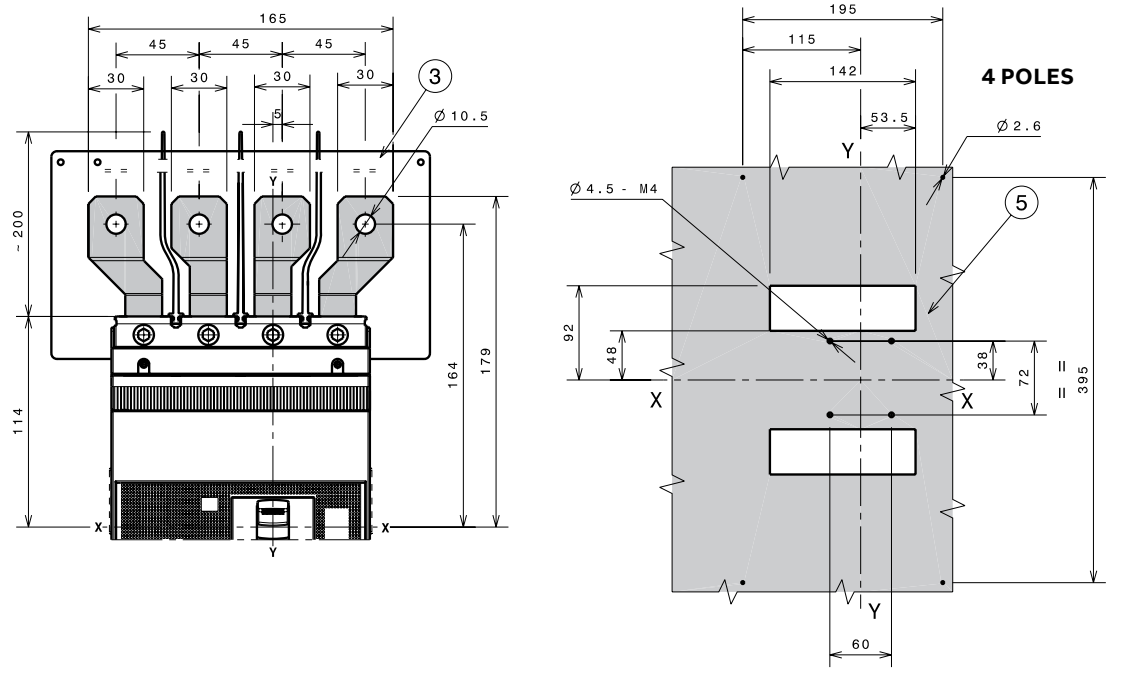
5 100mm insulating barriers between phases (compulsory) provided

—

Note:
insulated plate to be provided by customer

Terminals ES





—

Key

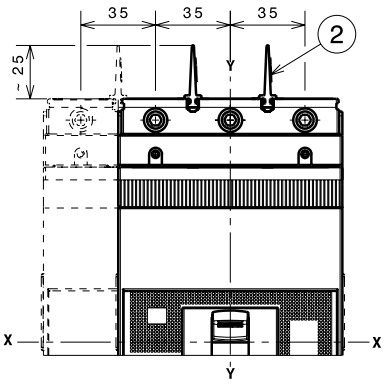
1 Front extended spread terminals
2 200mm insulating barriers between phases (compulsory) provided
3 Insulated plate (compulsory) provided
4 Drilling template for 3p circuit-breaker
5 Drilling template for 4p circuit-break
6 Adaptor (compulsory) not provided

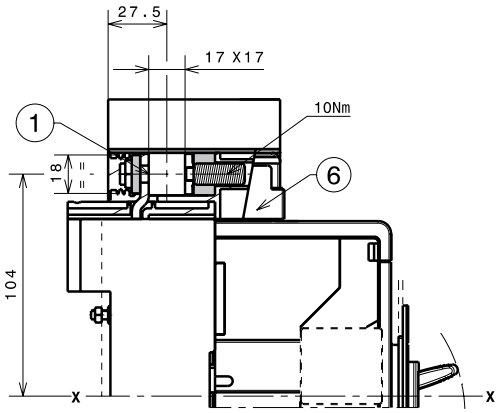
Tmax XT4 – Installation

Terminals for plug-in circuit-breaker

1x1...185mm² terminals FCCuAl

Key
1 1x1...185mm² front terminals FCCuAl
2 25mm insulating barriers between phases (compulsory) provided
6 Adaptor (compulsory) not provided

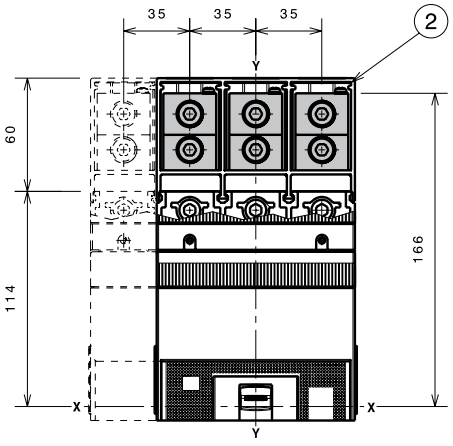


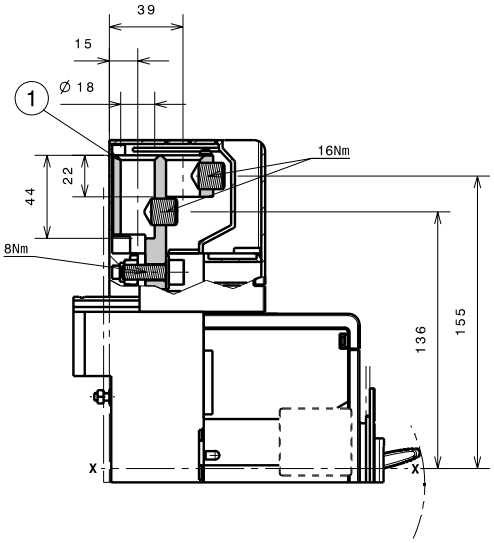


FIXING AT 50mm

2x35...150mm² terminals FCCuAl

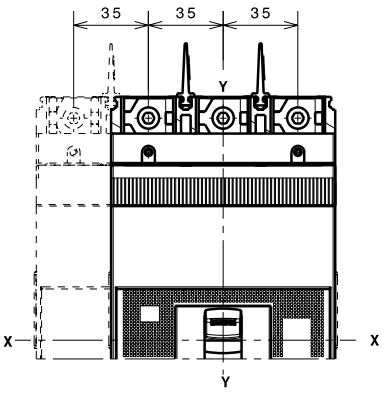
Key
1 2x150mm² external terminal FCCuAl
2 High terminal covers with degree of protection IP40 (optional) provided

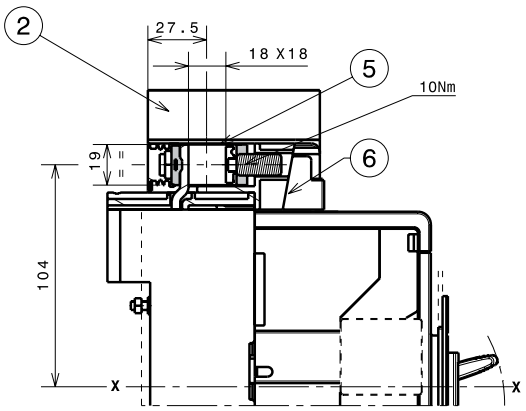




Terminals FCCu

Key
2 25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker
5 Terminals FCCu
6 Adaptor (compulsory) not provided

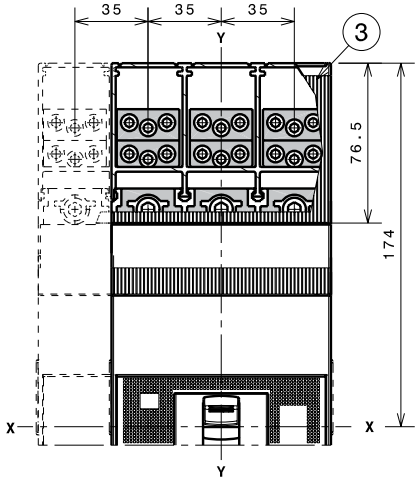


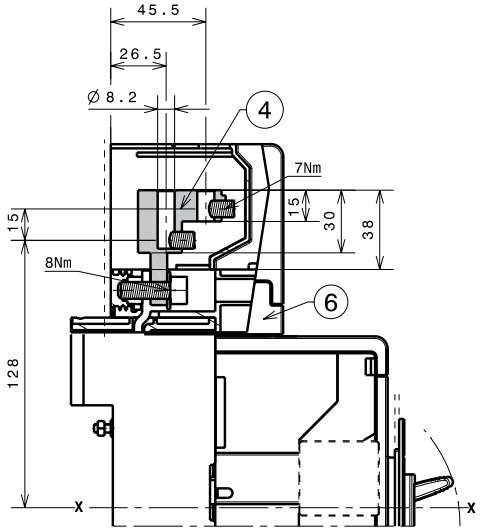


FIXING AT 50mm

Terminals MC

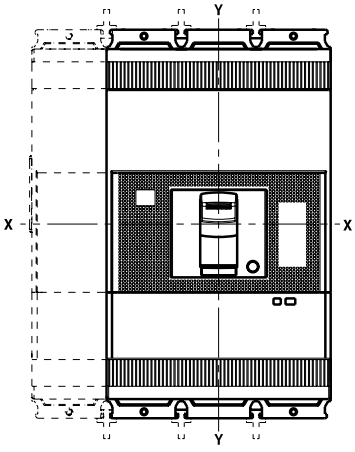
—
Key
3 Provided high terminal covers with degree of protection IP40 (mandatory for multicables terminals)
4 Multicable terminals
6 Adaptor (compulsory) not provided

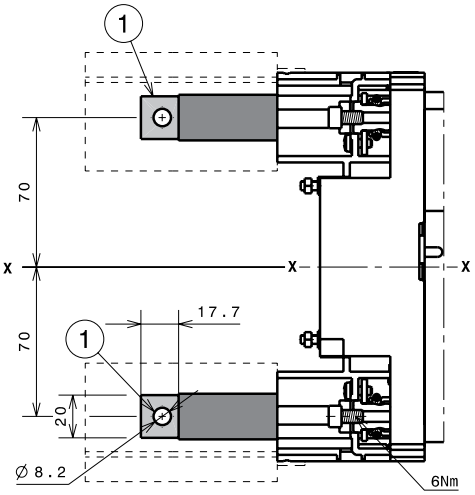




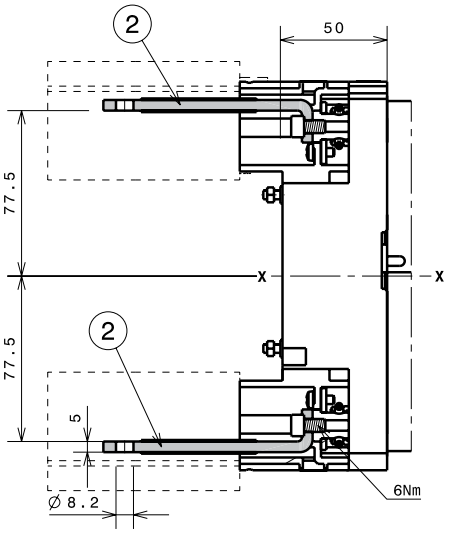
FIXING AT 50mm

Terminals HR/VR



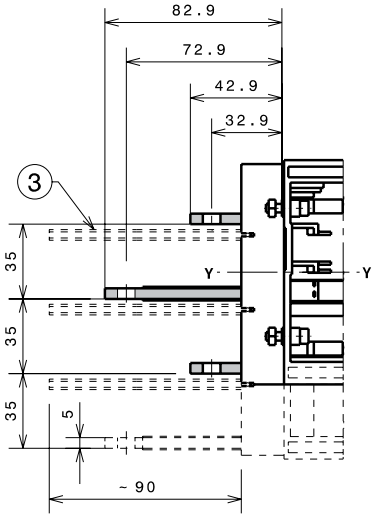


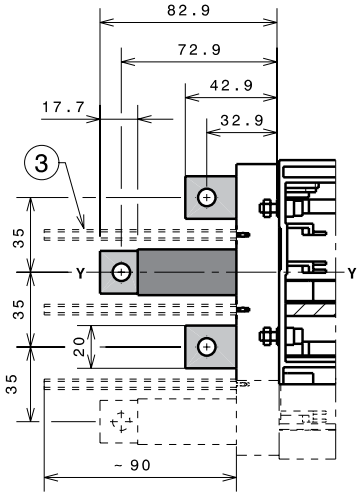
FIXING AT 50mm



FIXING AT 50mm

—
Key
1 Rear vertical terminals
2 Rear horizontal terminals
3 90mm insulating barriers between phases (compulsory) not provided

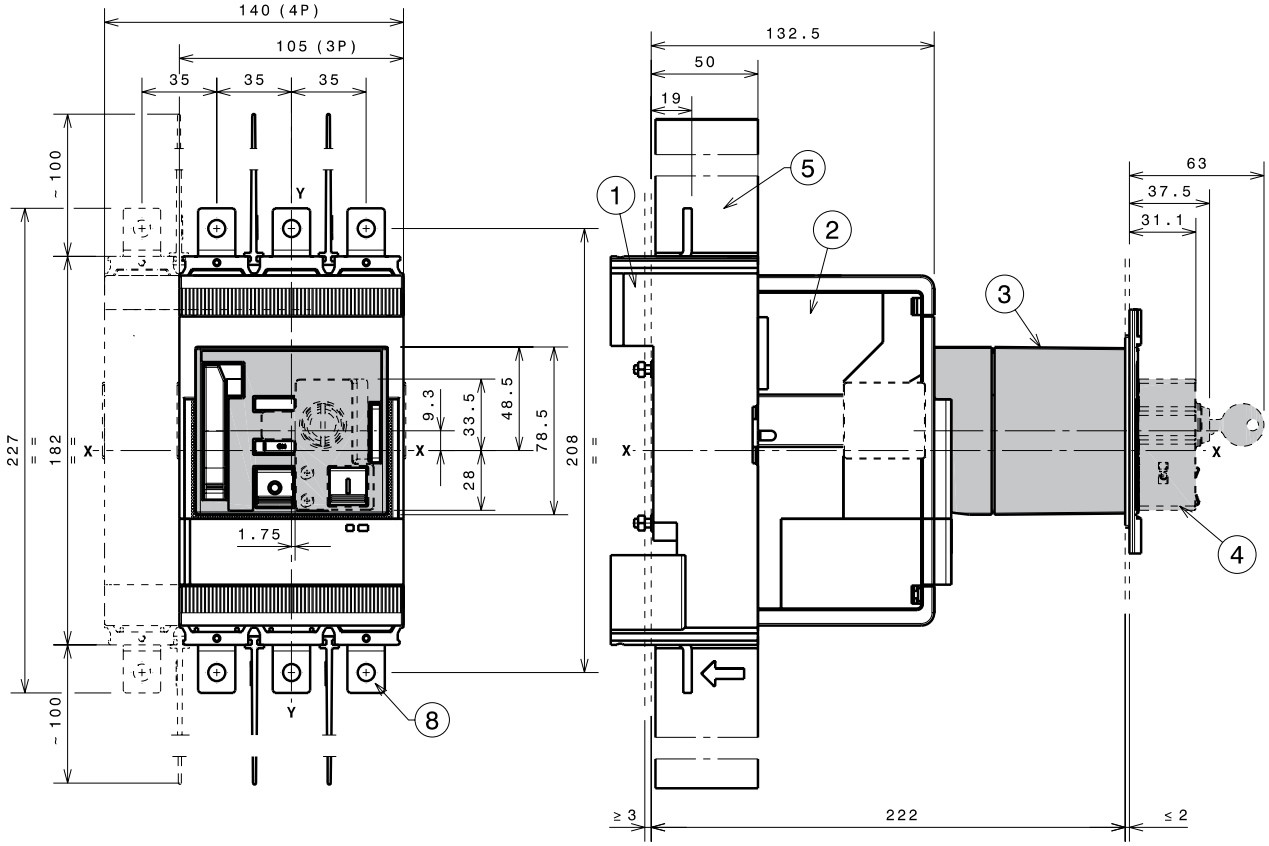


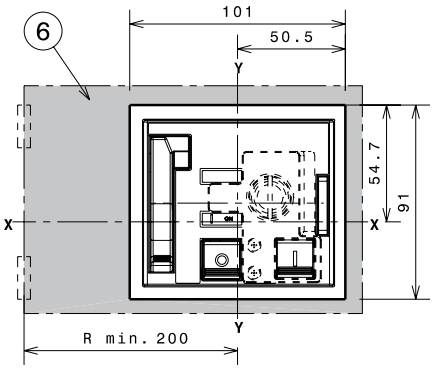


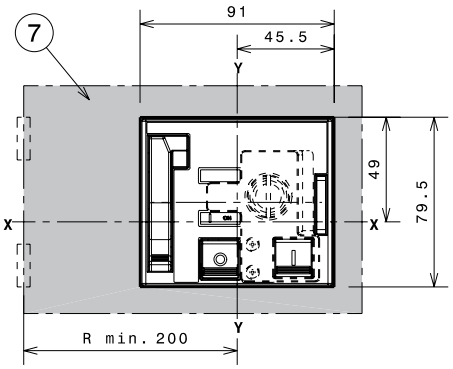
Tmax XT4 – Installation

Accessories for plug-in circuit-breaker

Stored energy motor operator (MOE)





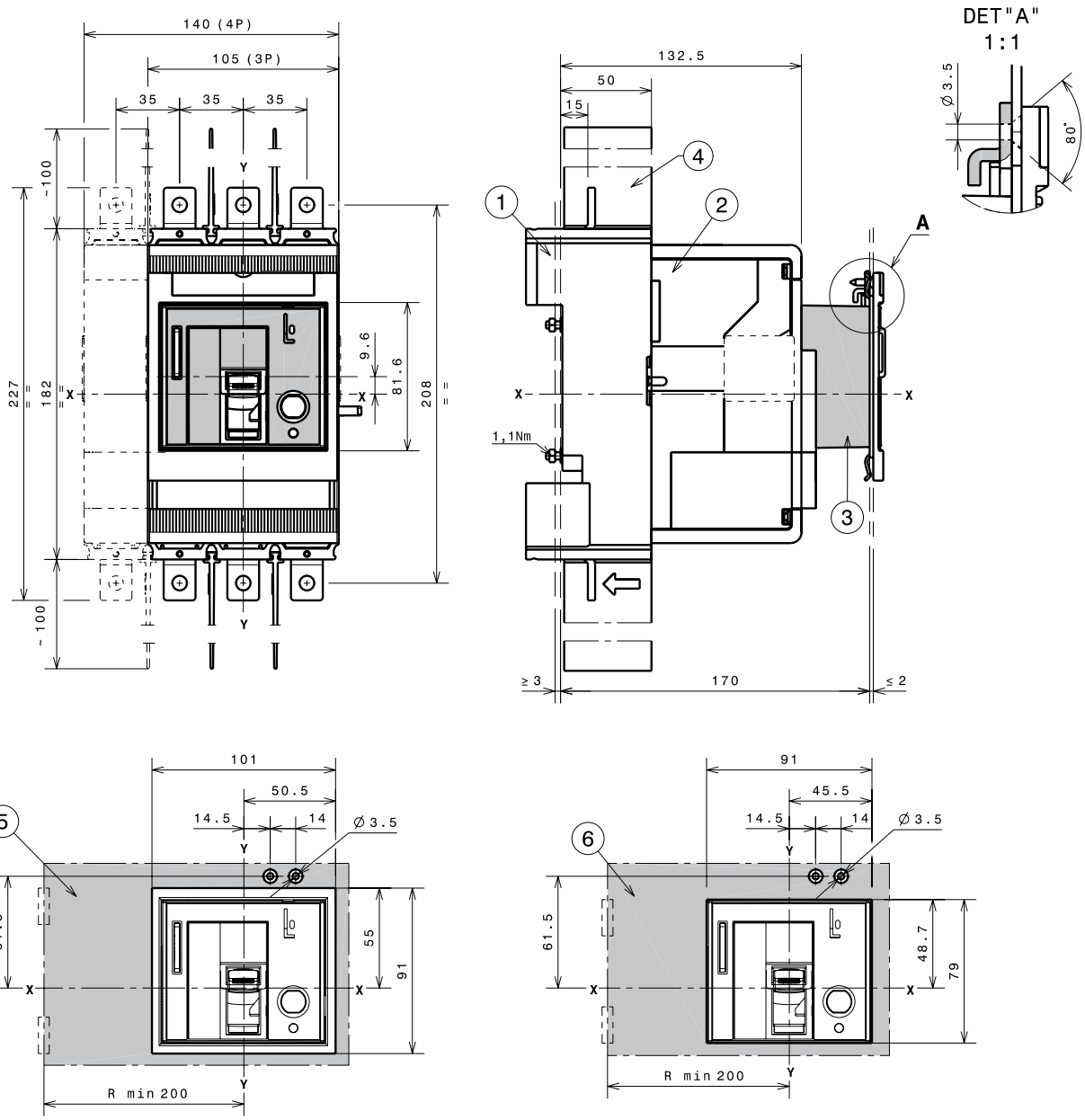


—

Key

1 Fixed part
2 Moving part
3 Stored energy motor operator (MOE)
4 Key lock optional
5 100mm insulating barriers between phases (compulsory) provided
6 Drilling template of door with direct rotary handle with flange
7 Drilling template of door with direct rotary handle without flange
8 Extended terminals

Front for lever operating mechanism (FLD)



—

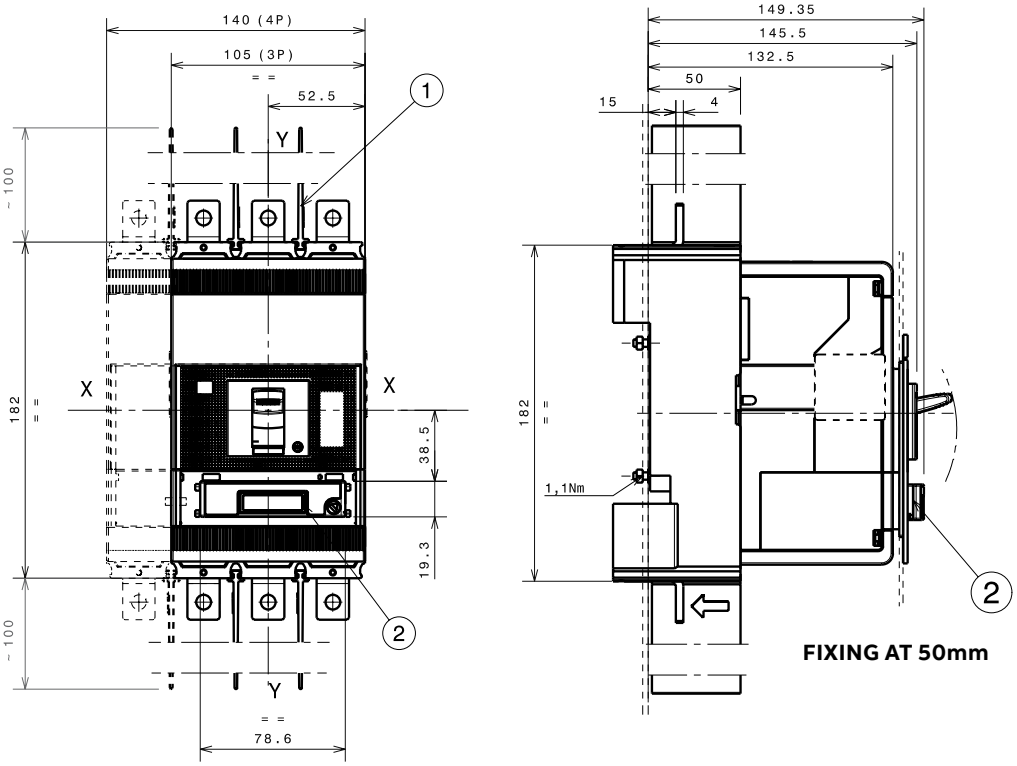
Key

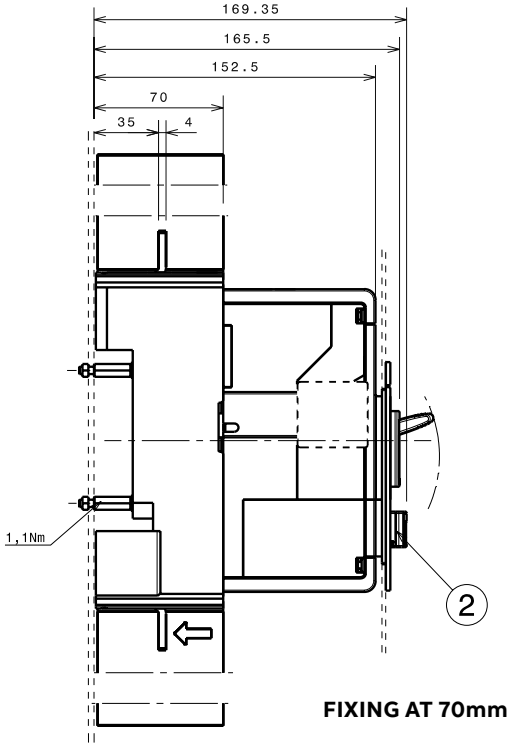
1 Fixed part
2 Moving part
3 Front for lever operating mechanism (FLD)
4 100mm insulating barriers between phases (compulsory) provided
5 Drilling template of door with direct rotary handle with flange
6 Drilling template of door with direct rotary handle without flange

Tmax XT4 – Installation

Accessories for plug-in circuit-breaker

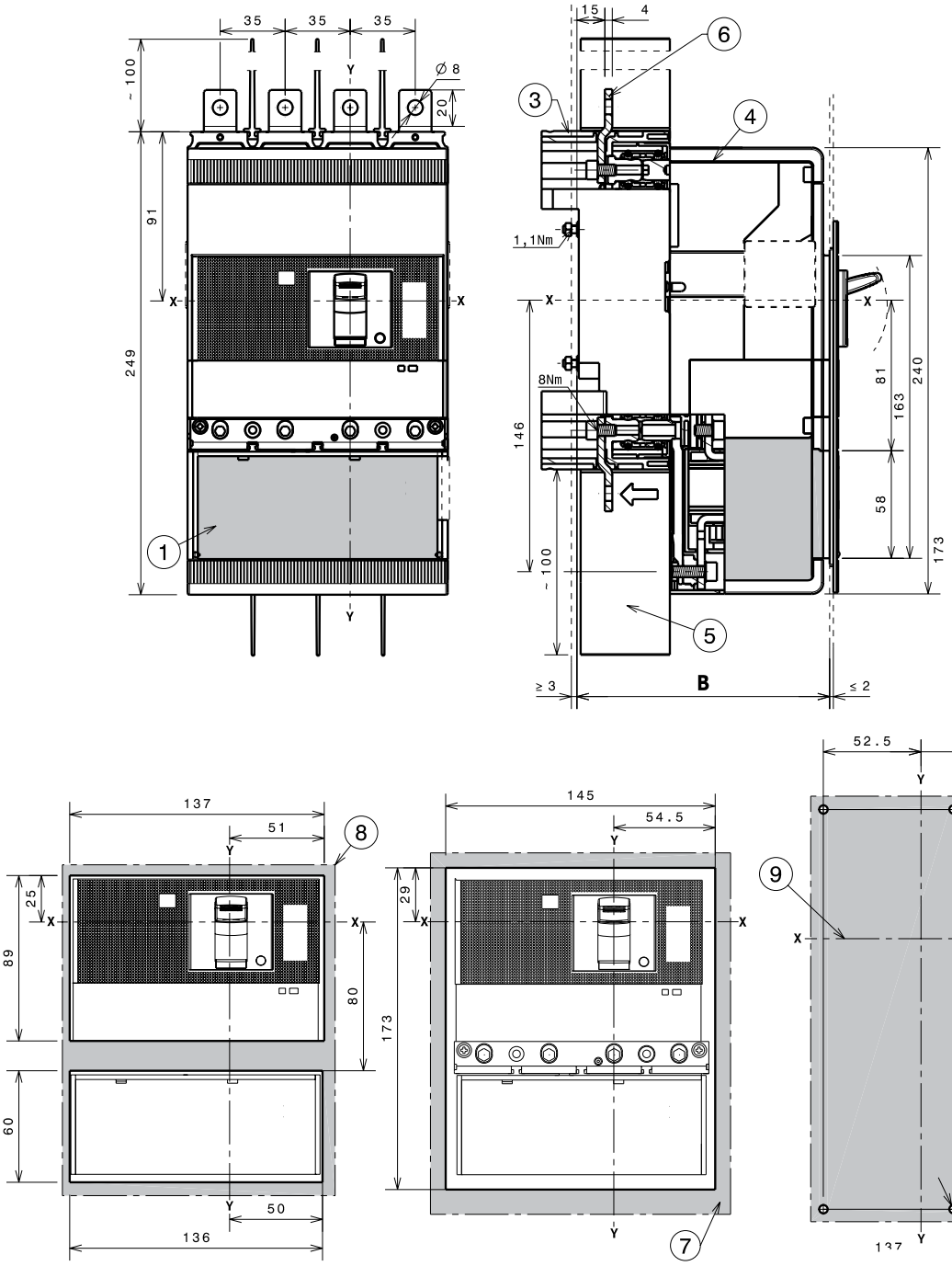
Ekip Display or LED Meter





Key
1 100mm insulating barriers between phases (compulsory) provided
2 Ekip Display or LED Meter

Residual current RC Sel



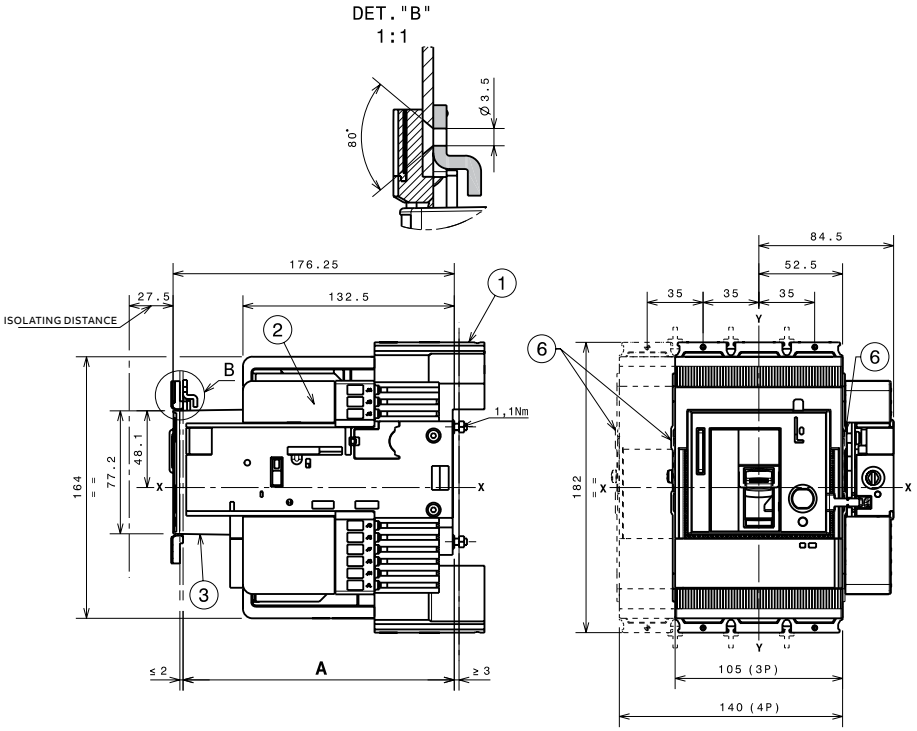
Key
1 Residual current
3 Fixed part
4 Moving part
5 100mm insulating barriers between phases (compulsory) provided
6 Extended terminals
7 Drilling template of door with direct rotary handle and fixing with flange
8 Drilling template of door with direct rotary handle and fixing without flange
9 Drilling template for circuit-breaker fixing on sheet

Fixing at 50mm		**B**
With standard flange	IV	136
Without flange	IV	133.5

Tmax XT4 – Installation

Installation for withdrawable circuit-breaker

Fixing on sheet



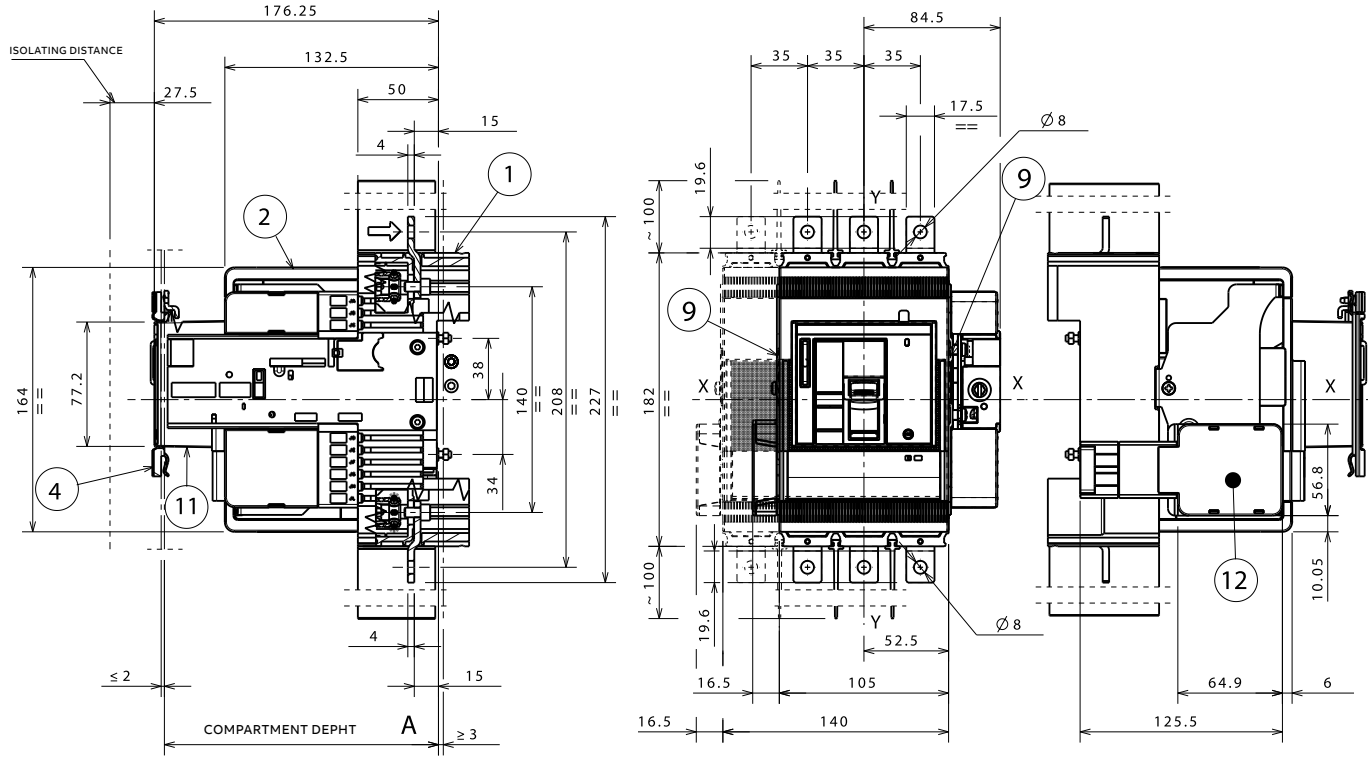
			A
With standard flange	III - IV	Fixing at 50mm	170
	III - IV	Fixing at 70mm for front extended terminals	190

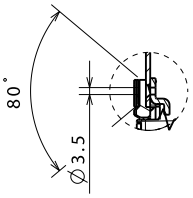
—

Key

1 Fixed part
2 Moving part
3 FLD (FLD or RHD or RHE or MOE) mandatory with withdrawable version
6 Optional wiring ducts

With side connector for Ekip Touch trip units





			A
With standard flange	III - IV	Fixing at 50mm	170
	III - IV	Fixing at 70mm for front extended terminals	190

—

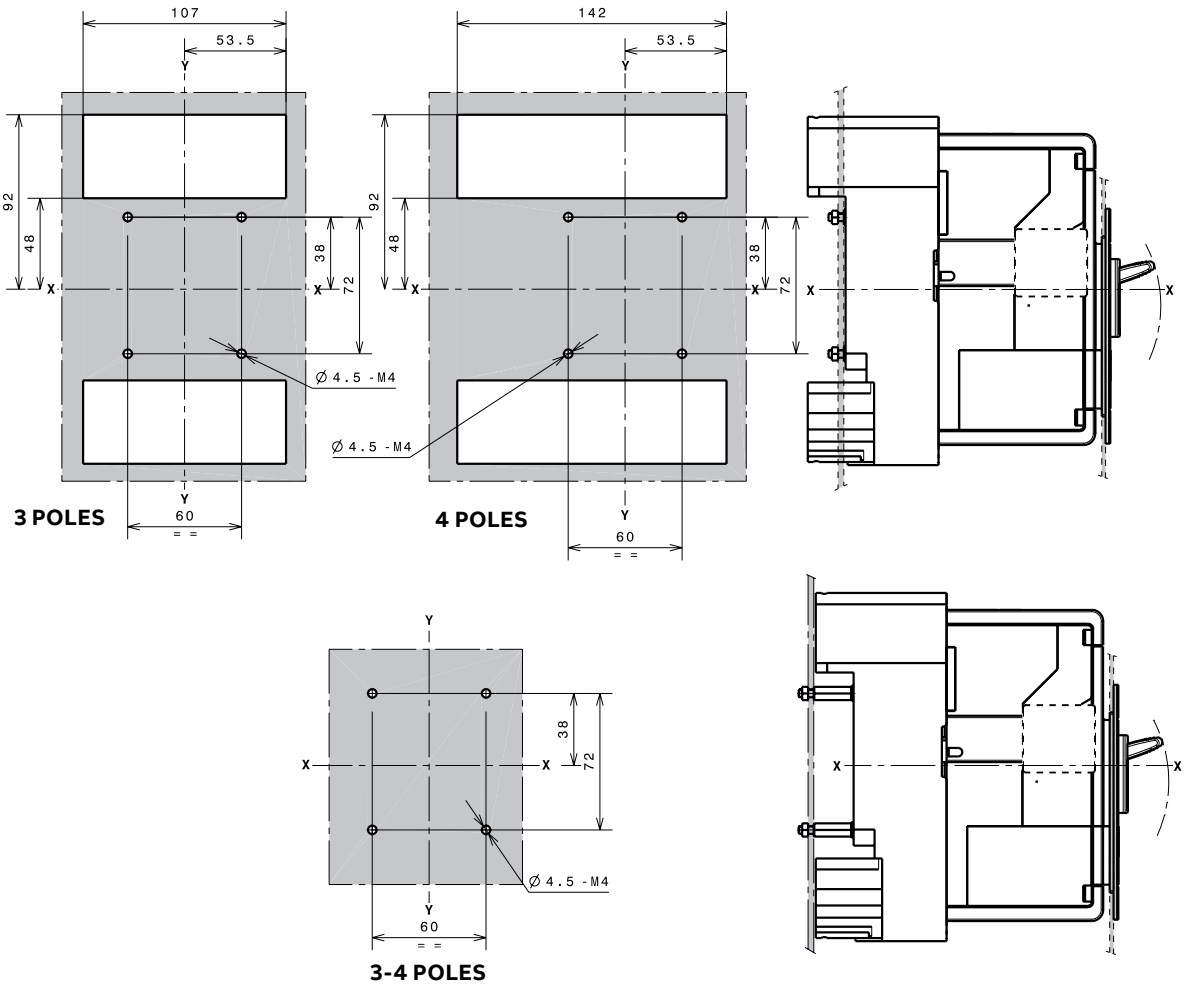
Key

1 Fixed part
2 Moving part
3 FLD (FLD or RHD or RHE or MOE) mandatory with withdrawable version
4 Flange
9 Optional wiring ducts
11 Fld (FLD o RHD o RHE o MOE) Compulsory with withdrawable version
12 Connection kit W IntBus/ExtNeut/Sel

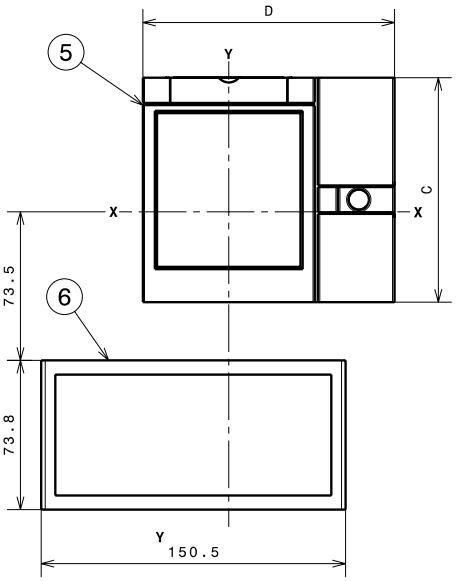
Tmax XT4 – Installation

Installation for withdrawable circuit-breaker

Drilling templates for support sheet



Flanges

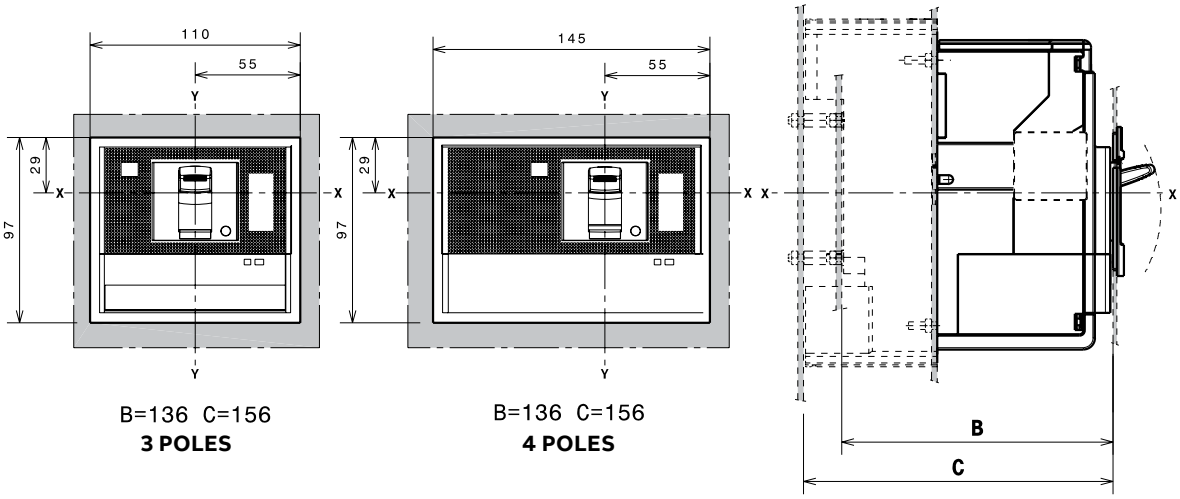


—
Key
5 Flange for circuit-breaker III-IV estraibile
6 Flange for circuit-breaker residual current IV withdeawable with front extended terminals

	C	D
RHD	111	124.5
FLD - MOE	114.3	134.5

Drilling templates compartment door

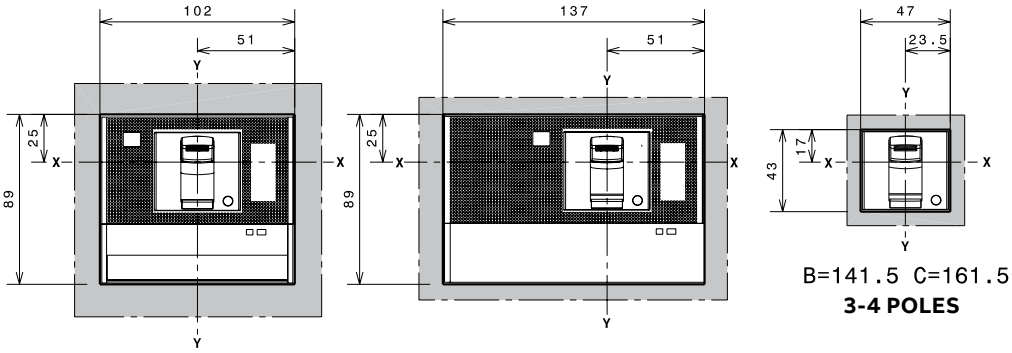
With standard flange



B=136 C=156
3 POLES

B=136 C=156
4 POLES

Without flange

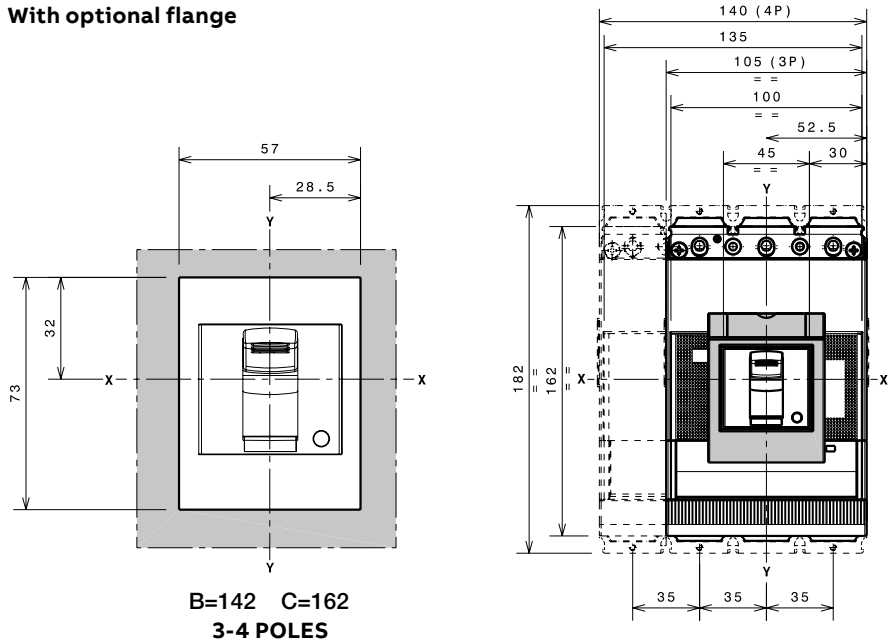


B=133.5 C=153.5
3 POLES

B=133.5 C=153.5
4 POLES

B=141.5 C=161.5
3-4 POLES

With optional flange

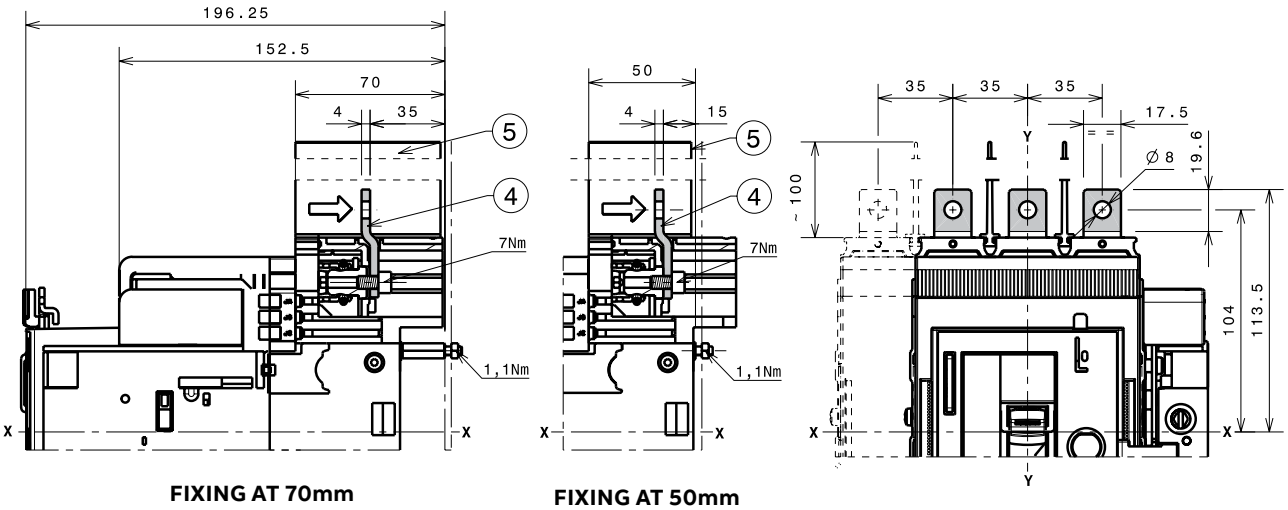


B=142 C=162
3-4 POLES

Tmax XT4 – Installation

Terminals for withdrawable circuit-breaker

Terminals EF



FIXING AT 70mm

FIXING AT 50mm

—

Key

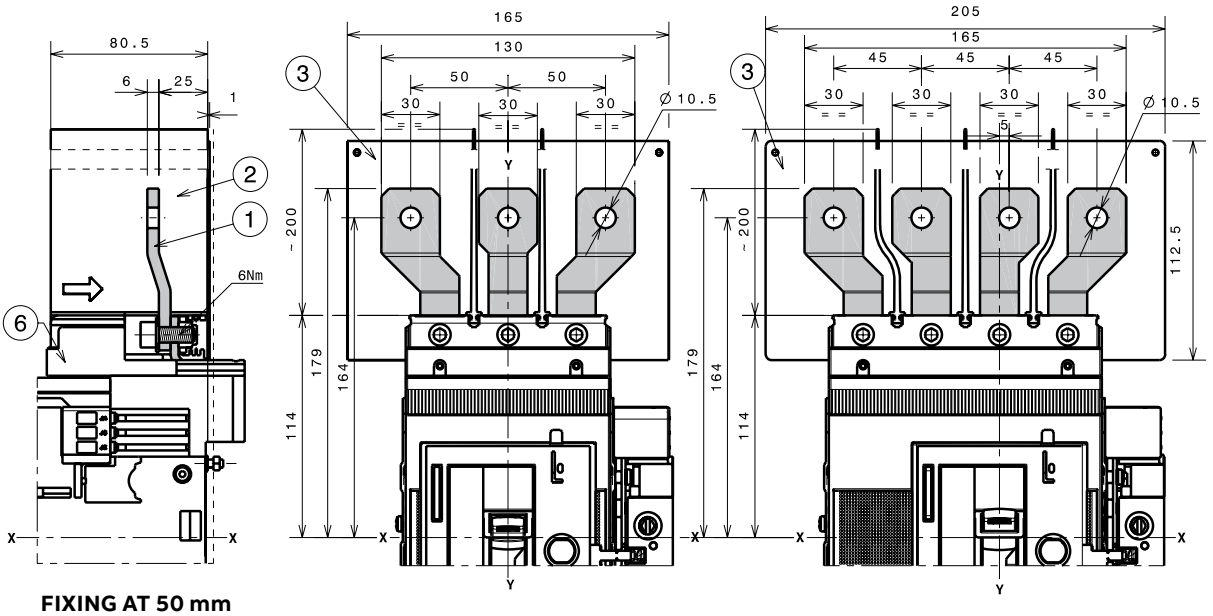
4 Front extended terminals

5 100mm insulating barriers between phases (compulsory) provided

—

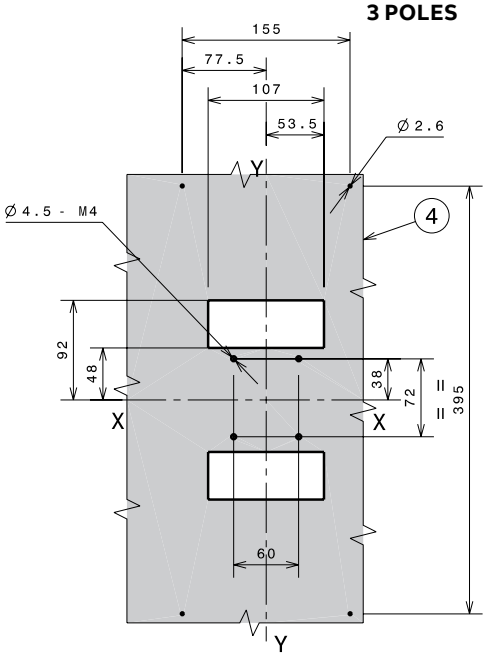
Note:
insulated plate
(copulsory)provided

Terminals ES

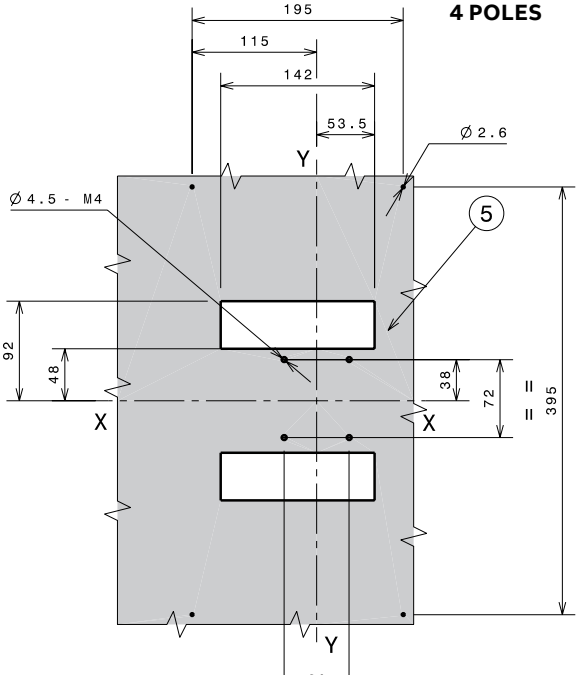


FIXING AT 50 mm

3 POLES



4 POLES



—

Key

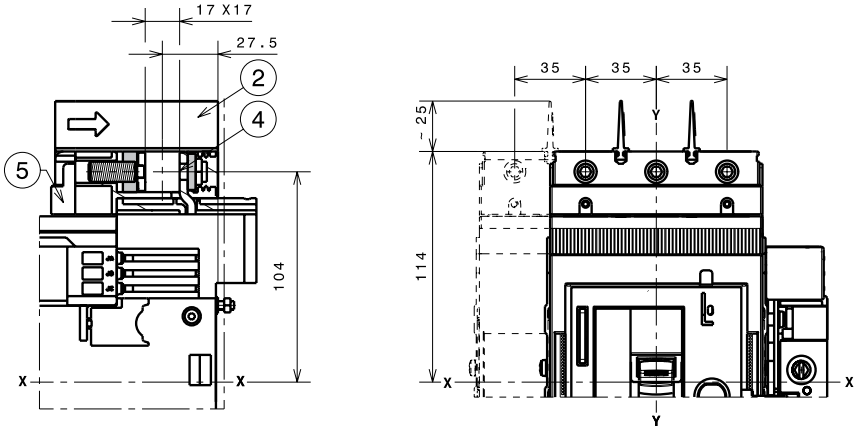
1 Front extended spread terminals
2 200mm insulating barriers between phases (compulsory) provided
3 Insulated plate provided compulsory for Ue>440V
4 Drilling template for 3p circuit-breaker
5 Drilling template for 4p circuit-breaker
6 Adaptor (compulsory) not provided

Tmax XT4 – Installation

Terminals for withdrawable circuit-breaker

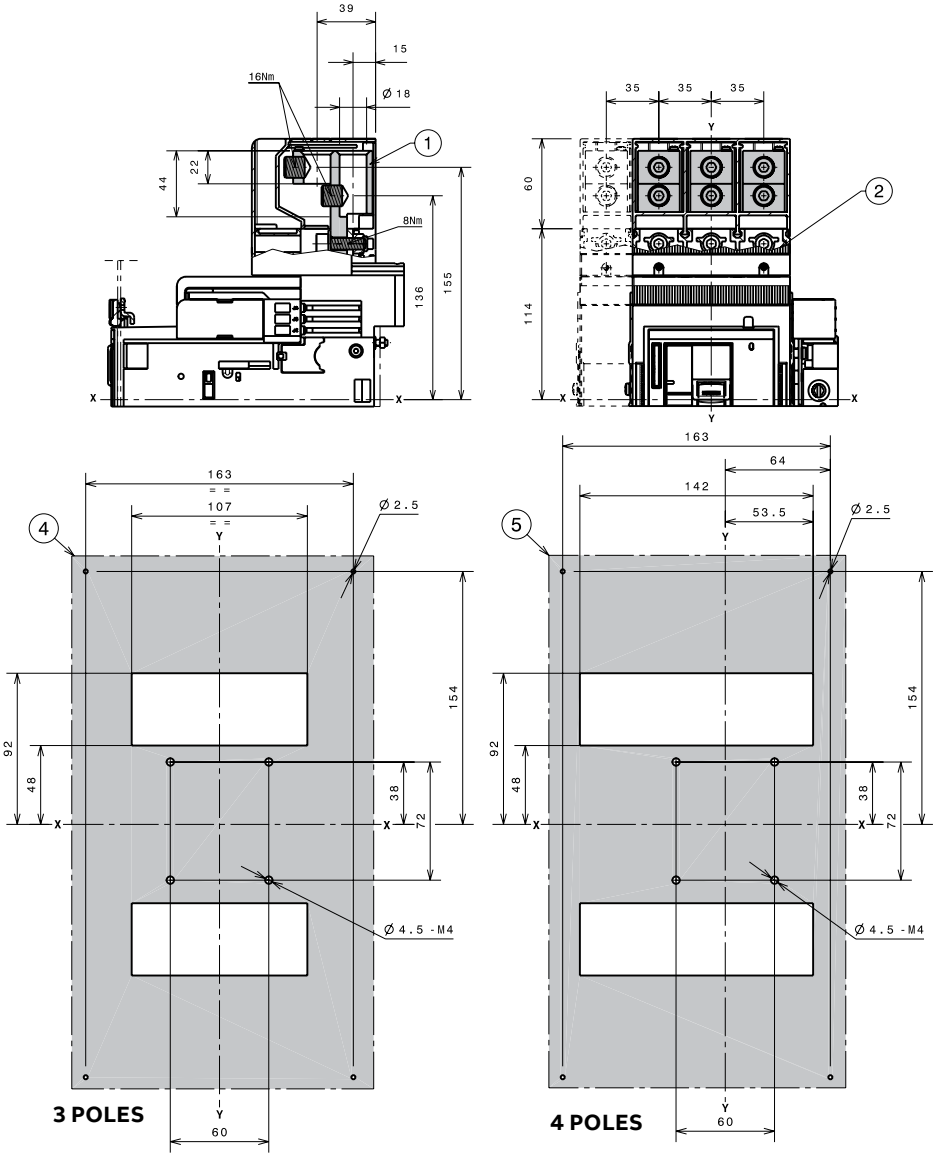
1x1...185mm² terminals FCCuAl

—
Key
2 25mm insulating barriers between phases (compulsory) provided
4 Front terminals FCCuAl
5 Adaptor (compulsory) not provided



FIXING AT 50 mm

2x35...150mm² terminals FCCuAl

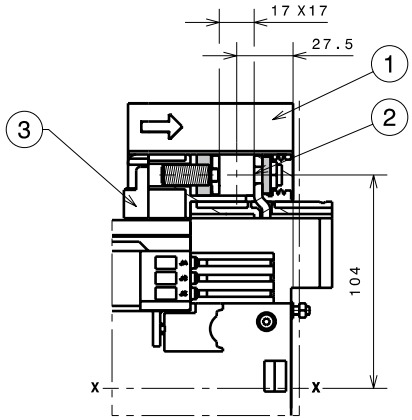


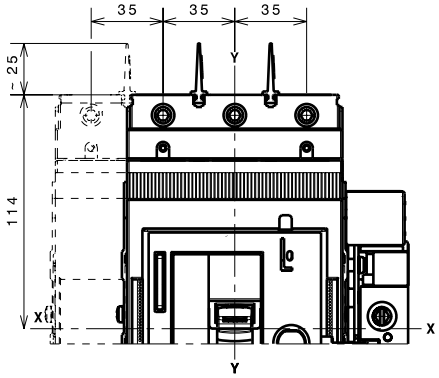
3 POLES **4 POLES**

—
Key
1 2x35...150mm² terminals FCCuAl
2 Terminal covers with degree of protection IP40 (optional) provided
3 Provided rear insulated plate (mandatory for CuAl 2x150mm² cables)
4 Drilling template for circuit-breaker III fixing with insulating courtes plate
5 Drilling template for circuit-breaker IV fixing with insulating courtes plate

Terminals FCCu

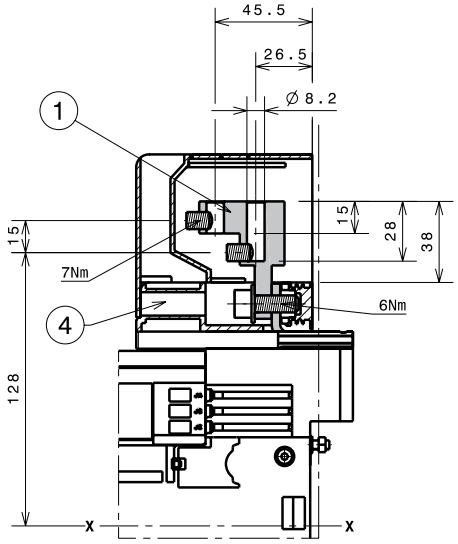
—
Key
1 25mm insulating barriers between phases (compulsory) provided as standard with the circuit-breaker
2 Terminals FCCu
3 Adaptor (compulsory) not provided

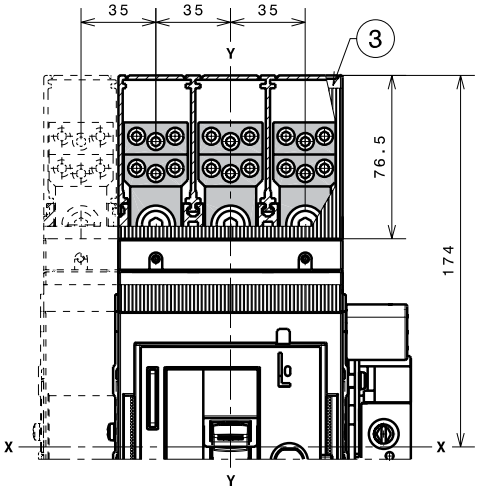




FIXING AT 50 mm

Terminals MC





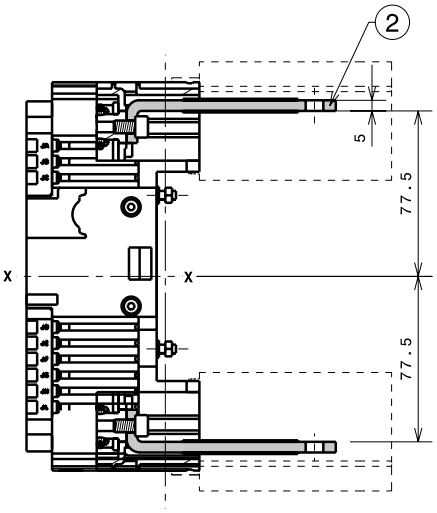
FIXING AT 50 mm

—
Key
1 Multicable terminals
3 High terminal covers with degree of protection IP40 (optional) provided
4 Adaptor (compulsory) not provided

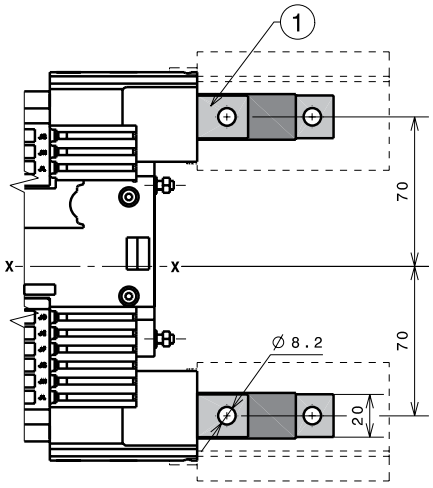
Tmax XT4 – Installation

Terminals for withdrawable circuit-breaker

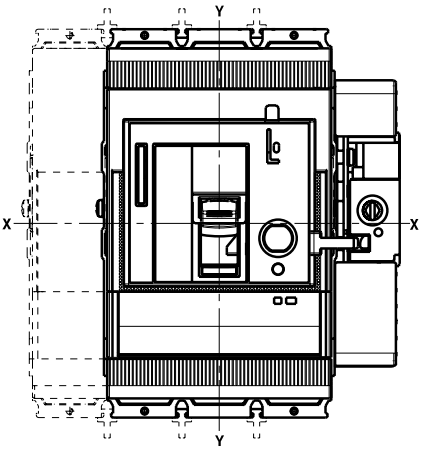
Terminals HR/VR

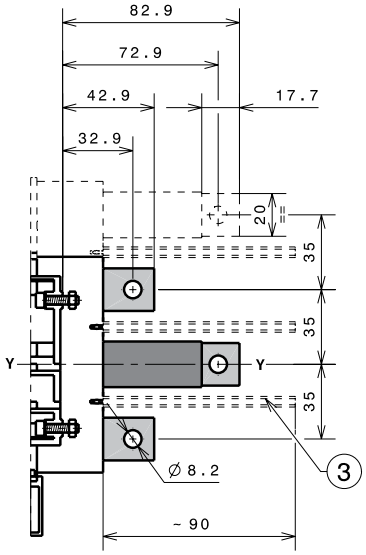


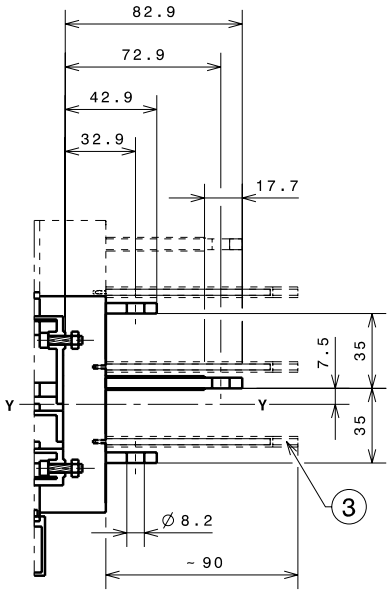
FIXING AT 50 mm



FIXING AT 50 mm







—

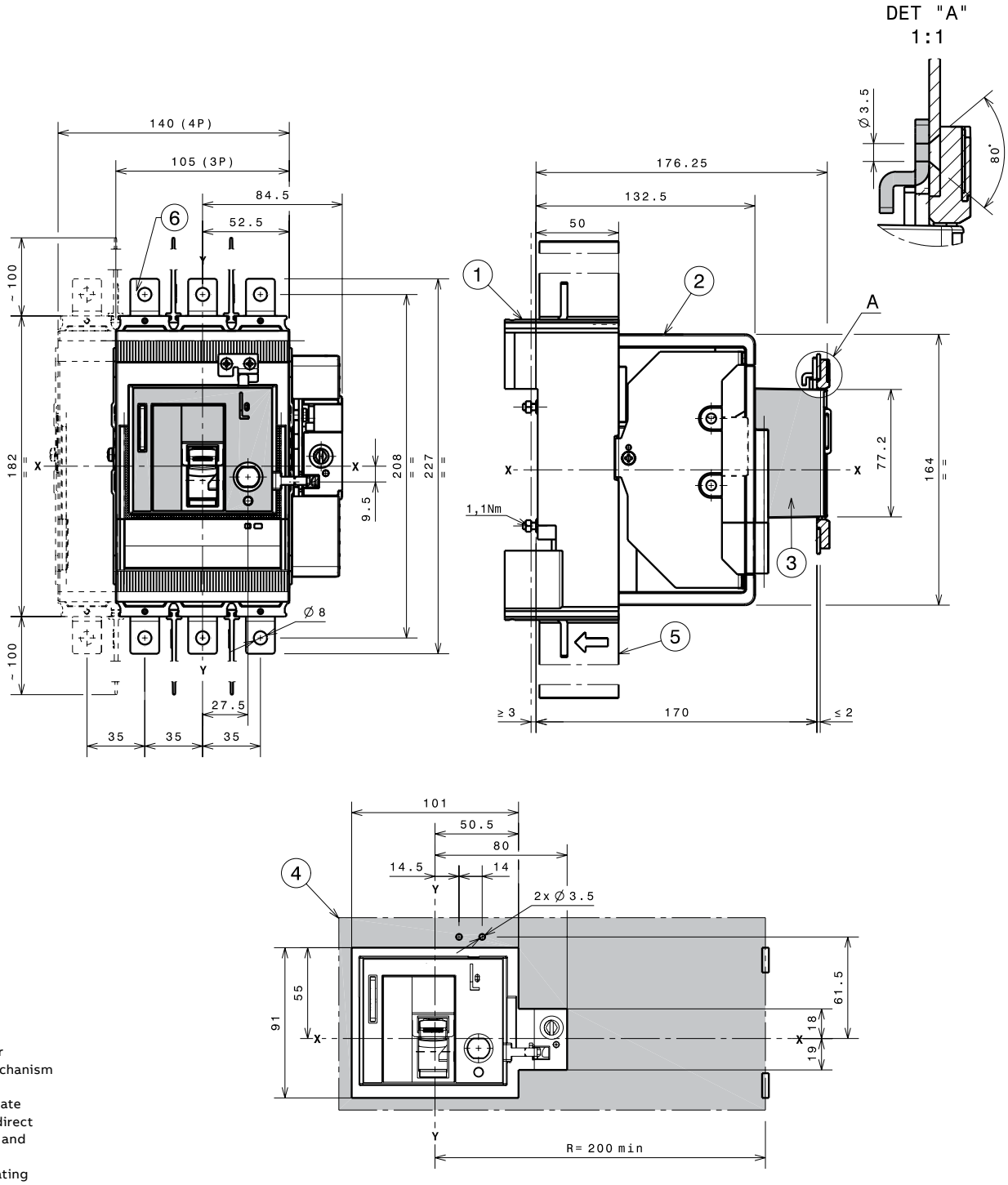
Key

1 Rear vertical terminals
2 Rear horizontal terminals
3 90mm insulating barriers between phases (compulsory) not provided

Tmax XT4 – Installation

Accessories for withdrawable circuit-breaker

Front for lever operating mechanism (FLD)



—

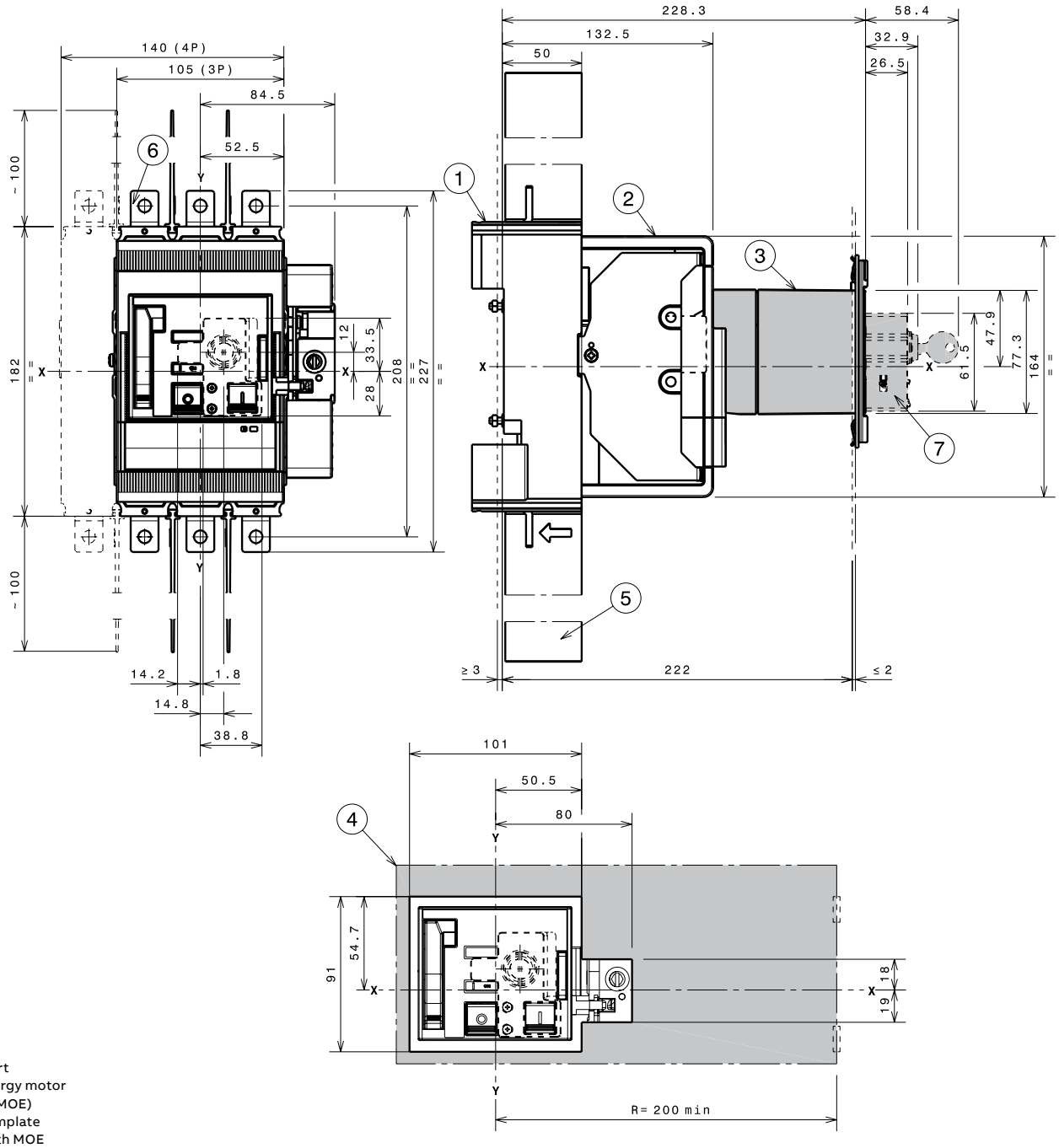
Key

1 Fixed part
2 Moving part
3 Front for lever operating mechanism FLD
4 Drilling template of door with direct rotary handle and fixed flange
5 100mm insulating barriers between phases (compulsory) provided
6 Extended terminals

Tmax XT4 – Installation

Accessories for withdrawable circuit-breaker

Stored energy motor operator (MOE)

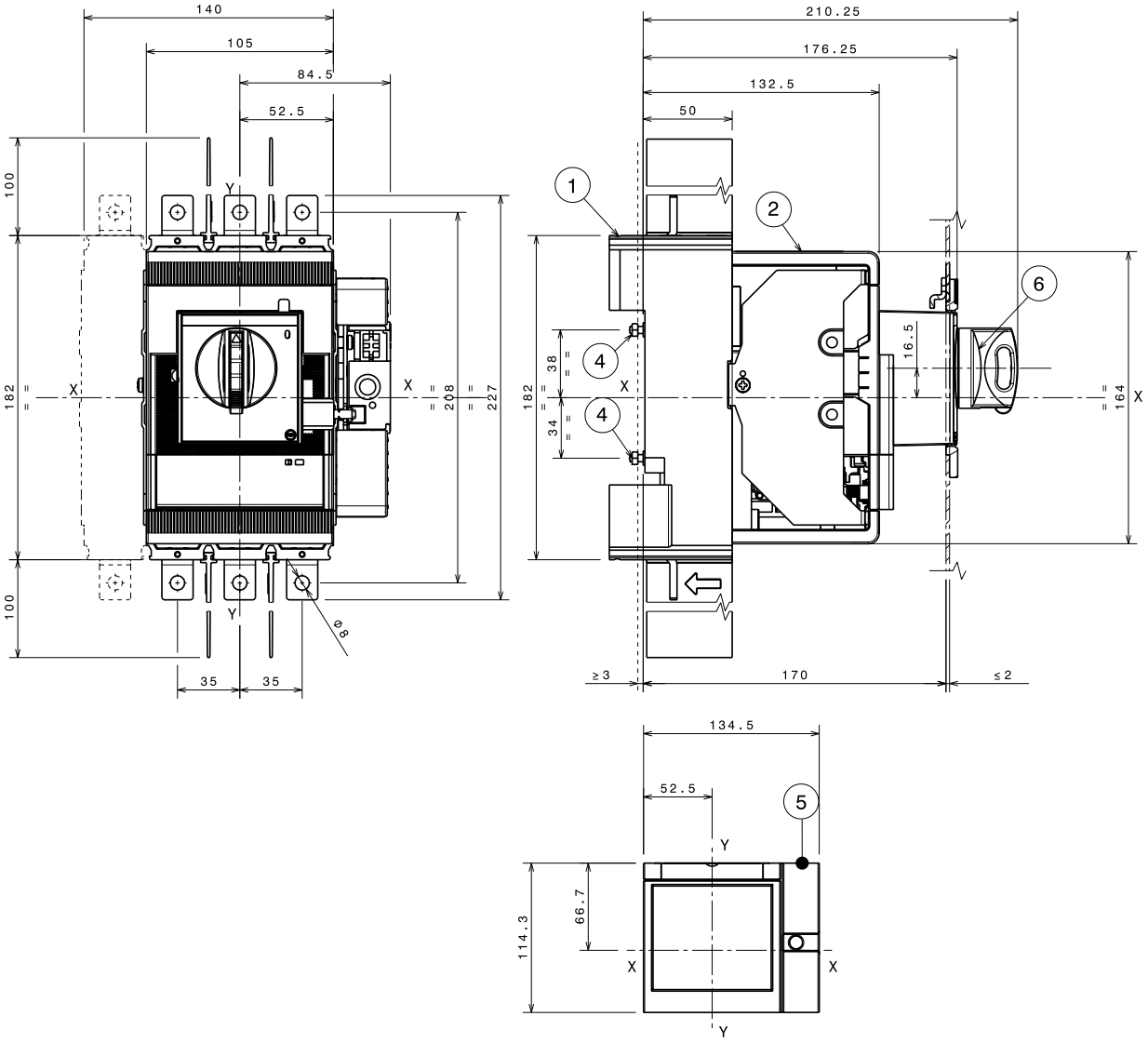


—

Key

1 Fixed part
2 Moving part
3 Stored energy motor operator (MOE)
4 Drilling template of door with MOE and fixing flange
5 100mm insulating barriers between phases (compulsory) provided
6 Extended terminals
7 Key lock optional

Rotary handle operating mechanism on circuit-breakers (RHD)



—

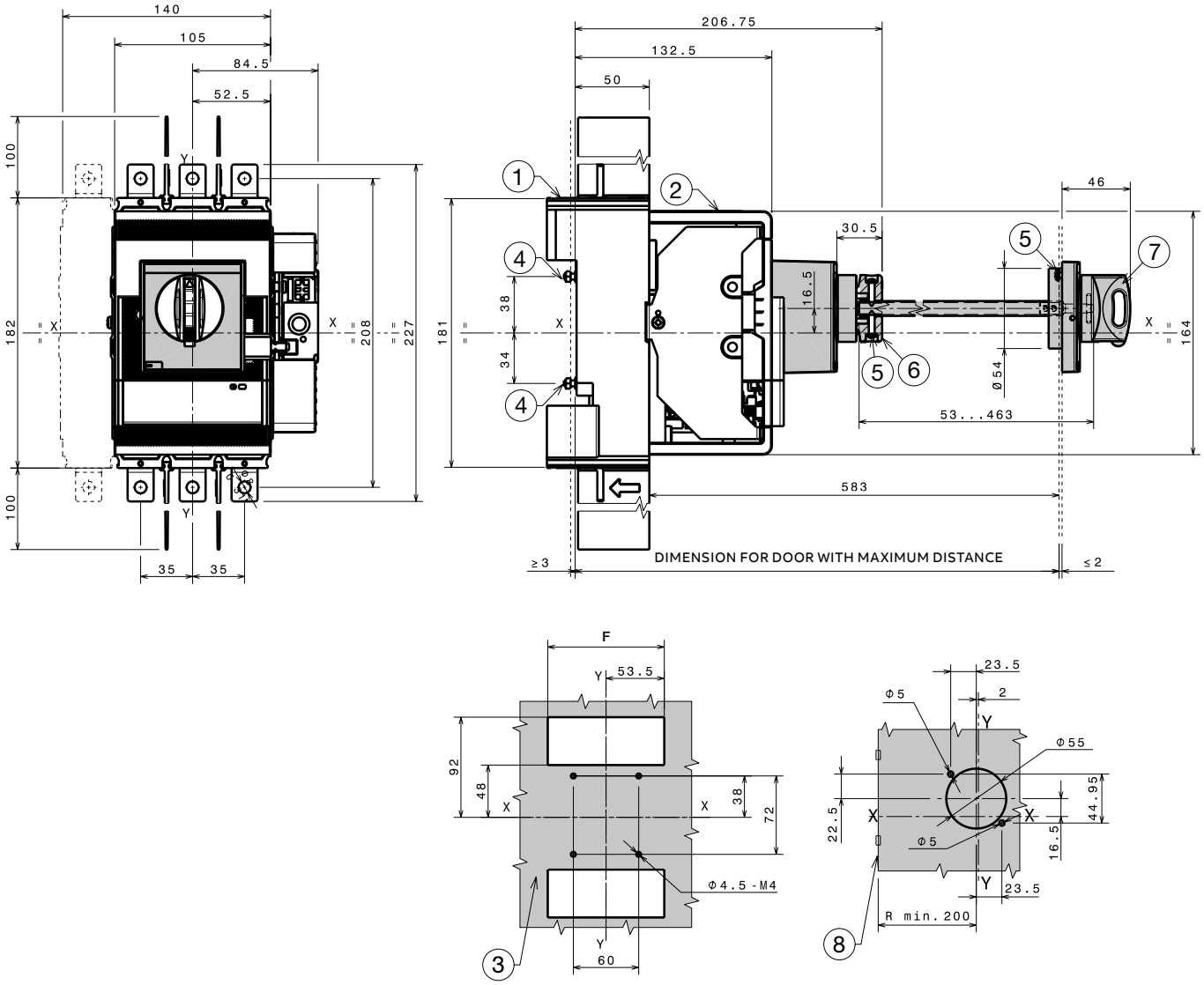
Key

1 Fixed part
2 Moving part
4 Tightening torque 1.1 Nm
5 Flange for the compartment door
6 Rotary handle operating mechanism for circuit-breaker

Tmax XT4 – Installation

Accessories for withdrawable circuit-breaker

Rotary handle operating mechanism on the compartment door (RHE)



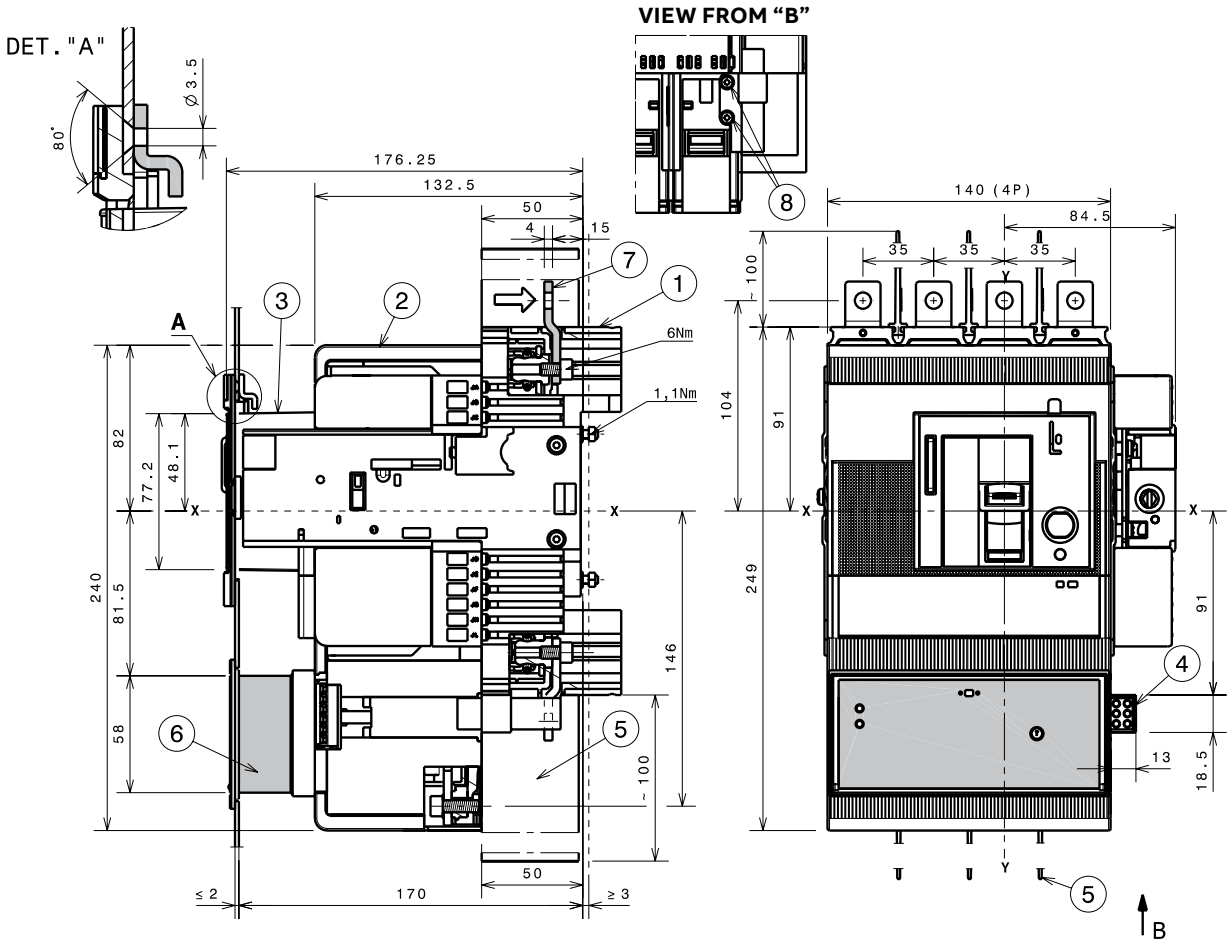
—

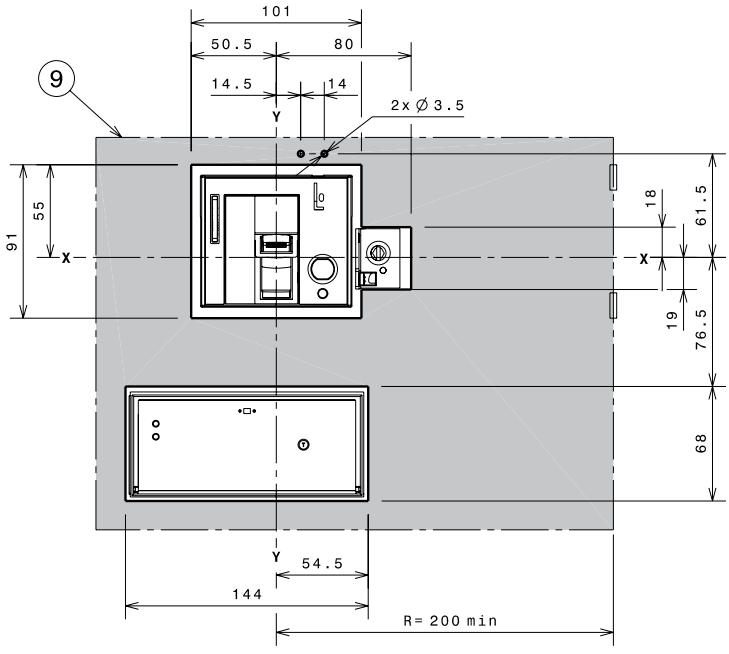
Key

1 Fixed part
2 Moving part
3 Shape for compartment door sheet steel drilling for fixed part
4 Tightening torque 1.1 Nm
5 Tightening torque 1.4 Nm
6 Transmission mechanism
7 Rotary handle operating mechanism for compartment door
8 Compartment door sheet steel drilling

	F
Fixing 3 poles	107
Fixing 4 poles	142

Residual current RC Sel 4 poles





—

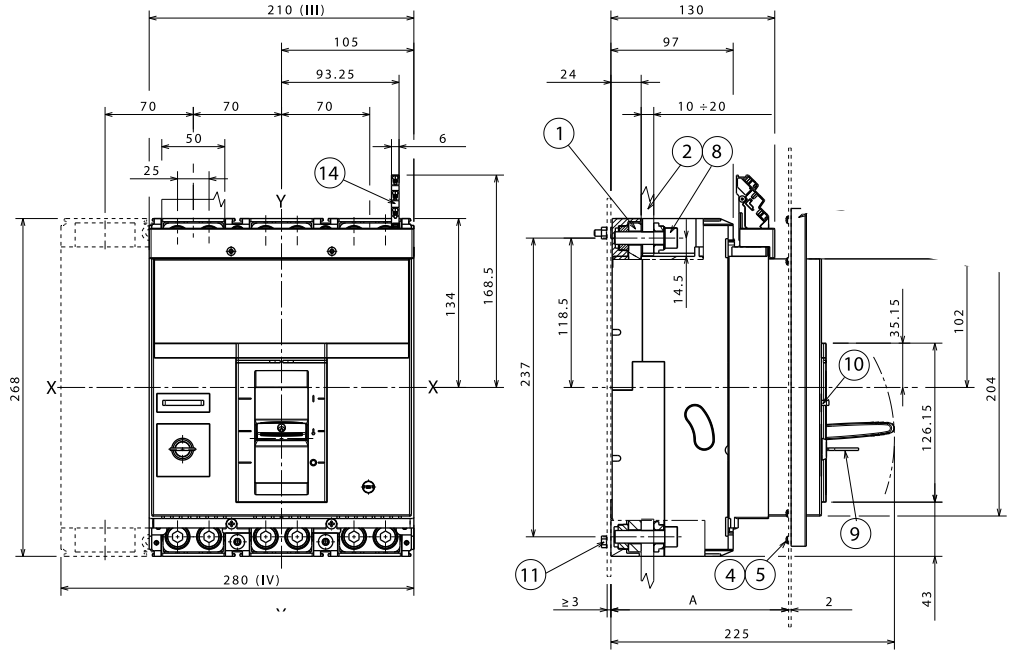
Key

1 Fixed part
2 Moving part
3 Front for lever operating mechanism
4 Connector residual current (optional)
5 100mm insulating barriers between phases (compulsory) provided
6 Residual current
7 Extended terminals
8 Fixing screws for fixed part of connector
9 Drilling template of door with direct rotary handle and fixed flange

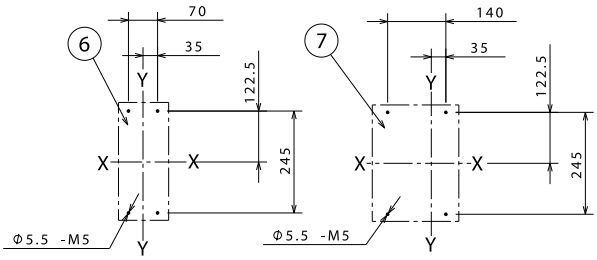
Tmax XT7 – Installation

Installation for fixed circuit-breaker

Fixing on sheet



Drilling templates for support sheet

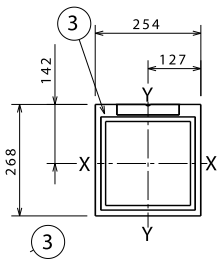


—

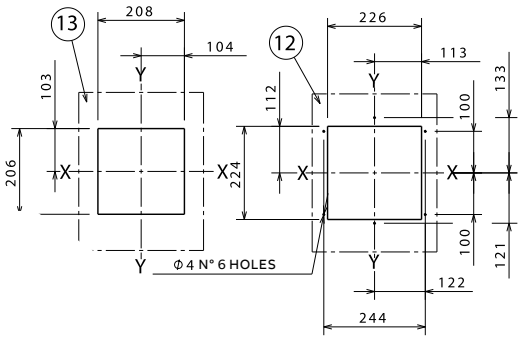
Key

1 Front terminals for flat connection
2 Extended front terminals
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5 Nm - 4.4 lbs in
6 Fixing on sheet steel III
7 Fixing on sheet steel IV
8 Tightening torque 18 Nm - 159 lbs in
9 Key look (optional)
10 Padlock device (optional)
11 Tightening torque 2 Nm - 18 lbs in
12 Compartment door sheet steel drilling for flange
13 Compartment door sheet steel drilling for 206x204 frontal
14 Clamp for auxiliary contacts

Flange



Drilling templates compartment door

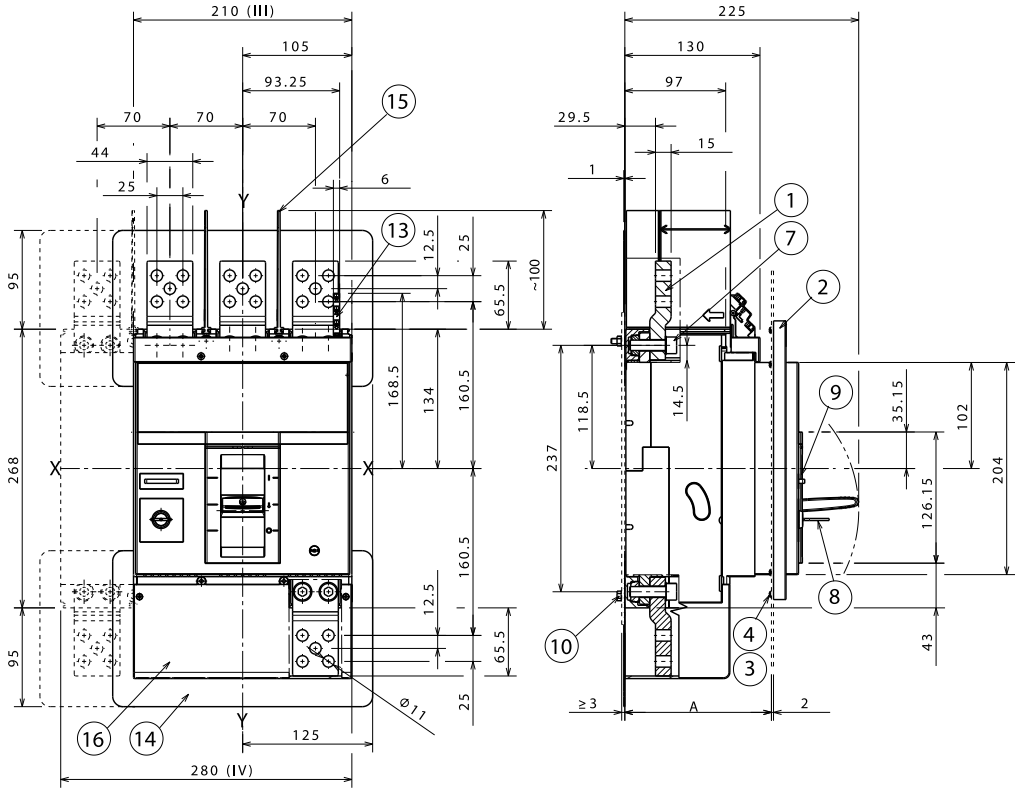


Tmax XT7 – Installation

Terminals for fixed circuit-breaker

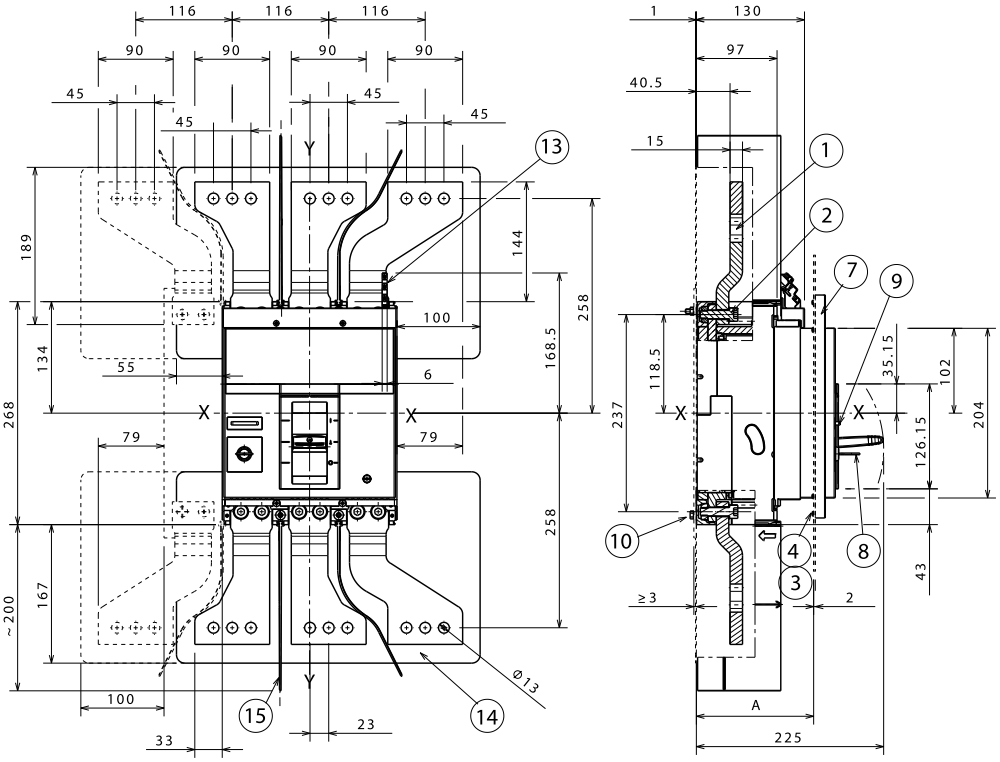
Terminals EF

Key
1 Extended front terminals EF
2 Flange for the compartment door
3 Flange fixing screws
4 Tightening torque 0.5 nm - 4.4 lbs in
7 Tightening torque 18 nm - 159 lbs in
8 Key look (optional)
9 Padlock device (optional)
10 Tightening torque 2 Nm - 18 lbs in
13 Clamp for auxiliary contacts
14 Insulating plate
15 Separating partitions 100mm
16 High terminal cover with ip40 protection degree



Terminals ES

Key
1 Spreadead extended front terminals ES
2 Flange for the compartment door
3 Flange fixing screws
4 Tightening torque 0.5 nm - 4.4 lbs in
7 Tightening torque 18 nm - 159 lbs in
8 Key look (optional)
9 Padlock device (optional)
10 Tightening torque 2 Nm - 18 lbs in
13 Clamp for auxiliary contacts
14 Insulating plate
15 Separating partitions 200mm

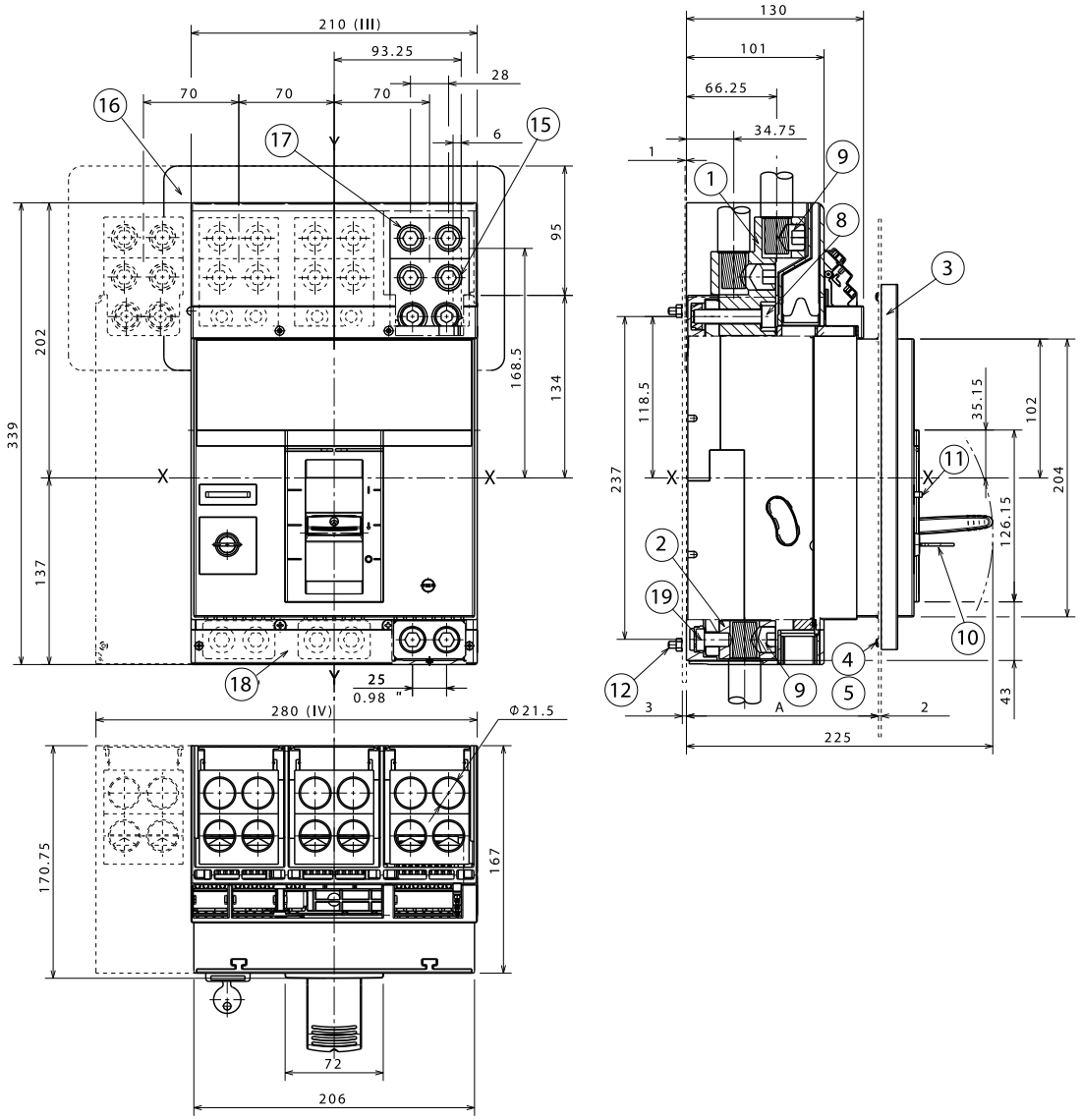


Tmax XT7 – Installation

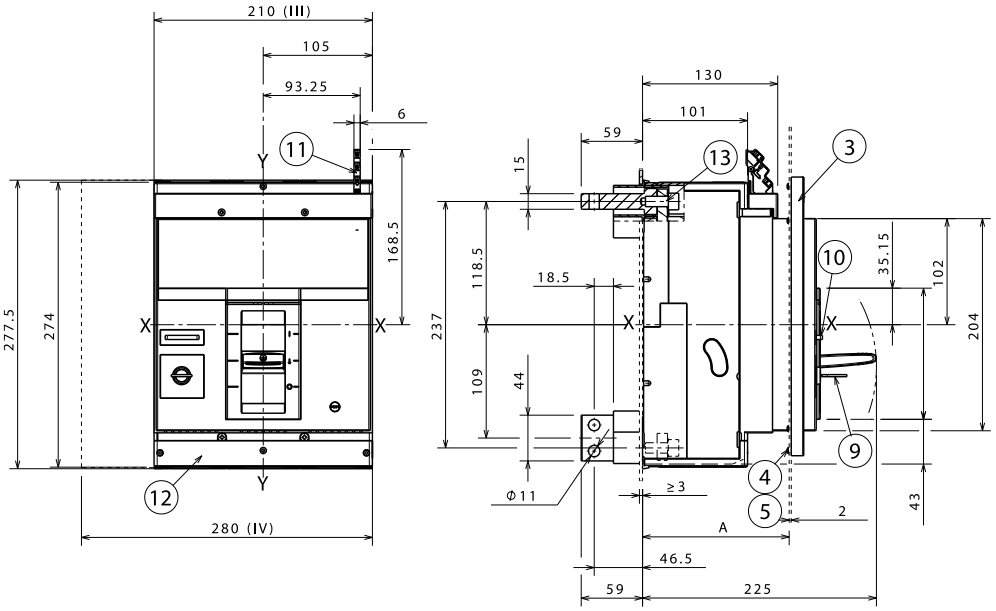
Terminals for fixed circuit-breaker

4 x 240mm² and 2 x 240mm² FC CuAl

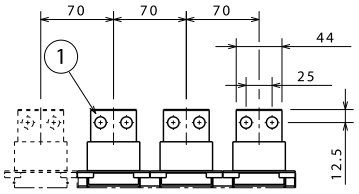
Key
1 Fc Cu-Al terminal 4x240mm²
2 Fc Cu-Al terminal 2x240mm²
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5 Nm - 4.4 lbs in
8 Tightening torque 18 Nm - 159 lbs in
9 Tightening torque 43 Nm - 380 lbs in
10 Key look (optional)
11 Padlock device (optional)
12 Tightening torque 2 Nm - 18 lbs in
15 Clamp for auxiliary contacts
16 Insulating plate
17 High terminal cover with IP40 protection degree
18 Low protection cover with IP30 protection degree
19 Tightening torque 18 Nm - 159 lbs in



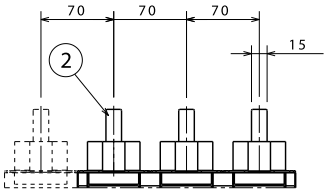
Terminals R

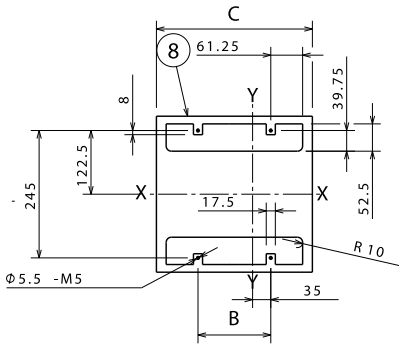


Terminals HR upper



Terminals VR lower





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Key

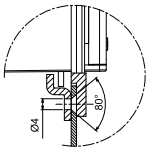
1 HR horizontal rear terminal HR
2 VR vertical rear terminal VR
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5 Nm - 4.4 lbs in
8 Drilling template support plate
9 Key lock (optional)
10 Padlock (optional)
11 Clamp for auxiliary contacts
12 Low protection cover with IP30 protection degree
13 Tightening torque 9 Nm - 79.6 lbs in

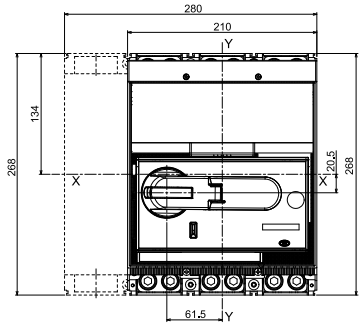
	III	IV
B	70	140
C	192.5	262.5

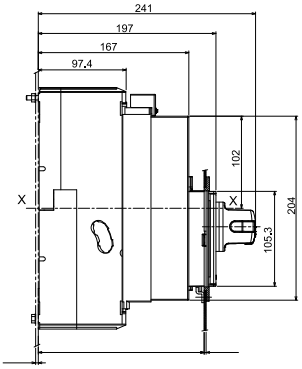
Tmax XT7 – Installation

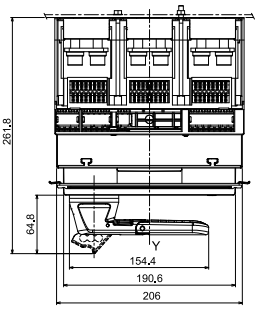
Accessories for fixed circuit-breaker

Rotary handle operating mechanism on the circuit-breaker (RHD)

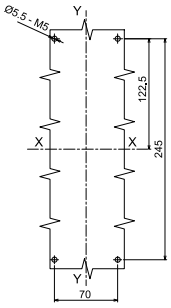


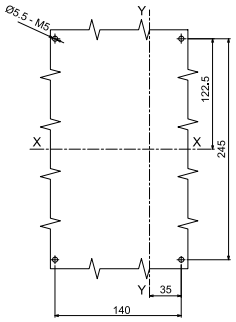




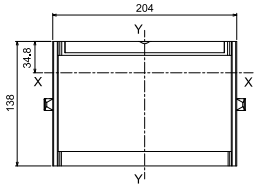


Drilling templates for support sheet

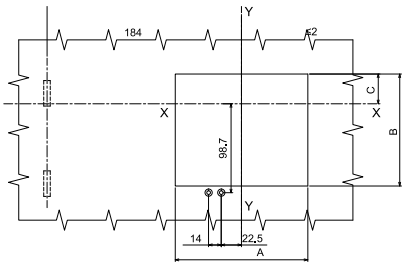




Flange

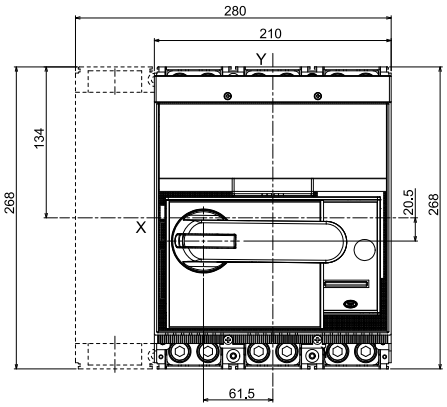


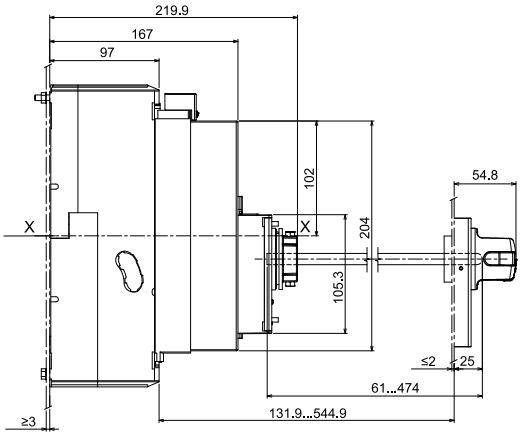
Drilling template compartment door

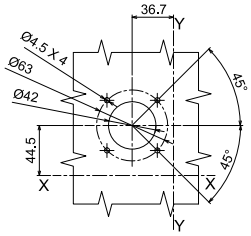


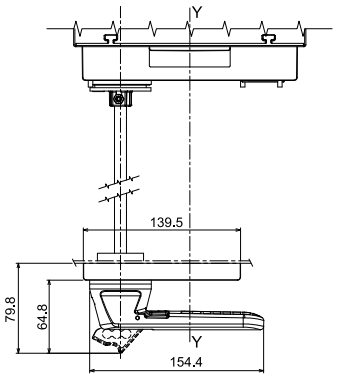
	A	B	C
With flange	201	116	24.25
Without flange	192	107	19.75

Rotary handle operating mechanism on the compartment door (RHE)





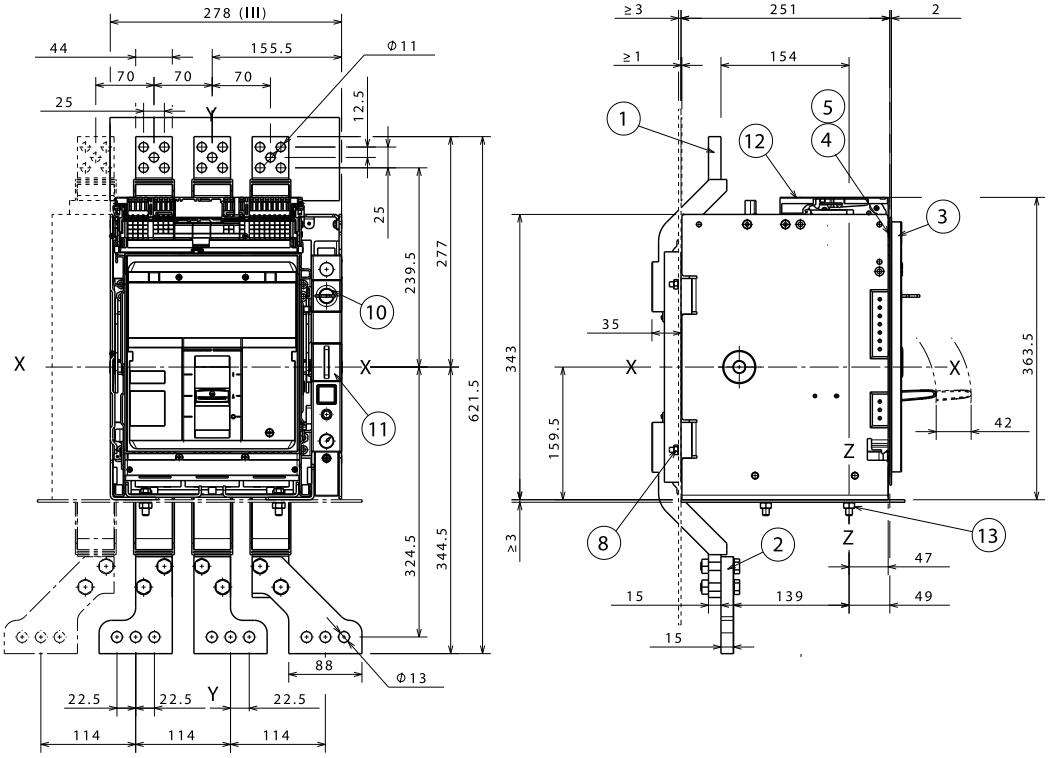




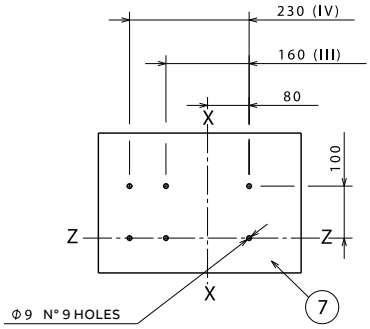
Tmax XT7 – Installation

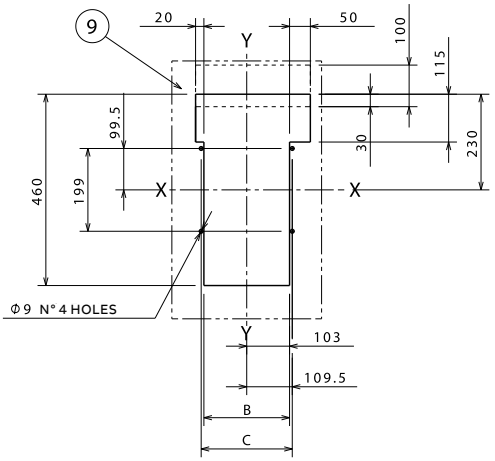
Installation for withdrawable circuit-breaker

Fixing on sheet

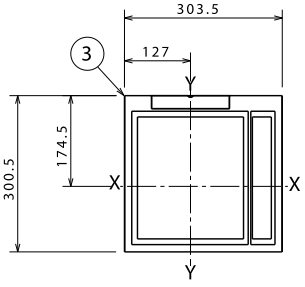


Drilling templates for support sheet

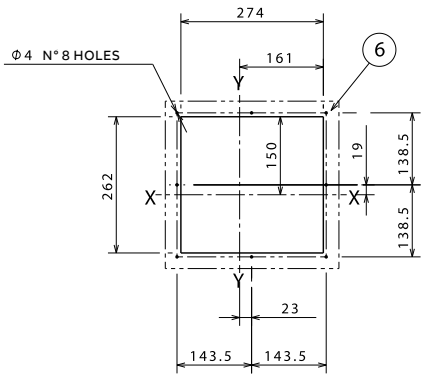




Flange



Drilling template compartment door



—

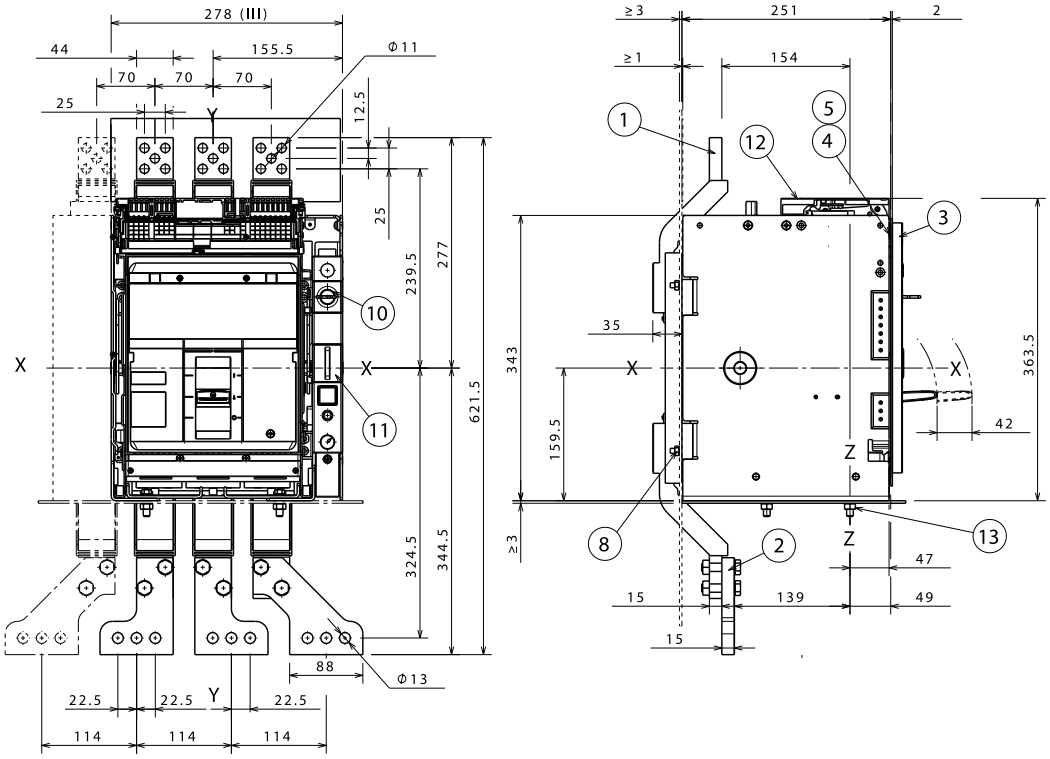
Key

1 EF front terminal
2 ES front terminal
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5 Nm - 4.4 lbs in
6 Compartment door sheet steel drilling for flange
7 Fixing on sheet steel drilling template
8 Tightening torque 9 Nm - 79.6 lbs in
9 Mounting at wall
10 Key lock (optional)
11 Padlock (optional)
12 Clamp for auxiliary contacts
13 Tightening torque 9 Nm - 79.6 lbs in

Tmax XT7 – Installation

Terminals for withdrawable circuit-breaker

Terminals EF and ES



—

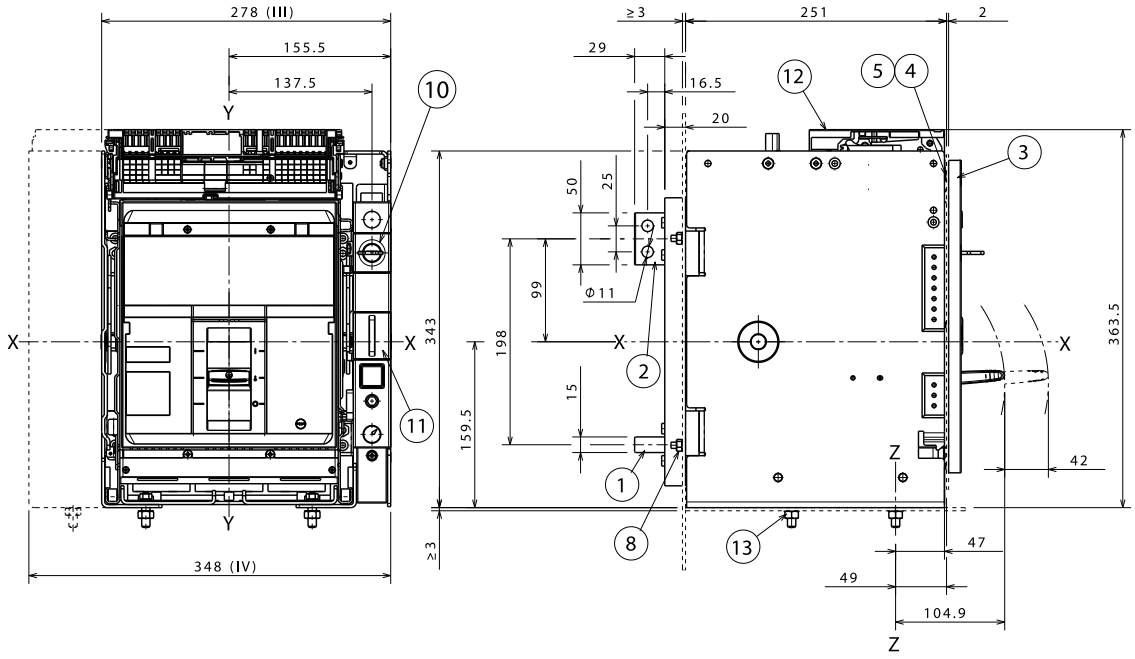
Key

1 EF front terminal
2 ES front terminal
4 Flange fixing screws
5 Tightening torque 0.5 Nm - 4.4 lbs in
8 Tightening torque 9 Nm - 79.6 lbs in
10 Key lock (optional)
11 Padlock (optional)
12 Clamp for auxiliary contacts
13 Tightening torque 9 Nm - 79.6 lbs in

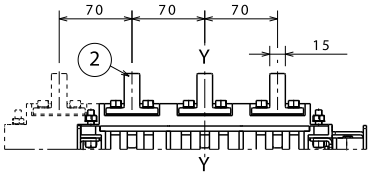
Tmax XT7 – Installation

Terminals for withdrawable circuit-breaker

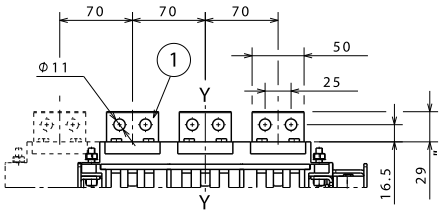
Terminals R



Terminals VR upper

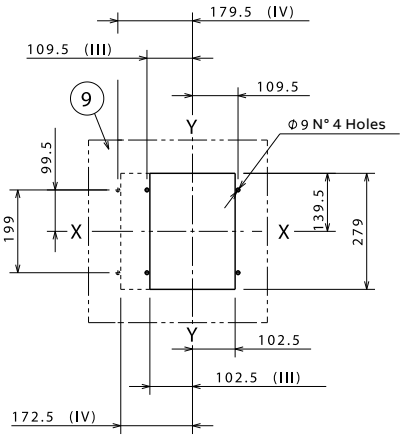


Terminals HR lower

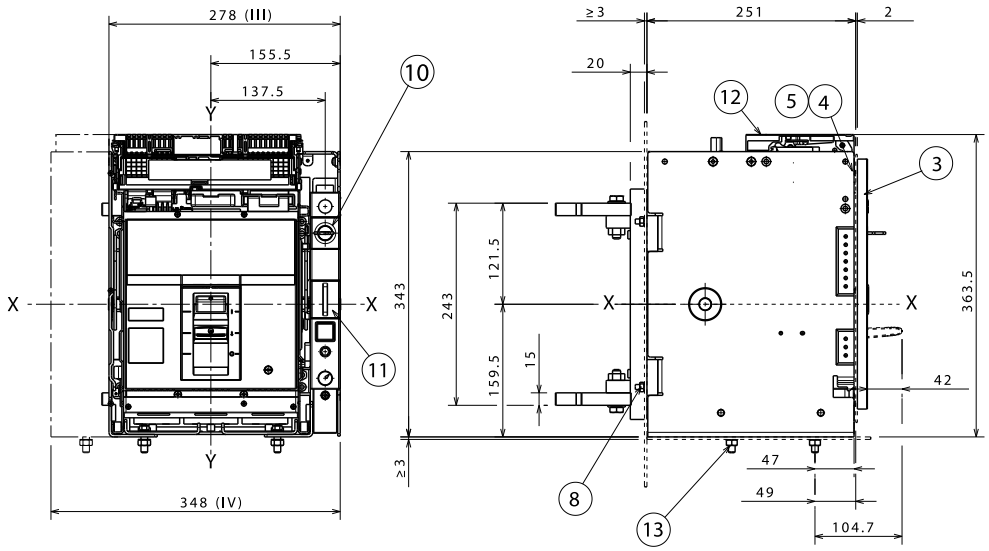


Key

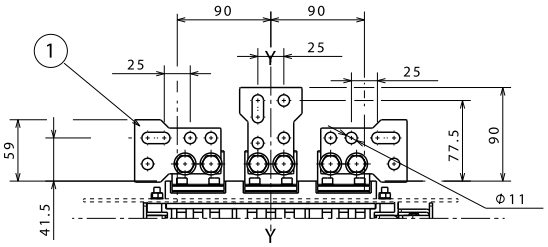
1 HR horizontal rear terminal HR
2 VR vertical rear terminal VR
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5 Nm - 4.4 lbs in
8 Tightening torque 9 Nm - 79.6 lbs in
9 Mounting at wall
10 Key lock (optional)
11 Padlock (optional)
12 Clamp for auxiliary contacts
13 Tightening torque 9 Nm - 79.6 lbs in



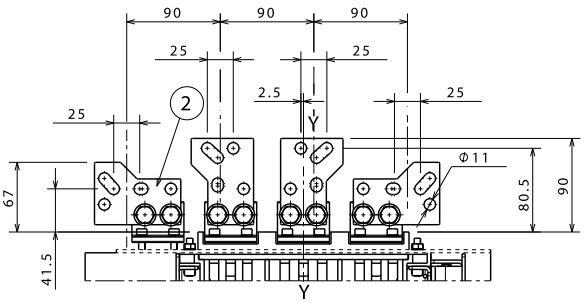
Terminals SHR

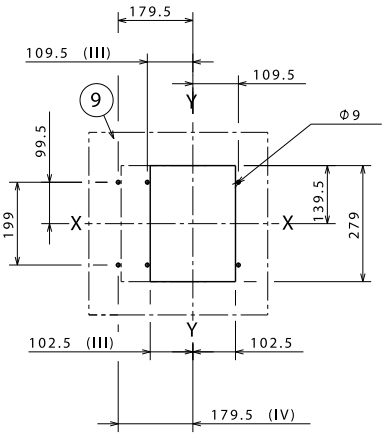


Terminals VR upper



Terminals HR lower





—

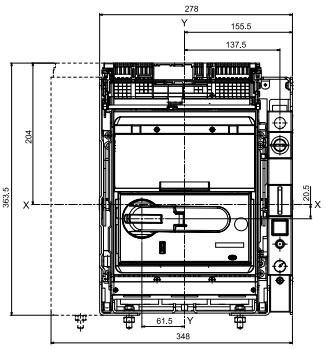
Key

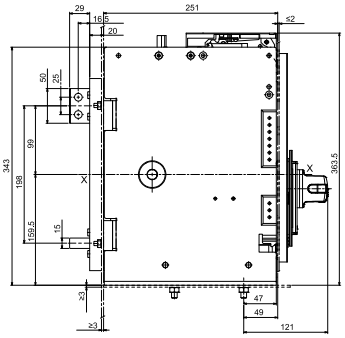
1 SHR rear side terminals (III)
2 SHR rear side terminals (IV)
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5 Nm - 4.4 lbs in
8 Tightening torque 9 Nm - 79.6 lbs in
9 Mounting at wall
10 Key lock (optional)
11 Padlock (optional)
12 Clamp for auxiliary contacts
13 Tightening torque 9 Nm - 79.6 lbs in

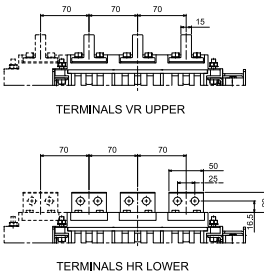
Tmax XT7 – Installation

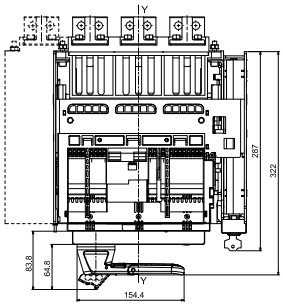
Accessories for withdrawable circuit-breaker

Rotary handle operating mechanism on the circuit-breaker (RHD)

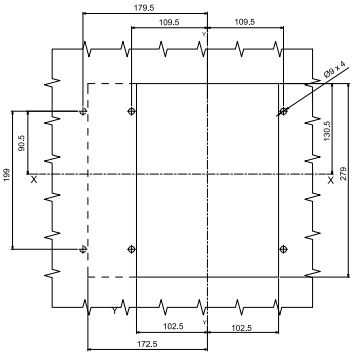


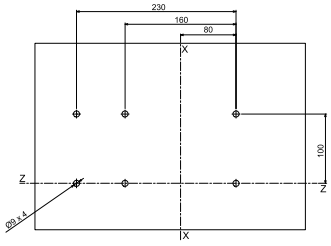




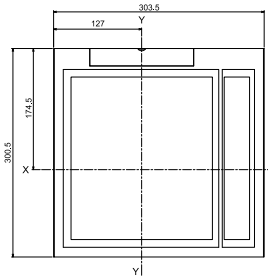


Drilling templates for support sheet

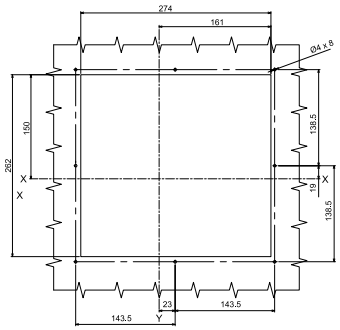




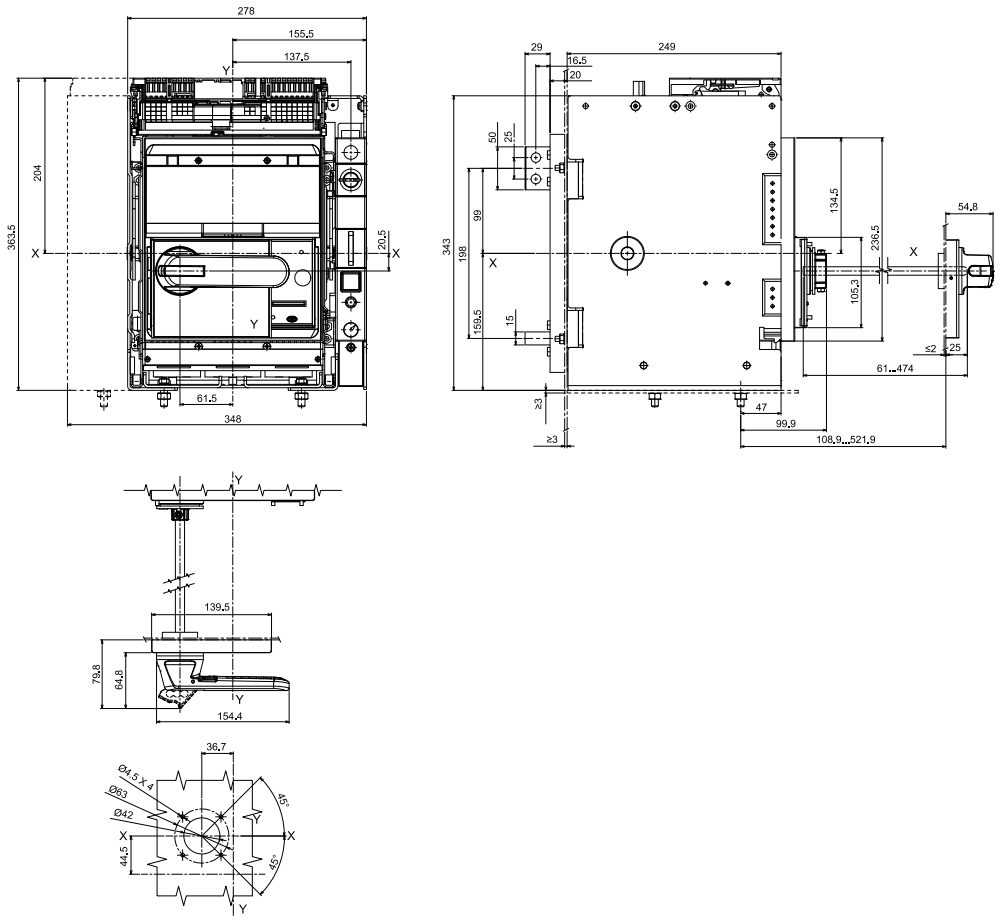
Flange



Drilling template compartment door



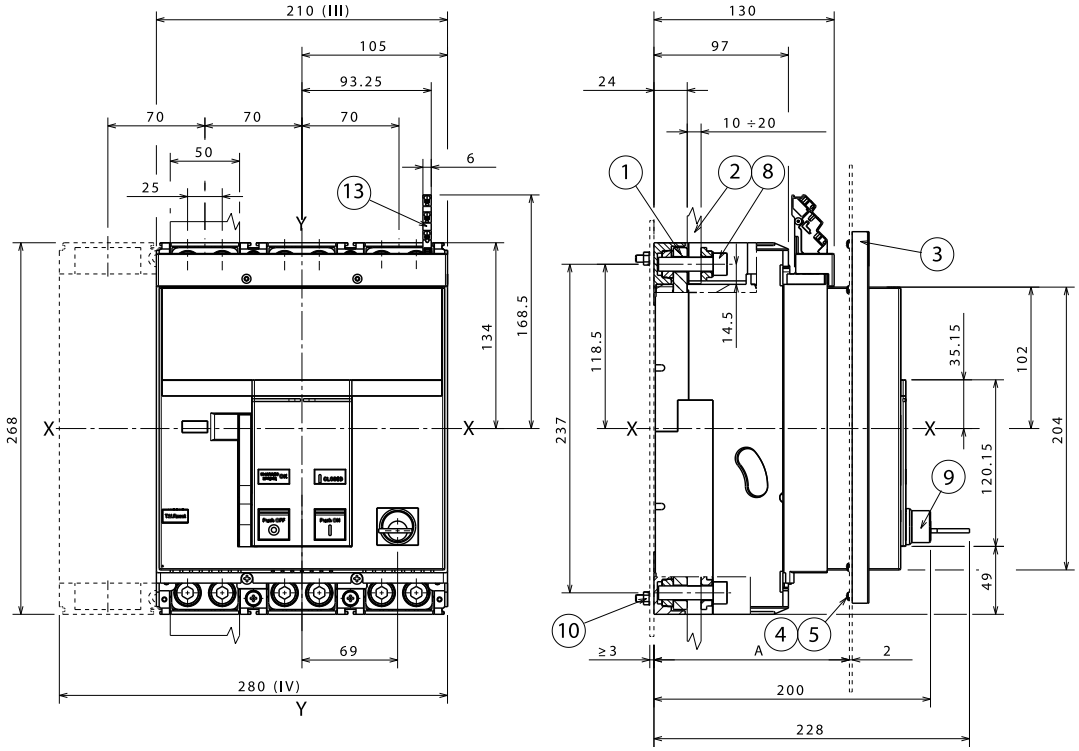
Rotary handle operating mechanism on the compartment door (RHE)



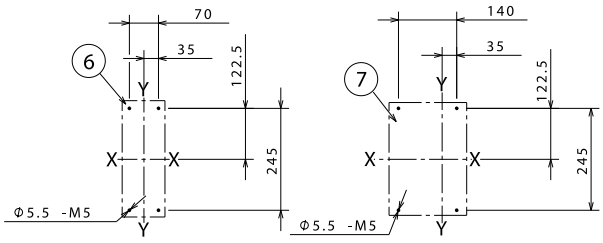
Tmax XT7 M – Installation

Installation for fixed circuit-breaker

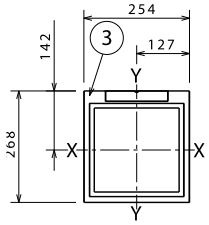
Fixing on sheet



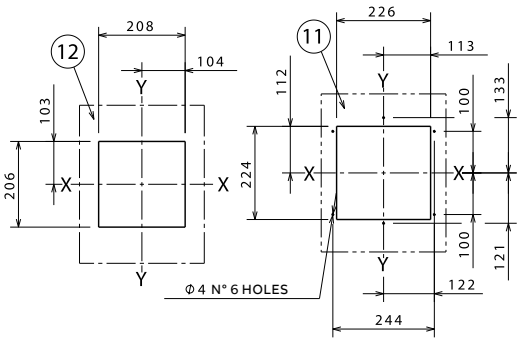
Drilling templates for support sheet



Flange



Drilling templates compartment door



Key

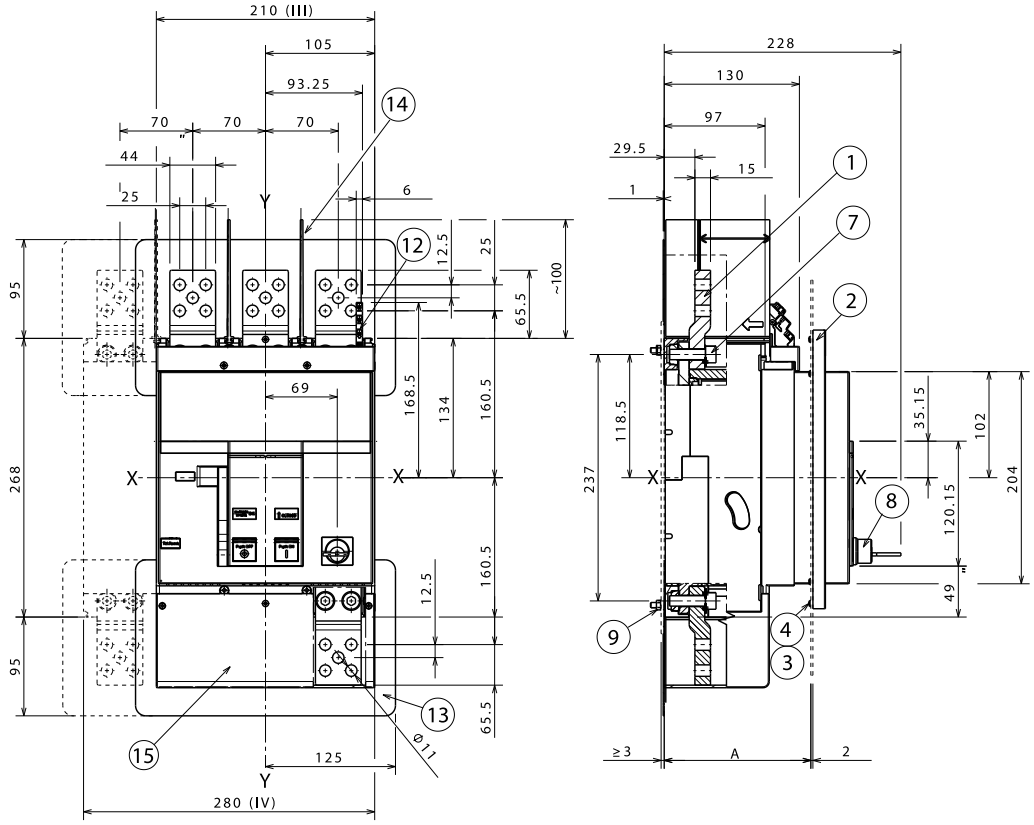
1 Front terminals for flat connection
2 Extended front terminals
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5 Nm - 4.4 lbs in
6 Fixing on sheet steel III
7 Fixing on sheet steel IV
8 Tightening torque 18 Nm - 159 lbs in
9 Key look (optional)
10 Tightening torque 2 Nm - 18 lbs in
11 Compartment door sheet steel drilling for flange
12 Compartment door sheet steel drilling for 206x204 frontal
13 Clamp for auxiliary contacts

Tmax XT7 M – Installation

Terminals for fixed circuit-breaker

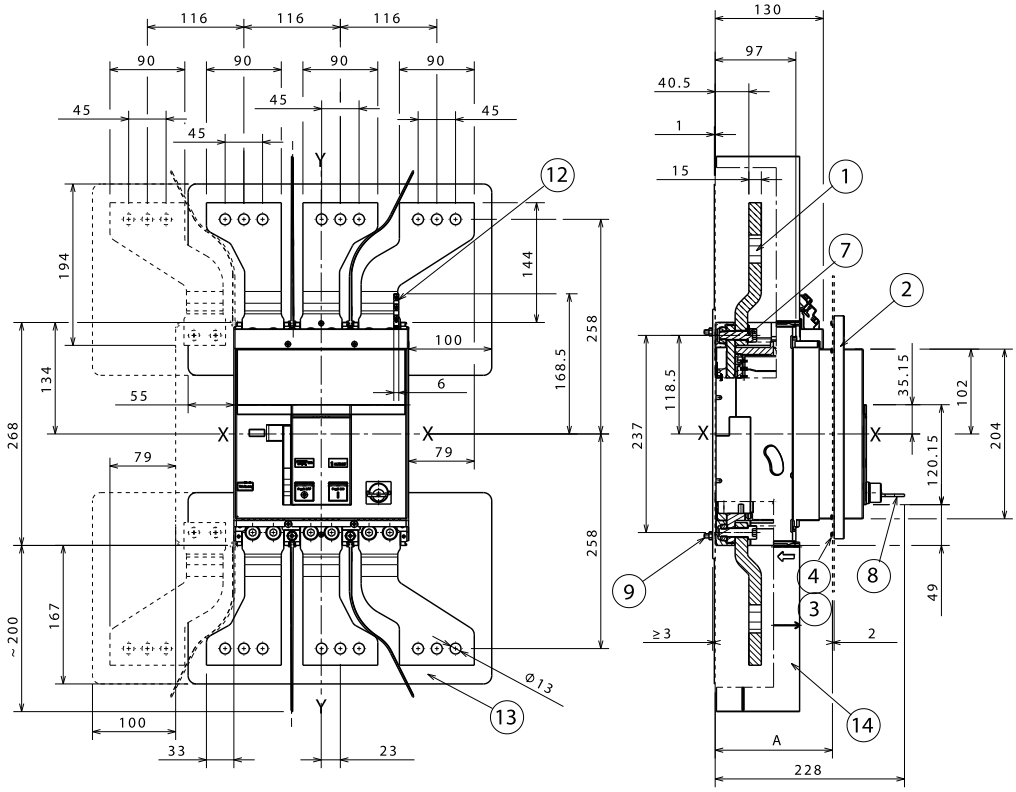
Terminals EF

Key
1 Extended front terminals EF
2 Flange for the compartment door
3 Flange fixing screws
4 Tightening torque 0,5 Nm - 4,4 lbs in
7 Tightening torque 18 Nm - 159 lbs in
8 key look (optional)
9 Tightening torque 2Nm - 18 lbs in
12 Clamp for auxiliary contacts
13 Insulating plate
14 Separating partitions 100mm
15 High terminal cover with IP40 protection degree



Terminals ES

Key
1 Spreadead extended front terminals ES
2 Flange for the compartment door
3 Flange fixing screws
4 Tightening torque 0.5 Nm - 4.4 lbs in
7 Tightening torque 18 Nm - 159 lbs in
8 Key look (optional)
9 Tightening torque 2 Nm - 18 lbs in
12 Clamp for auxiliary contacts
13 Insulating plate

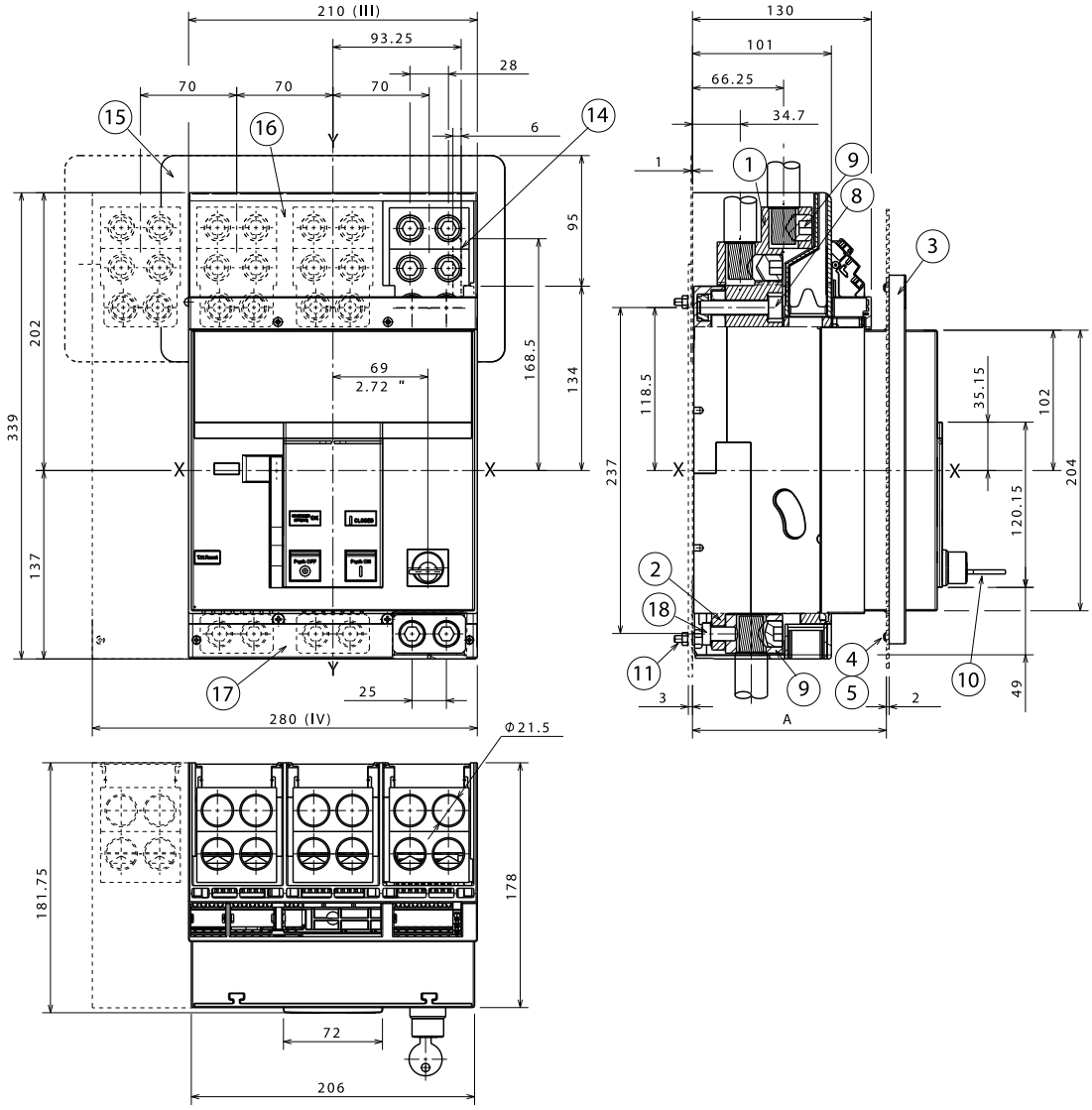


Tmax XT7 M – Installation

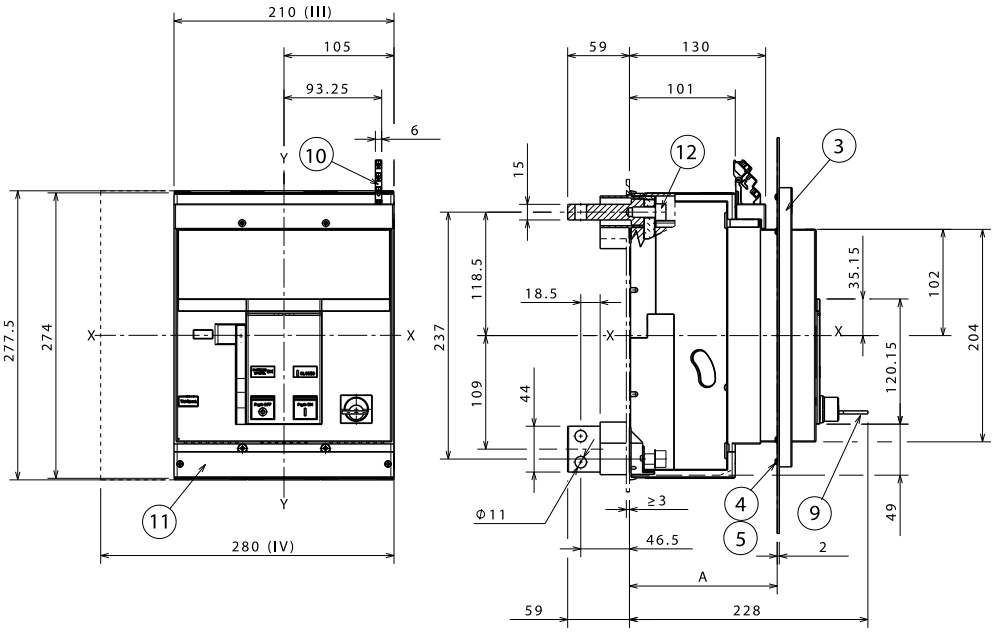
Terminals for fixed circuit-breaker

4 x 240mm² and 2 x 240mm² FC CuAl

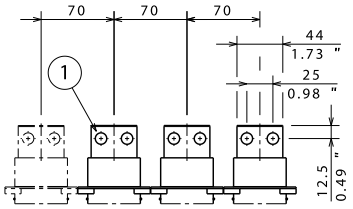
Key
1 Fc Cu-Al terminal 4x240mm²
2 Fc Cu-Al terminal 2x240mm²
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5 Nm - 4.4 lbs in
8 Tightening torque 18 Nm - 159 lbs in
9 Tightening torque43 Nm - 380 lbs in
10 Key look (optional)
11 Tightening torque 2 Nm - 18 lbs in
14 Clamp for auxiliary contacts
15 Insulating plate
16 High terminal cover with ip40 protection degree
17 Low protection cover with ip30 protection degree
18 Tightening torque 18 Nm - 159 lbs in



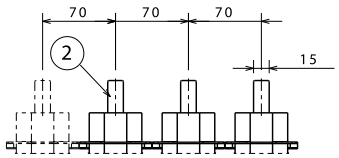
Terminals R

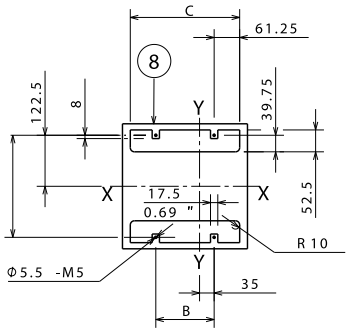


Terminals HR upper



Terminals VR lower





—

Key

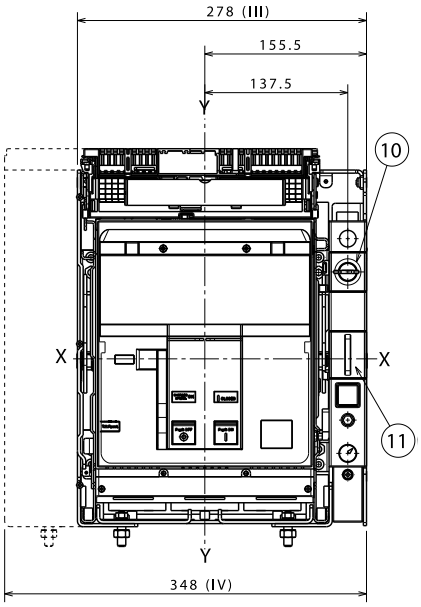
1 HR horizontal rear terminal HR
2 VR vertical rear terminal VR
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5 Nm - 4.4 lbs in
8 Drilling template support plate
9 Key lock (optional)
10 Clamp for auxiliary contacts
11 Low protection cover with IP30 protection degree
12 Tightening torque 9 Nm - 79.6 lbs in

	III	IV
B	70	140
C	192.5	262.5

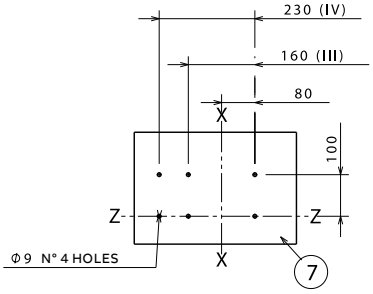
Tmax XT7 M – Installation

Installation for withdrawable circuit-breaker

Fixing on sheet



Drilling template for support sheet

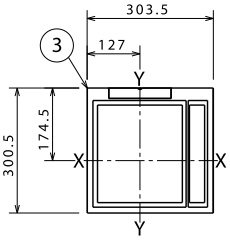


—

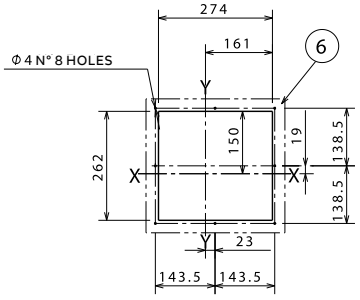
Key

3 Flange for the compartment door
6 Compartment door sheet steel drilling for flange
7 Fixing on sheet steel drilling template
10 Key lock (optional)
11 Padlock (optional)

Flange



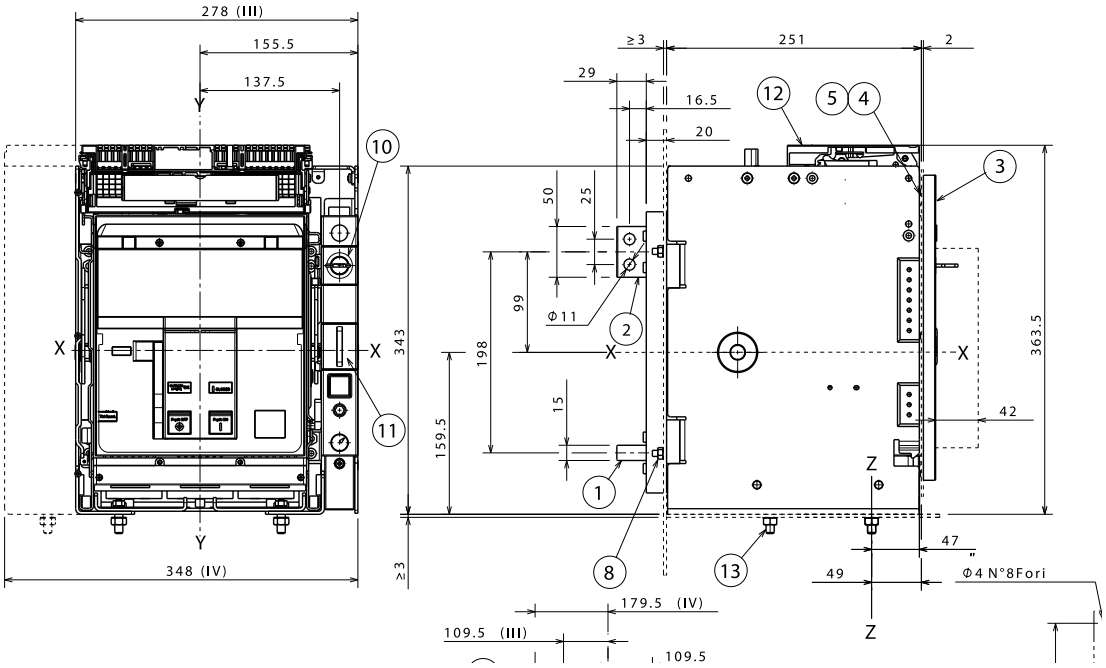
Drilling template compartment door



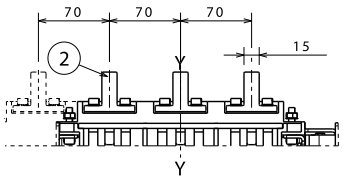
Tmax XT7 M – Installation

Terminals for withdrawable circuit-breaker

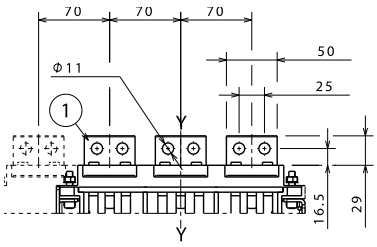
Terminals R

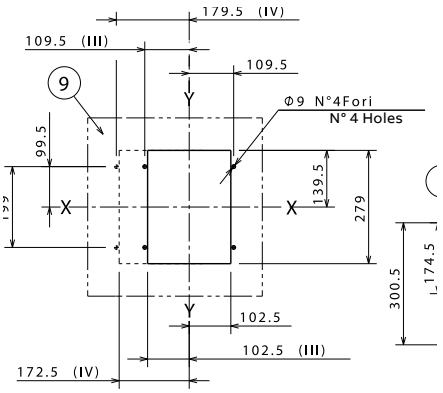


Terminals VR lower



Terminals HR lower



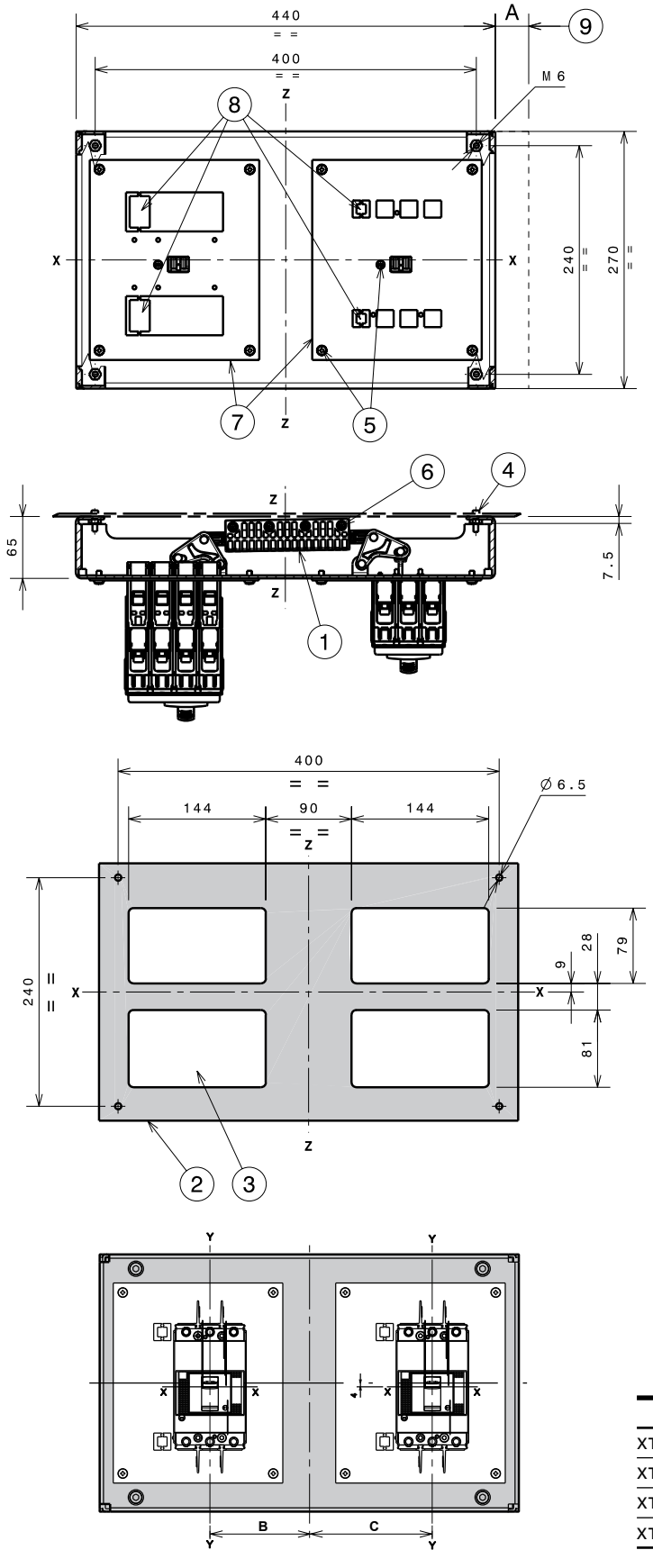


—

Key

1 HR horizontal rear terminal HR
2 VR vertical rear terminal VR
3 Flange for the compartment door
4 Flange fixing screws
5 Tightening torque 0.5 Nm - 4.4 lbs in
8 Tightening torque 9 Nm - 79.6 lbs in
9 Mounting at wall
10 Key lock (optional)
11 Padlock (optional)
12 Clamp for auxiliary contacts
13 Tightening torque 9 Nm - 79.6 lbs in

Tmax XT – Common accessories
Horizontal interlock XT series

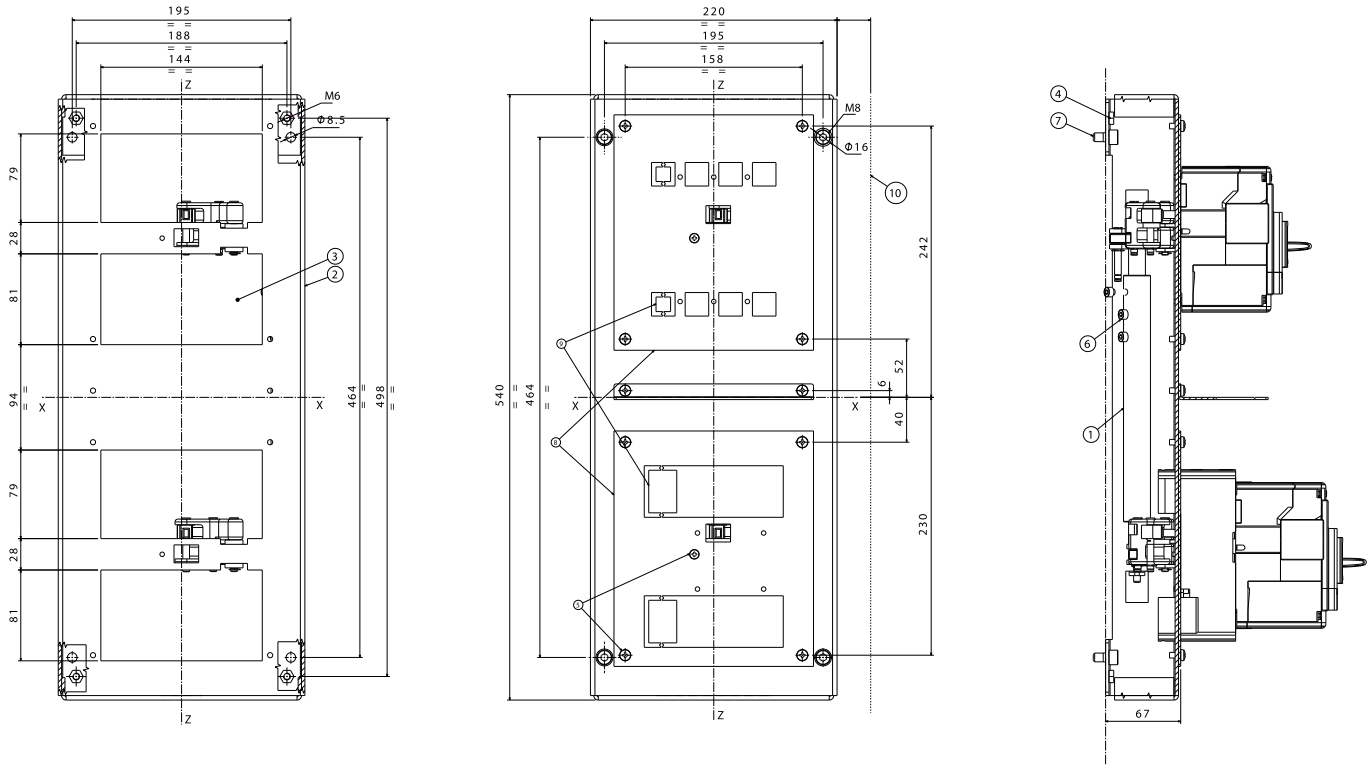


—
Key
1 Interlocking mechanism
2 Drilling template for fixing interlocking system
3 Drilling template for all version with rear terminals
4 Tightening torque 3.7Nm
5 Tightening torque 3Nm
6 Tightening torque 2.5Nm
7 Couplink plate for circuit-breakers
8 Breaking for 4p version
9 A = 35mm XT4 withdrawable with key lock for fixed part
A = 25mm XT2 withdrawable with key lock for fixed part

	B	C
XT1	104.25	129.25
XT2	101.75	131.75
XT3	99.75	133.75
XT4	99.25	134.25

Tmax XT – Common accessories

Vertical interlock XT series



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Key

1 Interlock device
2 Drilling template for fixing the interlock device on sheet Steel
3 Drilling template for all rear terminal version
4 Tightening torque 9Nm
6 Tightening torque 1 nm
7 Tightening torque under customer's responsibility
9 Pre-breacking for iv poles
10 A=35mm for XT4 fixed part Withdrawable with padlock device A=30mm for XT2 fixed part withdrawable with padlock device

—

Note:
For the overall dimension of the circuit-breaker see the relevant dimension tables and the configuration

Wiring diagrams

Reading information
Circuit-breakers

State of operation shown

The diagrams are shown in the following conditions:

- fixed version circuit-breaker, open;
- withdrawable or plug-in version circuit-breaker, open and connected;
- contactor for starting the motor open;
- circuits de-energised;
- trip units not tripped;
- motor operator with springs charged.

Description of figures

Fig. 1 = Shunt opening release.
Fig. 2 = Supplementary shunt opening release (only for four-pole circuit-breakers).
Fig. 4 = Supplementary permanent shunt opening release (only for four-pole circuit-breakers).
Fig. 5 = Instantaneous undervoltage release (see Notes B and F).
Fig. 6 = Undervoltage release with electronic time delay device outside the circuit-breaker, see note B).
Fig. 7 = Instantaneous undervoltage release in the version for machine tools with one contact in series (see notes B, C and F).
Fig. 8 = Instantaneous undervoltage release in the version for machine tools with two contacts in series (see Notes B, C and F).
Fig. 9 = First auxiliary early contact operated by the crank handle.
Fig. 10 = Second auxiliary early contact operated by the crank handle.
Fig. 11 = One changeover contact for electrical signaling of circuit-breaker open due to tripping of the residual current release type RC Inst, RC Sel, RC B Type or RC Sel 200.
Fig. 11a = Protection relay tripped signaling con tact – S51
Fig. 12 = Residual current release circuits type RC Sel, RC B Type or RC Sel 200.
Fig. 12a = Contact for signaling position of loaded springs – S33M
Fig. 13 = Two contacts for electrical signaling of residual current release pre-alarm and alarm type RC Sel, RC B Type or RC Sel 200.
Fig. 13a = Motor for loading closing springs – M
Fig. 14a = Trip contact reset coil – YR
Fig. 16 = Tripped position breaker signaling contact SY
Fig. 17 = Auxiliary early contacts – S4
Fig. 21 = Direct control motor operator (MOD) (only for XT1 and XT3 fixed or plug-in circuit-breakers) (see note I).
Fig. 22 = Motor operator with stored energy (MOE) (only for circuit-breakers XT2 and XT4).
Fig. 23 = A contact for electrical signaling of stored energy motor operator that can be operated remotely.
Fig. 24 = RC residual current sensor input (ANSI 64&50N TD)
Fig. 24a = RC differential ground fault protection sensor input (ANSI 87N)
Fig. 25 = Transformer star centre sensor input
Fig. 27 = Current sensor input on external neutral (only for 3-pole circuit breaker)
Fig. 31 = One changeover contact for electrical signaling of circuit-breaker open or closed and one changeover contact for electrical signaling of circuit-breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) (only for voltages up to 250V) (see notes E and I).
Fig. 32 = Two changeover contacts for electrical signaling of circuit-breaker open or closed, two changeover contacts for electrical signaling of circuit-breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) and one changeover contact for electrical signaling of circuit-breaker open due to tripping of the thermal magnetic or electronic trip unit (only for voltages up to 250V).

Fig. 33 = Three changeover contacts for electrical signaling of circuit-breaker open or closed and two changeover contacts for electrical signaling of circuit-breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) (only for voltages up to 250V).

Fig. 34 = Three changeover contacts for electrical signaling of circuit-breaker open and one changeover contact for electrical signaling of circuit-breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) (only for voltages up to 250V).

Fig. 35 = One changeover contact for electrical signaling of circuit-breaker open due to tripping of the thermal magnetic electronic trip unit (only for voltages up to 250V).

Fig. 36 = Two changeover contacts for electrical signaling of circuit-breaker open or closed and one changeover contact for electrical signaling of circuit-breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) (only for voltages up to 250V).

Fig. 37 = One changeover contact for electrical signaling of circuit-breaker open or closed and one changeover contact for electrical signaling of circuit-breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) (only for voltage up to 400V).

Fig. 38 = Two changeover contacts for electrical signaling of circuit-breaker open or closed (only for voltage up to 400V).

Fig. 39 = Three supplementary changeover contacts for electrical signaling of circuit-breaker open or closed (only for fixed or plug-in version circuit-breakers).

Fig. 41 = First changeover position contact of the circuit-breaker, for electrical signaling of connected (only for plug-in or withdrawable version circuit-breakers).

Fig. 42 = Second changeover position contact of the circuit-breaker, for electrical signaling of connected (only for plug-in or withdrawable version circuit-breakers).

Fig. 43 = Third changeover position contact of the circuit-breaker, for electrical signaling of connected(only for plug-in or withdrawable version circuit-breakers).

Fig. 44 = Fourth changeover position contact of the circuit-breaker, for electrical signaling of connected (only for plug-in or withdrawable version circuit-breakers).

Fig. 45 = First changeover position contact of the circuit-breaker, for electrical signaling of isolated (only for withdrawable version circuit-breakers).

Fig. 46 = Second changeover position contact of the circuit-breaker, for electrical signaling of isolated (only for withdrawable version circuit-breakers).

Fig. 47 = Current transformer circuit on the neutral conductor outside the circuit-breaker (for plug-in or withdrawable version circuit-breaker).

Fig. 48 = Auxiliary circuits of the 24V auxiliary power supply unit and of the HMI030 type interface unit (see note E).

Fig. 50 = Auxiliary circuits of the Ekip E-LSIG microprocessor-based release connected to the Ekip Display (display) or Ekip LED Meter (current display) display unit.

Fig. 51 = Auxiliary circuits of the electronic trip unit type Ekip LSI, Ekip LSIG or Ekip MLRIU connected to display unit type Ekip Display (display) or Ekip LED Meter (current display).

Fig. 52 = Auxiliary circuits of the Ekip Com type interface unit and of the HMI030 type interface unit (see note E).

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Fig. 53 = Auxiliary circuits of the electronic trip unit type Ekip LSI, Ekip LSIG or Ekip M-LRIU connected to interface unit type Ekip Com and with actuator unit type MOE-E for the stored energy motor operator.
Fig. 54 = Auxiliary circuits of the electronic trip unit type Ekip M-LRIU connected to the contactor control unit for starting the motor type PR212/CI (the circuit to the motor thermistor is optional).
Fig. 54a = Stand alone interface unit type Ekip Com with MOE-E motor operator.
Fig. 55 = Auxiliary circuits of the electronic trip unit type Ekip M-LRIU connected to the contactor control unit for starting the motor type PR212/CI and with ABB AF series contactor (the circuit to the motor thermistor is optional).
Fig. 55a = Interface unit type Ekip Com with direct supply to relay and MOE-E motor operator
Fig. 61 = Modbus RTU STA interface of Ekip Com Unit to install inside the circuit-breaker
Fig. 62 = Motor thermistor circuit.
Fig. 62a = Modbus RTU interface of Ekip Com Unit to install inside the circuit-breaker
Fig. 63 = Circuit of the voltage socket on the neutral conductor outside the circuit-breaker (for Ekip E_LSIG type microprocessor-based plug-in or withdrawable circuit-breaker).
Fig. 63a = Modbus TCP STA interface of Ekip Com Unit to install inside the circuit-breaker
Fig. 64 = Modbus TCP interface of Ekip Com Unit to install inside the circuit-breaker
Fig. 65 = Profinet interface of Ekip Com Unit to install inside the circuit-breaker
Fig. 66 = Ethernet IP interface of Ekip Com Unit to install inside the circuit-breaker
Fig. 67 = IEC61850 interface of Ekip Com Unit to install inside the circuit-breaker
Fig. 68 = Ekip Link interface of Ekip Com Unit to install inside the circuit-breaker
Fig. 69 = Ekip Com Hub interface of Ekip Com Unit to install inside the circuit-breaker
Fig. 75 = First opening coil – YO
Fig. 75a = Ekip Cartridge for one module and one Ekip Supply
Fig. 76 = First opening coil with control from protection trip unit – YO, Ekip Com Actuator
Fig. 76a = Ekip Cartridge for three modules and one Ekip Supply
Fig. 77 = First closing coil – YC
Fig. 78 = First opening coil with control from protection trip unit – YC, Ekip Com Actuator
Fig. 81 = Open/Close auxiliary contacts of circuit-breaker (first set)
Fig. 81a = Ekip Supply: auxiliary supply through module 110-240Vac/dc or 24/48Vdc and local bus
Fig. 83 = Ekip Signalling 2K-1
Fig. 84 = Ekip Signalling 2K-2
Fig. 85 = Ekip Signalling 2K-3
Fig. 86 = Ekip Synchrocheck
Fig. 87 = Ekip Signalling 3T-1
Fig. 88 = Ekip Signalling 3T-2
Fig. 89 = Ekip Com Modbus RTU
Fig. 90 = Ekip Com Modbus TCP
Fig. 91 = Ekip Com Profibus DP
Fig. 91a = Supplementary open/close auxiliary contacts outside the circuit-breaker
Fig. 92 = Ekip Com Ethernet IP
Fig. 93 = Ekip Com Devicenet™
Fig. 94 = Ekip Com IEC61850
Fig. 95 = Ekip Link
Fig. 95a = Contacts for signaling of circuit-breaker in racked-in, test, racked-out position
Fig. 96 = Ekip Com Hub
Fig. 97 = Ekip Com Profinet
Fig. 104 = Auxiliary circuits of Ekip Com or Kit of 24V DC auxiliary voltage for electronic trip units and of Ekip Multimeter display.
Fig. 110 = Ekip Com Modbus RTU redundant
Fig. 111 = Ekip Com Modbus TCP redundant
Fig. 112 = Ekip Com Profibus DP redundant
Fig. 113 = Ekip Com Profinet redundant
Fig. 114 = Ekip Com DevicenetTM redundant

Fig. 115 = Ekip Com Ethernet IP redundant
Fig. 116 = Ekip Com IEC61850 redundant
Fig. 132 = Motor starting module Ekip CI with ABB contactor series AF

Key

□ = Diagram figure number
* = See the note indicated by the letter
A1 = Applications located on the moving part of the circuit-breaker
A4 = Indicative devices and connections for control and signaling, outside the circuit-breaker
A11 = Display unit type Ekip Display (display) or Ekip LED Meter (current display)
A12 = Interface unit type Ekip Com (with MODBUS serial communication)
A13 = Signaling unit type LD030 DO
A14 = Actuator unit type MOE-E for the stored energy motor operator
A15 = Ekip Multimeter.
A17 = Actuator unit type MOE for the stored energy motor operator
A18 = 24V auxiliary power supply unit (see note E)
D = Undervoltage release electronic time delay device (outside the circuit-breaker) (only for voltages up to 250V)
H1 = Signaling lamp
H2 = Signaling lamp for stored energy motor operator blocked
J.. = Connectors for the auxiliary contacts of the withdrawable version circuit-breaker; extraction of the connectors takes place at the same time as that of the circuit-breaker.
K = Contactor for starting the motor
K51 = Electronic trip unit:
– overcurrent release type Ekip LS/I, Ekip N-LS/I, Ekip LSI, Ekip LSIG, Ekip E-LSIG
– of motor protection type Ekip I, Ekip M-I, Ekip M-LIU, Ekip M-LRIU
– of generator protection Ekip G-LSI
K87 = Residual current release type RC Inst, RC Sel, RC Sel 200, RC B Type
KO = Auxiliary opening relay
M = Motor with excitation in series for opening and closing the circuit-breaker (fig. 21)
M = Motor for opening the circuit-breaker and spring charging for closing the circuit-breaker (fig. 22)
M1 = Three-phase asynchronous motor
Q = Main circuit-breaker
Q/0..3 = Circuit-breaker auxiliary contacts
Q/0..7 = Circuit-breaker auxiliary contacts
Q/1...25 = Open/close auxiliary contacts of circuit-breaker
R = Resistor (see note F)
R1 = Resistor (see note H)
R2 = Motor thermistor
RC = RC (residual current) protection sensor
RTC = Contact for signaling circuit-breaker is ready to close
S1 = Contact controlled by the cam of the motor operator
S2 = Contact controlled by the key lock of the motor operator with direct action
S3/1-2 = Contacts controlled by the Auto/Manual selector and key lock of the stored energy motor operator
S33M/1-2= Limit contacts of spring loading motor
S4 = Contact controlled by the cam of the motor operator with direct action
S4/1-2 = Early auxiliary contacts
S4/1-4 = Auxiliary early contacts operated by the circuit-breaker mounted crank handle (see note C)
S43 = Switch for presetting remote/local control
S51 = Contact for electrical signaling of circuit-breaker open due to tripping of the thermal magnetic or electronic trip unit
S52 = Contact for signaling circuit breaker open due to tripping of opening coil and of undervoltage coil

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S6/1-2 = Contacts controlled by the Auto/ Manual selector of the motor operator with direct action

S87/1 = Contact for electrical signaling of pre-alarm of the residual current release type RC Sel, RC B or RC Sel 200

S87/2 = Contact for electrical signaling of alarm of the residual current release type RC Sel, RC B or RC Sel 200

S87/3 = Contact for electrical signaling of circuit-breaker open due to tripping of the residual current release type RC Sel, RC Inst, RC B or RC Sel 200

S75I/1..4 = Contacts for electrical signaling of circuit-breaker in the connected position (only provided with plug-in or withdrawable version circuit-breakers)

S75E/1-2 = Contacts for electrical signaling of circuit-breaker in racked-out position (only provided with withdrawable version circuit-breakers)

S75I/1-2-5= Contacts for signaling circuit-breaker in racked-in position (only provided with withdrawable circuit-breakers)

S75S/1-2 = Contacts for electrical signaling of circuit-breaker in the racked-out position (only provided with withdrawable version circuit-breakers)

S75T/1-2 =Contact for signaling circuit-breaker in test position (only provided with withdrawable circuit-breakers)

SC = Pushbutton or contact for closing the circuit-breaker

SC3 = Pushbutton for starting the motor

SD = Power supply switch-disconnector of the residual current release type RC Inst, RC Sel, RC Sel 200 or RC B Type

SO = Pushbutton or contact for opening the circuit-breaker

SO1 = Pushbutton or contact for opening circuit-breaker with time-delayed trip

SO1,S02 = Pushbuttons or contacts for opening the circuit-breaker (see “Instructions for resetting the circuit-breaker following release tripping”)

SO3 = Pushbutton for stopping the motor

SR = Pushbutton or contact for electrical resetting of S51 trip contact

SY = Contact for signalingcircuit-breaker open due to tripping of overcurrent protection release and of YO, YO2, YU coils (tripped position)

SY/1 = Contacts for electrical signaling of circuit-breaker open due to tripping of the thermal magnetic trip units, YO, YO1, YO2, YU (tripped position)

SY/1..2 = Contacts for electrical signaling of circuit-breaker open due to tripping of the thermal magnetic trip units, YO, YO1, YO2, YU (tripped position)

SY/1..3 = Contacts for electrical signaling of circuit-breaker open due to tripping of the thermal magnetic trip units, YO, YO1, YO2, YU (tripped position)

TI = Toroidal current transformer

TI/L1 = Current transformer placed on phase L1

TI/L2 = Current transformer placed on phase L2

TI/L3 = Current transformer placed on phase L3

TI/N = Current transformer placed on the neutral

UI/N = Current sensor on neutral

UI/O = Single-pole current sensor

V1 = Circuit-breaker applications

V2 = Motor operator applications

V4 = indicative apparatus and connections for control and signaling, outside the circuit-breaker

WI = Serial interface with the trip unit accessories

WS = Serial interface with the control system (MODBUS EIA RS485 interface)

X = Delivery connector for auxiliary circuits of withdrawable circuit-breaker

X3 = Connector of the circuit for the 24V auxiliary power supply unit

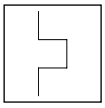
X5 = Circuit connector towards PR212/CI unit
X41 = Circuit connector for external neutral
X42 = Circuit connector for the motor thermistor
X11-X3-X4= Trip unit connectors
XB.. = Three-way connector for the plug-in version circuit-breaker auxiliary circuits
XB1...7 = Connectors for circuit-breaker applications
XC.. = Six-way connector for the plug-in version circuit-breaker auxiliary contacts
XD.. = Nine-way connector for the auxiliary circuits of the plug-in version circuit-breaker
XE.. = Fifteen-way connector for the auxiliary circuits of the plug-in version circuit-breaker
XG-XH = Electronic trip unit connectors
XH1 = Electronic trip unit contacts
XK7 = Connector for auxiliary circuits of communication modules
XV = Terminal boxes of the circuit-breaker applications
YC = Shunt closing release of the stored energy motor operator
YO = Shunt opening release
YO1 = Opening solenoid of the microprocessor-based overcurrent release
YO2 = Opening solenoid of the residual current release
YR = Coil for electrical resetting of trip contact S51
YU = Undervoltage release (see note B)

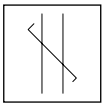
Notes

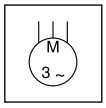
B) The undervoltage release is supplied for power supply branched on the supply side of the circuit-breaker or from an independent source: closing is only possible with the release energised (the lock on closing is made mechanically).
C) Contacts S4/1 and S4/2 shown in figures 7-8 open the circuit with the circuit-breaker open and reclose it when a manual closing command is given by means of the rotary handle, in accordance with the Standards regarding machine tools (in any case closing does not take place if the undervoltage release is not supplied).
E) The 24V auxiliary power supply unit of fig. 48 must necessarily be installed in the circuit-breaker seats marked SY/1 and Q/2. Therefore, should you want to install the unit in fig. 48 and the contacts in fig. 31 at the same time, the contacts of fig. 31 must be installed in the adjacent slots; that is, contact SY/1 in the slot marked SY/2 and contact Q/2 in the slot marked Q/1.
F) Additional external resistor for undervoltage supplied at 380/440V AC and 480/525V AC.
G) In the case of a three-pole fixed version circuit-breaker with a current transformer on the neutral conductor outside the circuit-breaker, when you want to remove the circuit-breaker it is necessary to short-circuit the terminals of the TI/N transformer.
H) Having requested a Uaux insulated from earth, one must use “galvanically separated converters” in compliance with IEC 60950 (UL 1950) or equivalent Standards that ensure a common mode current or leakage current (see IEC 478/1, CEI 22/3) no greater than 3.5 mA, IEC 60364-41 and CEI 64-8.
I) If MOD (application in figure 21) and auxiliary contacts 1Q+1SY (in figure 31) are installed at the same time, contact Q/2 must be installed in the slot marked as Q/1.

Reading information
Circuit-breakers

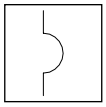
Graphical symbols for electrical diagrams (Standards IEC 617)

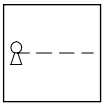

Thermal effect

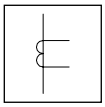

Conductors with corded cables (example two conductors)

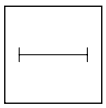


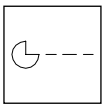
Three-phase asynchronous motor, with short-circuited rotor (cage)

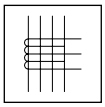

Electromagnetic effect

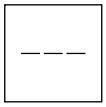

Key operating mechanism

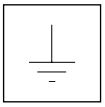

Current transformer

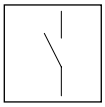

Timing

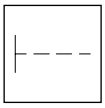

Cam operating mechanism

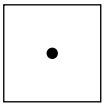

Current transformer with primary consisting of 4 passing conductors and with wound secondary, with socket

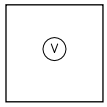

Mechanical connection


Ground (general symbol)

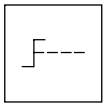

Closing contact

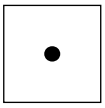

Manual mechanical operating mechanism (general case)

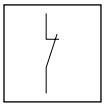

Connection of conductors

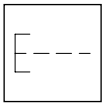


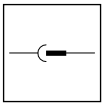
Voltmeter

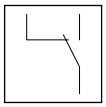

Rotary handle operating mechanism

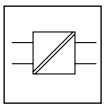

Terminal or clamp

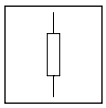

Opening contact

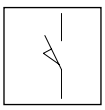

Pushbutton operating mechanism

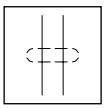

Socket and plug (female and male)

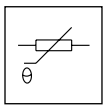

Changeover contact with momentary break


Converter separated galvanically

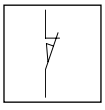

Resistor (general symbol)


Closing position contact (limit switch)

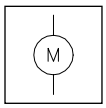

Conductors in shielded cable (example two conductors)



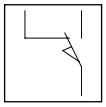
Resistor dependent on the temperature

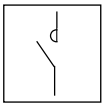

Opening position contact (limit switch)

Watt-hour meter

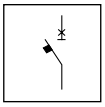


Motor (general symbol)

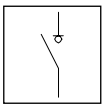

Changeover contact with momentary break (limit switch)



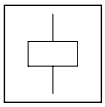
Contactor
(closing contact)



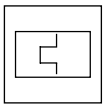
Power cut-off of switch-disconnector power with automatic opening



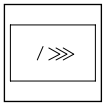
Switch-disconnector



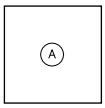
Control coil
(general symbol)



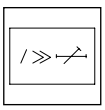
Thermal trip unit



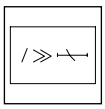
Instantaneous overcurrent release



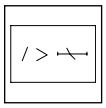
Ammeter



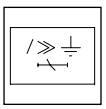
Overcurrent release with short adjustable time delay characteristic



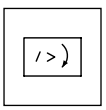
Overcurrent release with short inverse adjustable time delay characteristic



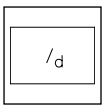
Overcurrent release with long inverse adjustable time delay characteristic



Overcurrent release for earth fault with short inverse time characteristic

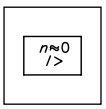


Current relay for unbalance between phases

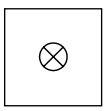


Residual current release

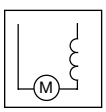
Relay for detecting lack of phase in a three-phase system



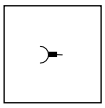
Relay for detecting blocked rotor by means of current measurement



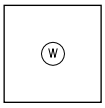
Lamp, general symbol



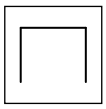
Motor with excitation in series



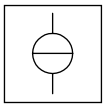
Brush



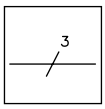
Wattmeter



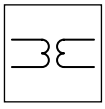
Screen, shield (it may be drawn in any convenient shape)



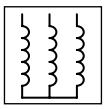
Ideal current source



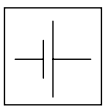
Three connections



Voltage transformer

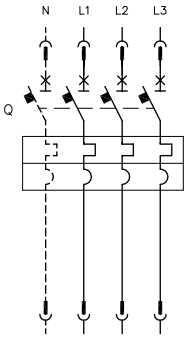


Winding of three-phase transformer, connection star

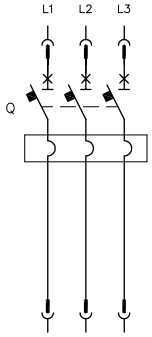


Primary cell, secondary cell, battery of primary cell or secondary cell

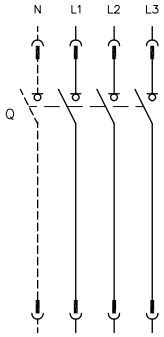
Wiring diagrams



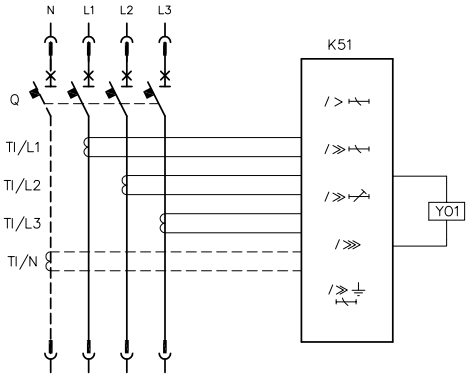
Three-pole or four-pole circuit-breaker with thermal magnetic trip unit



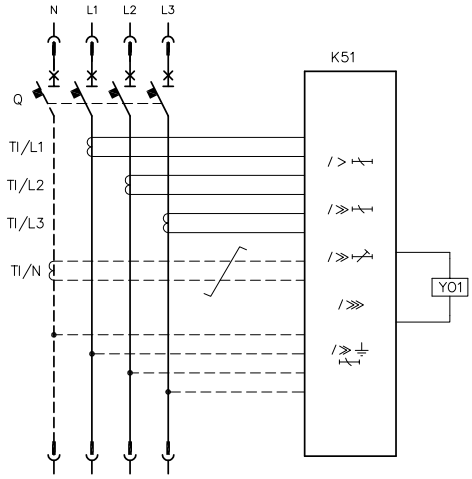
Three-pole circuit-breaker with magnetic trip unit



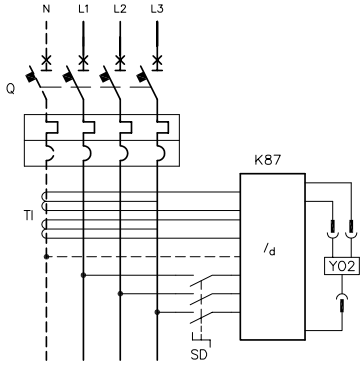
Three-pole or four-pole switch-disconnector



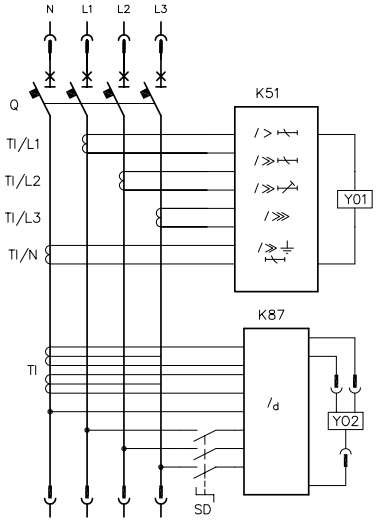
Three-pole or four-pole version circuit-breaker with Ekip Dip trip unit



Three-pole or four-pole version circuit-breaker with Ekip Touch trip unit

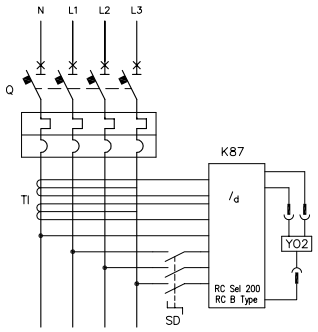


Three-pole or four-pole version circuit-breaker with thermal magnetic trip unit and residual current device

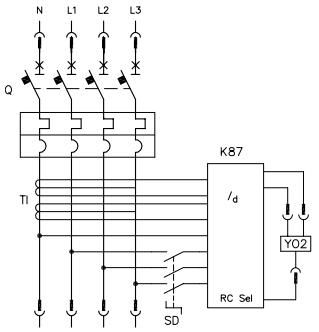


Three-pole or four-pole version circuit-breaker with electronic trip unit and residual current device

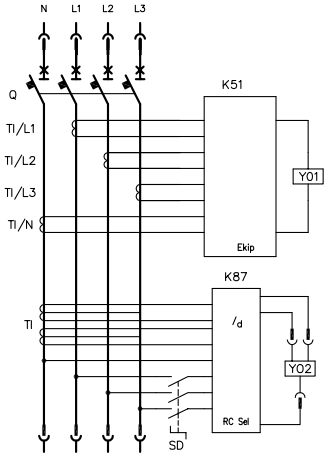
Wiring diagrams
Diagrams for XT2 and XT4



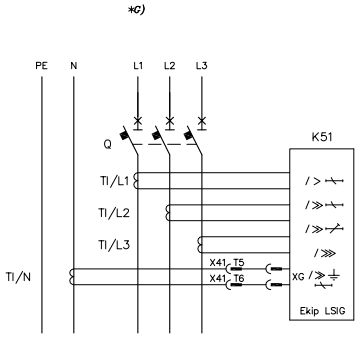
Four-pole circuit-breaker with thermal magnetic trip unit and RC Sel 200 or RC B type residual current release



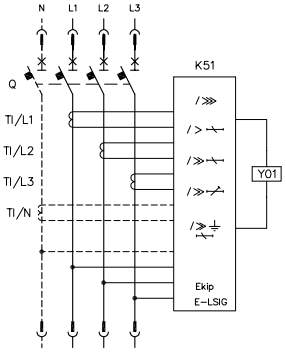
Four-pole circuit-breaker with thermal magnetic trip unit and RC Sel residual current release



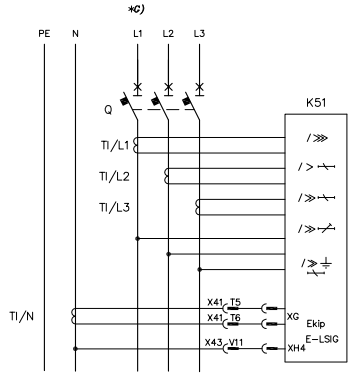
Four-pole circuit-breaker with electronic trip unit and RC Sel residual current release



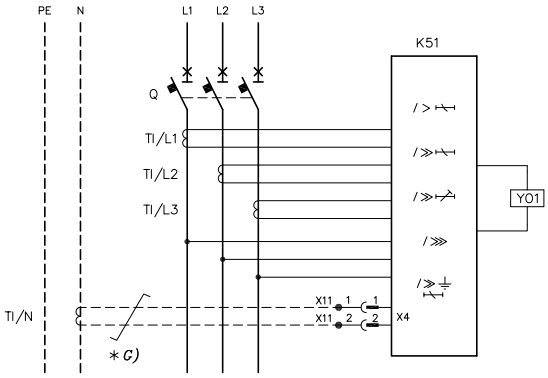
Three-pole fixed version circuit-breaker with Ekip Dip trip unit with current transformer on the neutral conductor outside the circuit-breaker



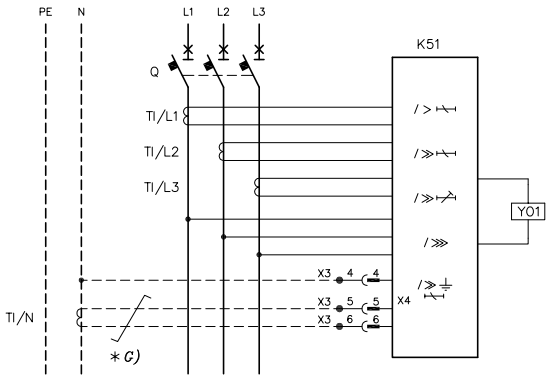
Three-pole or four-pole XT4 circuit-breaker with Ekip E-LSIG microprocessor based release



Fixed version three-pole XT4 circuit-breaker with Ekip E-LSIG with current transformer on neutral conductor, external to circuit-breaker



Three-pole fixed version circuit-breaker with Ekip Touch trip unit with current sensor on the neutral conductor outside the circuit-breaker



Three-pole fixed version circuit-breaker with Ekip Touch trip unit with current and voltage sensors on the neutral conductor outside the circuit-breaker

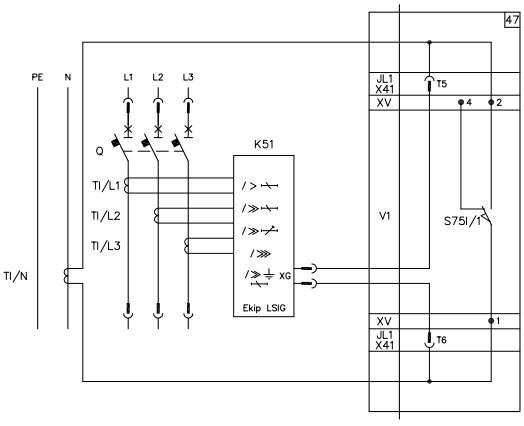
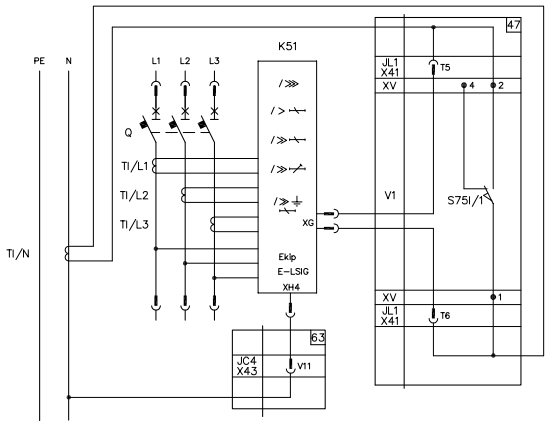


Diagram recommended for three-pole plug-in or withdrawable version circuit-breakers with Ekip Dip trip unit on the neutral conductor outside the circuit-breaker

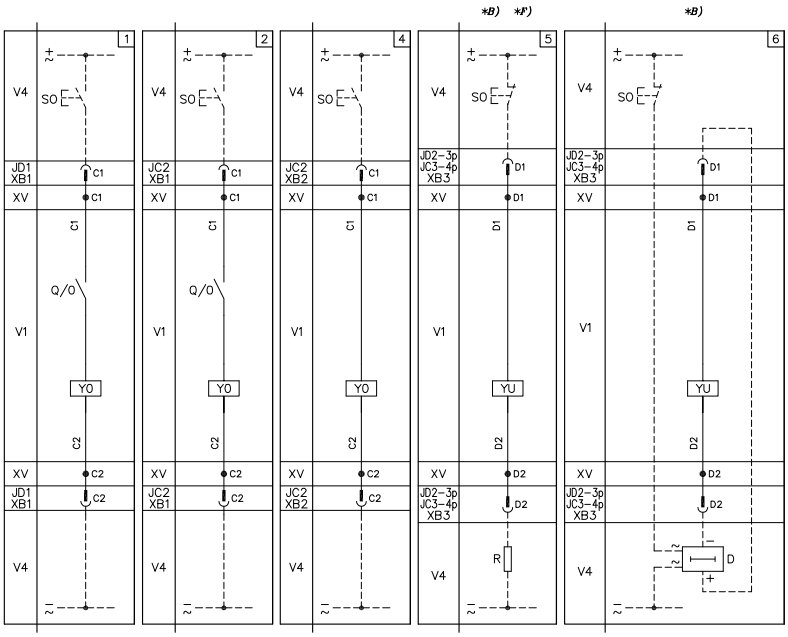


Advisable diagram for plug-in or withdrawable version three-pole circuit-breakers with Ekip Dip trip unit, current transformer and voltage connection on neutral conductor, external to circuit-breaker

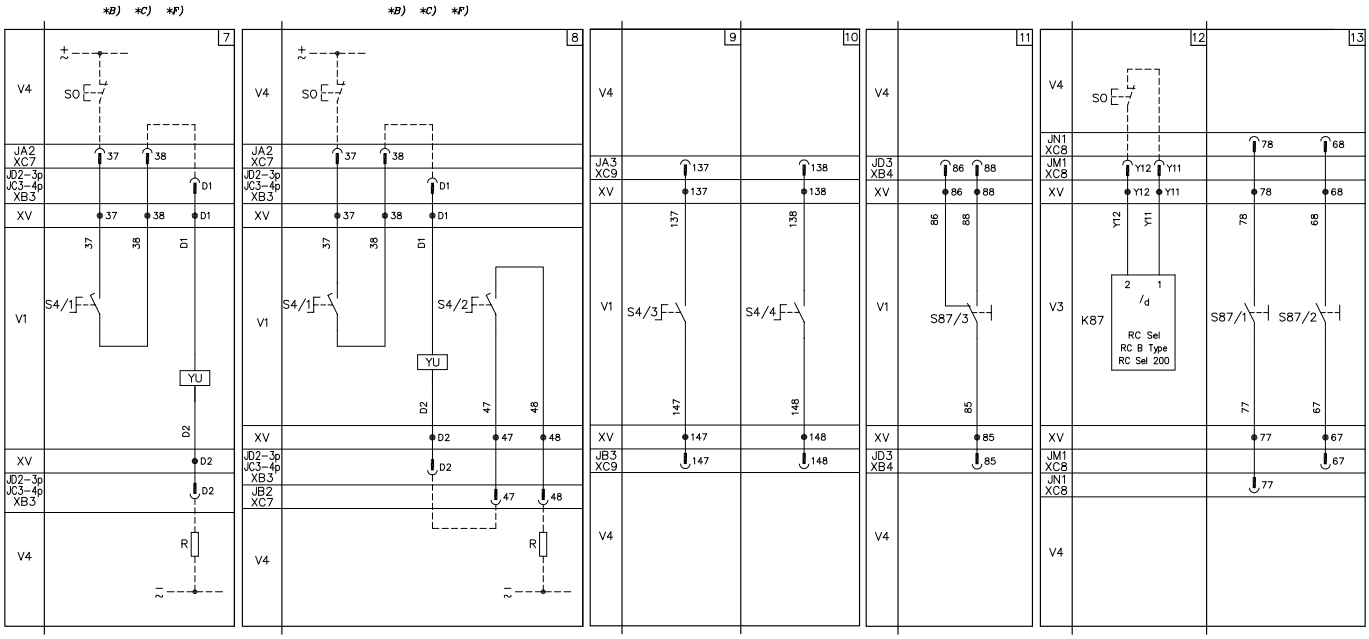
Wiring diagrams
Diagrams for XT2 and XT4

Service releases

1) Shunt opening release.
2) Supplementary shunt opening release (only for four-pole circuit-breakers).
4) Supplementary permanent shunt opening release (only for four-pole circuit-breakers).
5) Instantaneous undervoltage release (see Notes B and F).
6) Undervoltage release with electronic time delay device outside the circuit-breaker, see note B).



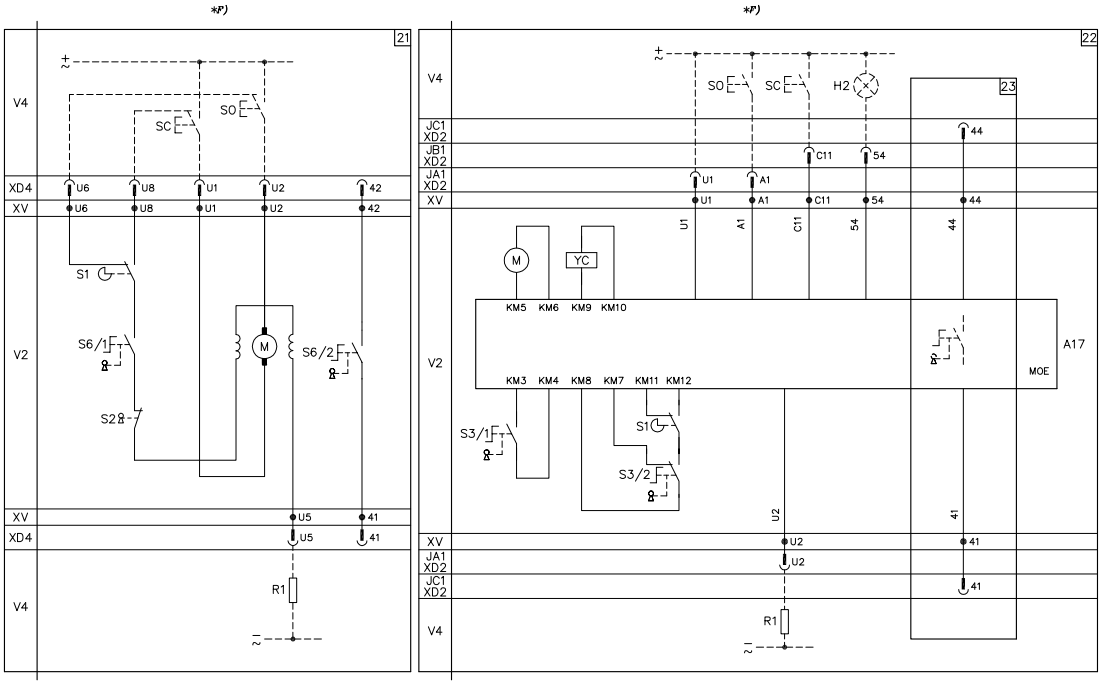
7) **Instantaneous undervoltage release in the version for machine tools with one contact in series (see notes B, C and F).**
8) **Instantaneous undervoltage release in the version for machine tools with two contacts in series (see Notes B, C and F).**
9) **First auxiliary early contact operated by the crank handle.**
10) **Second auxiliary early contact operated by the crank handle.**
11) **One changeover contact for electrical signaling of circuit-breaker open due to tripping of the residual current release type RC Inst, RC Sel, RC B Type or RC Sel 200.**
12) **Residual current release circuits type RC Sel, RC B Type or RC Sel 200.**
13) **Two contacts for electrical signaling of residual current release pre-alarm and alarm type RC Sel, RC B Type or RC Sel 200.**



Wiring diagrams
Diagrams for XT2 and XT4

Motor operator

21) Direct control motor operator (MOD) (only for XT1 and XT3 fixed or plug-in circuit-breakers) (see note l).
22) Motor operator with stored energy (MOE) (only for circuit-breakers XT2 and XT4).
23) A contact for electrical signaling of stored energy motor operator that can be operated remotely.

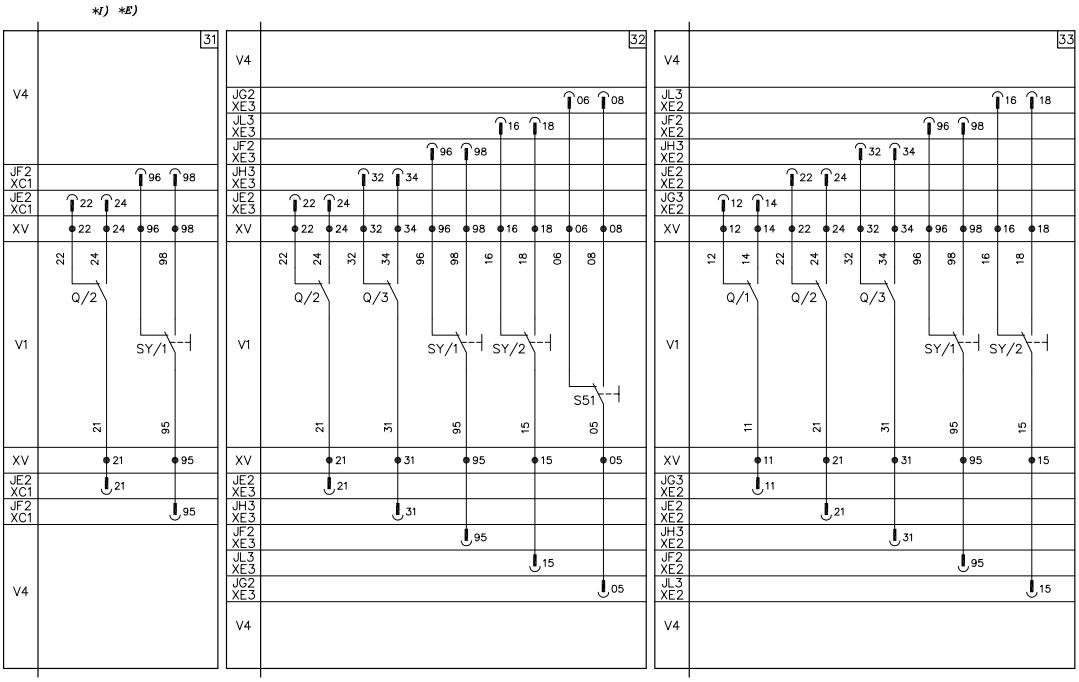


Signaling contacts

31) One changeover contact for electrical signaling of circuit-breaker open or closed and one changeover contact for electrical signaling of circuit-breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) (only for voltages up to 250V) (see notes E and I).

32) Two changeover contacts for electrical signaling of circuit-breaker open or closed, two change over contacts for electrical signaling of circuit-breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) and one changeover contact for electrical signaling of circuit-breaker open due to tripping of the ther momagnetic or electronic trip unit (only for voltages up to 250V).

33) Three changeover contacts for electrical signaling of circuit-breaker open or closed and two changeover contacts for electrical signaling of circuit-breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) (only for voltages up to 250V).



Wiring diagrams
Diagrams for XT2 and XT4

Signaling contacts

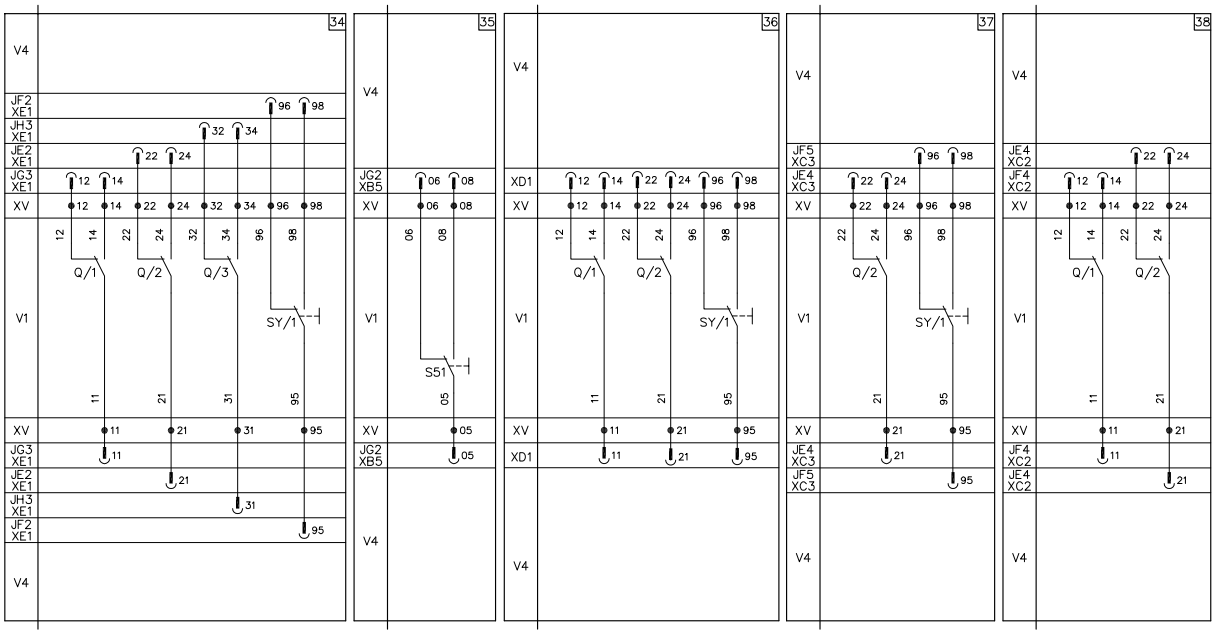
34) Three changeover contacts for electrical signaling of circuit-breaker open and one changeover contact for electrical signaling of circuit-breaker open due to tripping of the magnetic, thermal-magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) (only for voltages up to 250V).

35) One changeover contact for electrical signaling of circuit-breaker open due to tripping of the thermal magnetic electronic trip unit (only for voltages up to 250V).

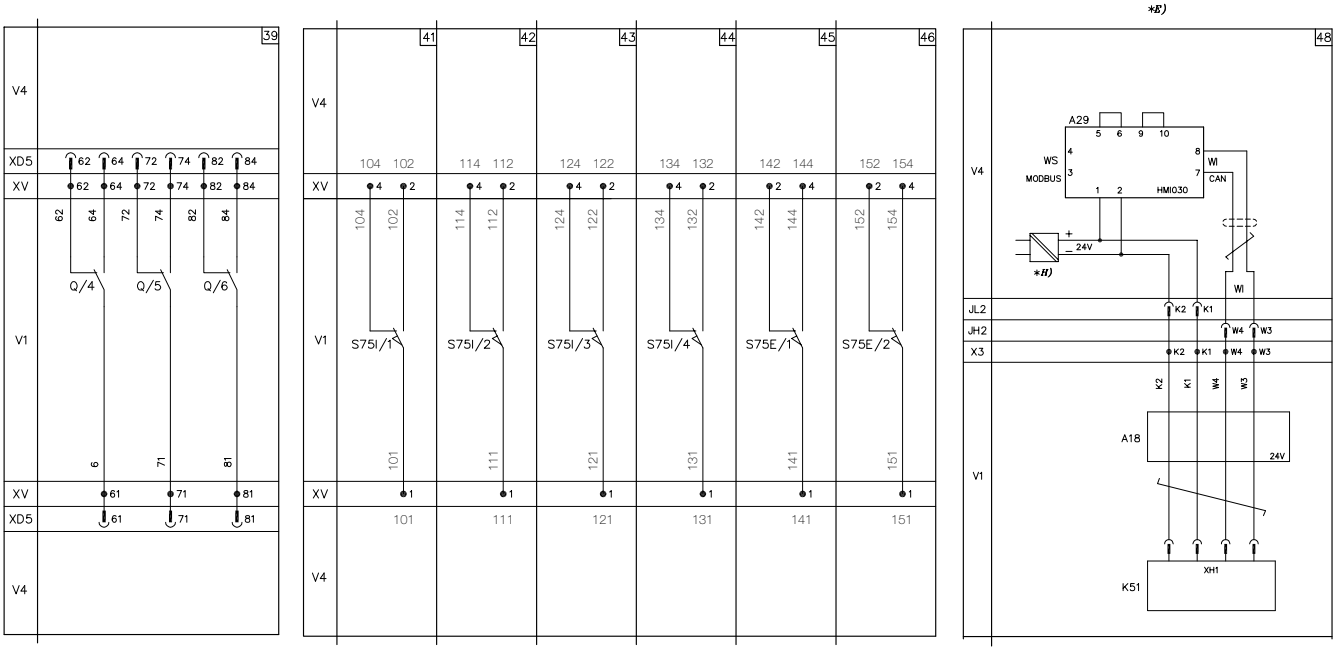
36) Two changeover contacts for electrical signaling of circuit-breaker open or closed and one changeover contact for electrical signaling of circuit-breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) (only for voltages up to 250V).

37) One changeover contact for electrical signaling of circuit-breaker open or closed and one changeover contact for electrical signaling of circuit-breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) (only for voltage up to 400V).

38) Two changeover contacts for electrical signaling of circuit-breaker open or closed (only for voltage up to 400V).



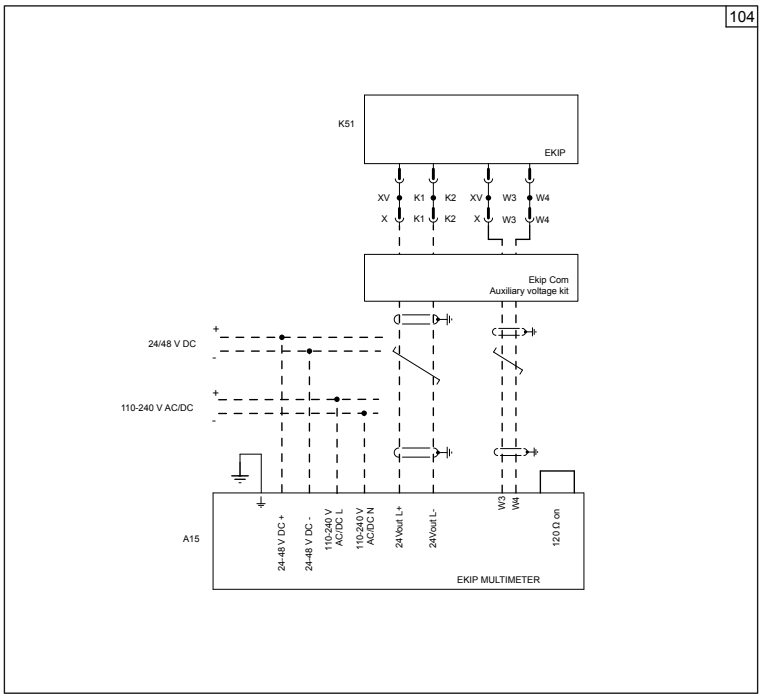
39) Three supplementary changeover contacts for electrical signaling of circuit-breaker open or closed (only for fixed or plug-in version circuit-breakers).
41) First changeover position contact of the circuit-breaker, for electrical signaling of connected (only for plug-in or withdrawable version circuit-breakers).
42) Second changeover position contact of the circuit-breaker, for electrical signaling of connected (only for plug-in or withdrawable version circuit-breakers).
43) Third changeover position contact of the circuit-breaker, for electrical signaling of connected (only for plug-in or withdrawable version circuit-breakers).
44) Fourth changeover position contact of the circuit-breaker, for electrical signaling of connected (only for plug-in or withdrawable version circuit-breakers).
45) First changeover position contact of the circuit-breaker, for electrical signaling of isolated (only for withdrawable version circuit-breakers).
46) Second changeover position contact of the circuit-breaker, for electrical signaling of isolated (only for withdrawable version circuit-breakers).
48) Auxiliary circuits of the 24V auxiliary power supply unit and of the HMI030 type interface unit (see note E).



Wiring diagrams
Diagrams for XT2 and XT4

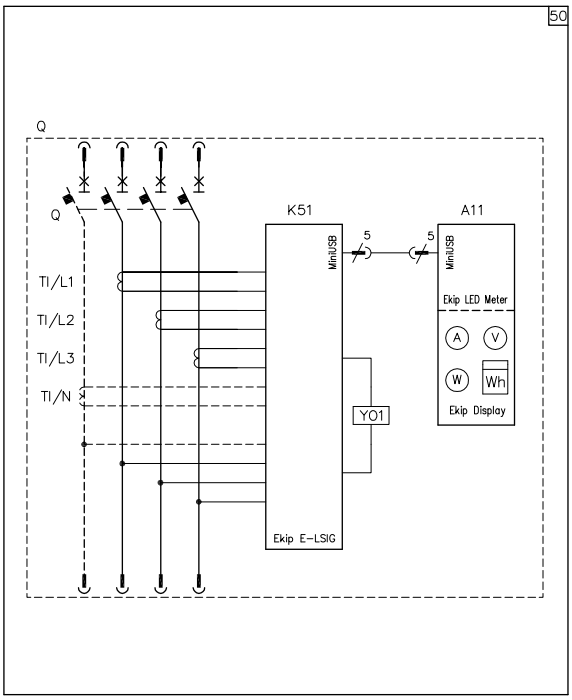
Signaling contacts

104) Auxiliary circuits of Ekip Com or Kit of 24V DC auxiliary voltage for electronic trip units and of Ekip Multimeter display.



Electronic trip unit Ekip E-LSIG connected with Ekip Display or Ekip LED Meter

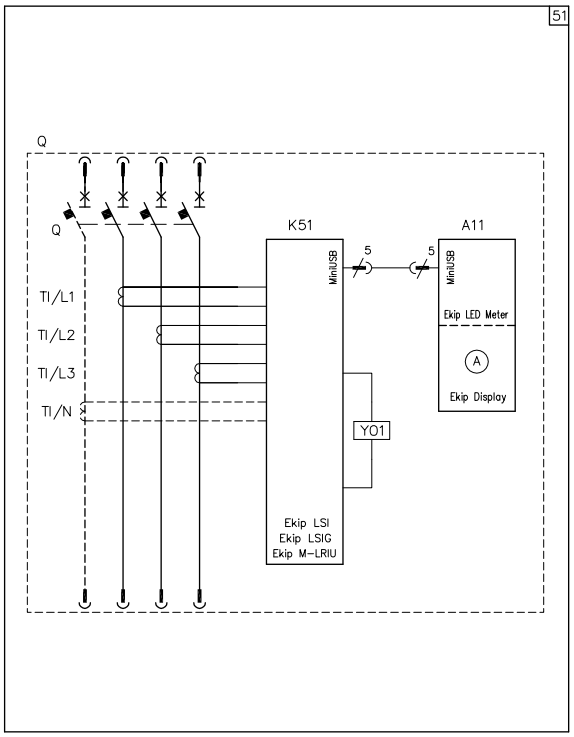
50) Auxiliary circuits of the Ekip E-LSIG microprocessor-based release connected to the Ekip Display (display) or Ekip LED Meter (current display) display unit.



Wiring diagrams
Diagrams for XT2 and XT4

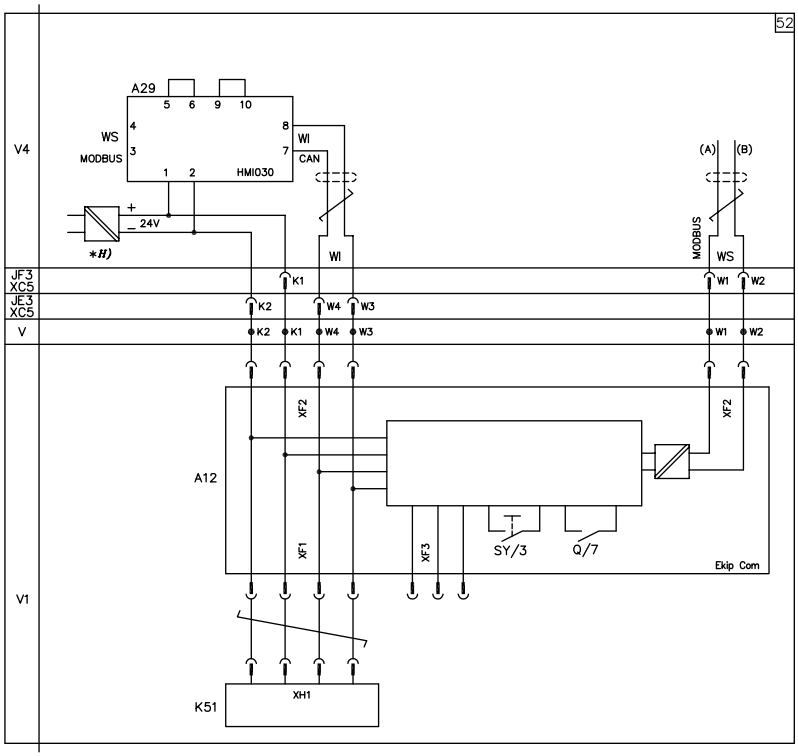
Electronic trip unit Ekip LSI, Ekip LSIG, Ekip M-LRIU connected with Ekip Display or Ekip LED Meter

51) Auxiliary circuits of the electronic trip unit type Ekip LSI, Ekip LSIG or Ekip MLRIU connected to display unit type Ekip Display (display) or Ekip LED Meter (current display).



Auxiliary circuit of Ekip-Com and HMI030

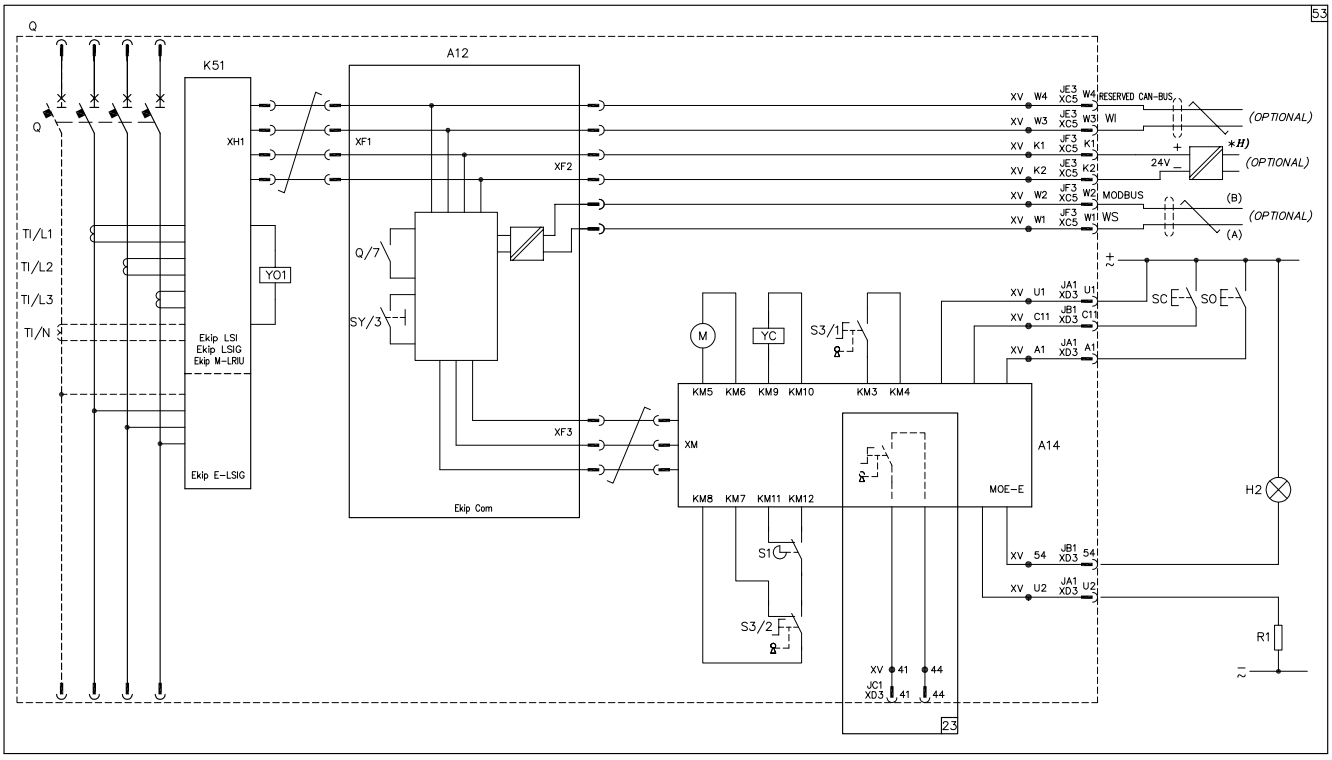
52) Auxiliary circuits of the Ekip Com type interface unit and of the HMI030 type interface unit (see note E).



Wiring diagrams
Diagrams for XT2 and XT4

Electronic trip unit Ekip LSI, Ekip LSIG or Ekip M-LRIU connected to interface unit Ekip Com and with actuator unit type MOE-E for the stored energy motor operator

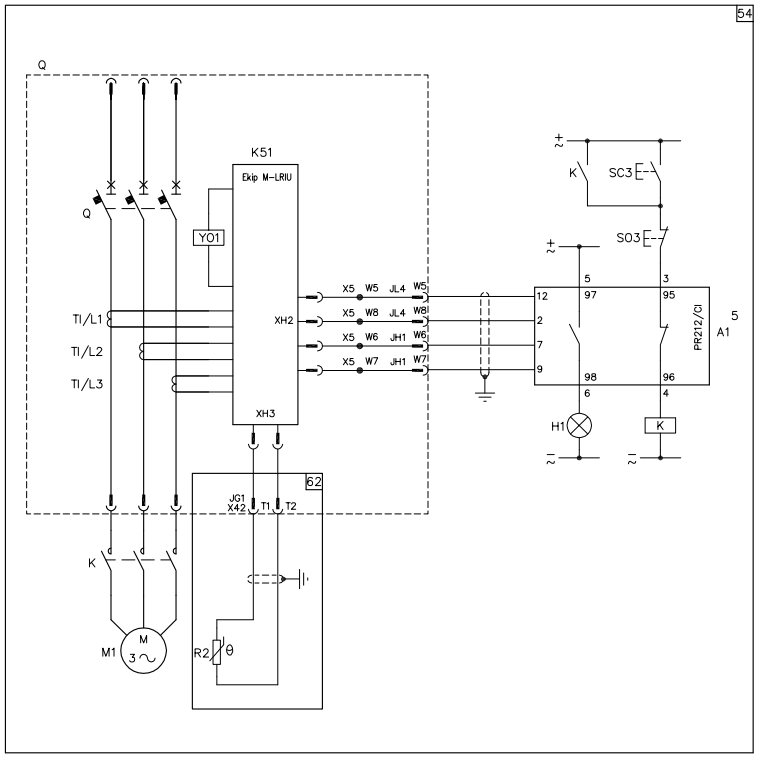
23) One Contact for electrical signaling of stored energy motor operator that can be operated remotely.
53) Auxiliary circuits of the electronic trip unit type Ekip LSI, Ekip LSIG or Ekip M-LRIU connected to interface unit type Ekip Com and with actuator unit type MOE-E for the stored energy motor operator.



Auxiliary circuits of the electronic trip unit Ekip M-LRIU connected to the contactor control unit for starting the motor PR212/CI (the circuit to the motor thermistor is optional)

54) Auxiliary circuits of the electronic trip unit type Ekip M-LRIU connected to the contactor control unit for starting the motor type PR212/CI (the circuit to the motor thermistor is optional).

62) Motor thermistor circuit.

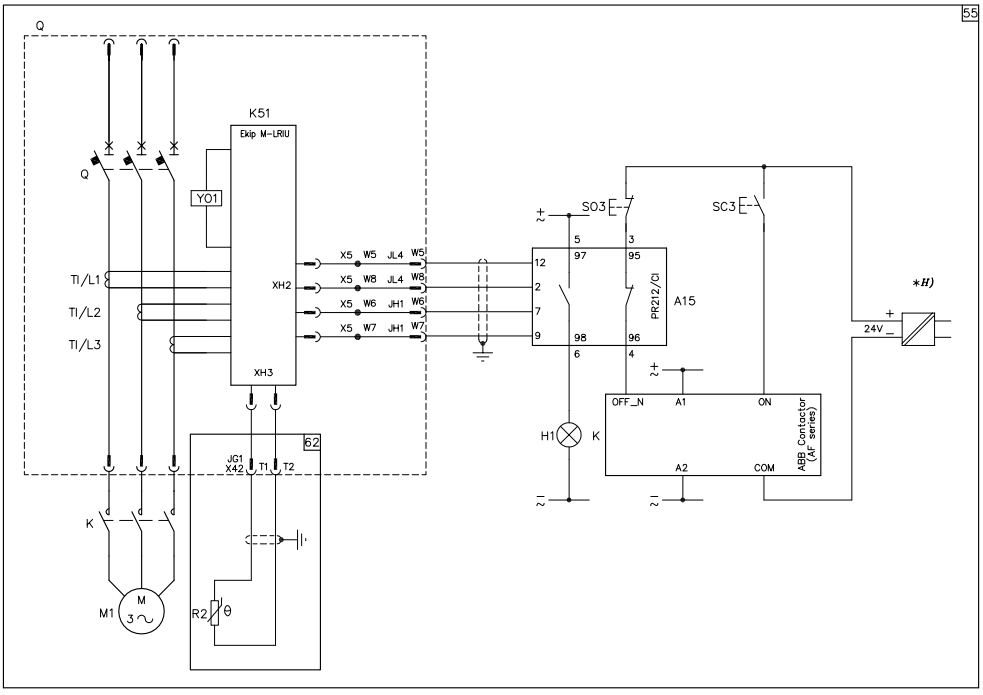


Wiring diagrams
Diagrams for XT2 and XT4

Electronic trip unit Ekip M-LRIU connected to the contactor control unit for starting the motor PR212/CI and with ABB AF series contactor (the circuit to the motor thermistor is optional)

55) Auxiliary circuits of the electronic trip unit type Ekip M-LRIU connected to the contactor control unit for starting the motor type PR212/CI and with ABB AF series contactor (the circuit to the motor thermistor is optional).

62) Motor thermistor circuit.



Instructions for resetting the circuit-breaker after tripping

Selection of the type of circuit-breaker resetting depends on design requirements and on service conditions.
Resetting can take place following tripping of the following releases:

- overcurrent;
- undervoltage;
- shunt opening.

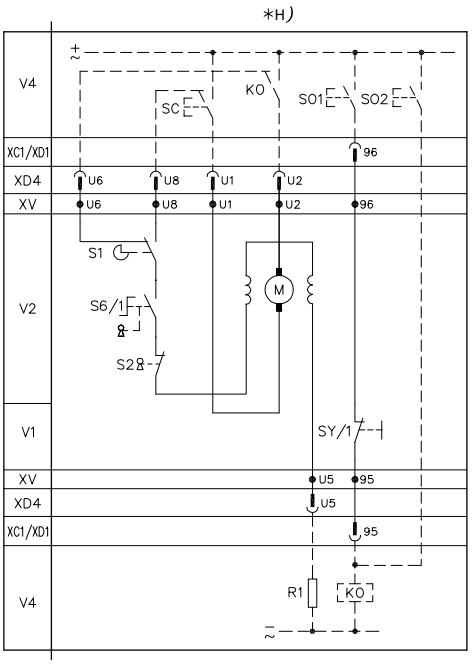
The following three possibilities are suggested (see diagrams in the following page):

1. Only manual resetting
   To be wired (by the customer): contact SO1, contact SY/1 and the auxiliary relay KO (only for MOD).
   Opening is prevented until the circuit-breaker is in the tripped position.
   To reset the circuit-breaker it is necessary to activate the special lever on the front of the motor until the circuit-breaker goes into the open position.
2. Electrical resetting under the operator's responsibility
   To be wired (by the customer): contact SO1, SO2, contact SY/1 and the auxiliary relay KO (only for MOD).
   Opening of the circuit-breaker is allowed by means of the contact S02. Such contact shall be protected to avoid unwanted activation and can be used only if the information received by the operator make it possible to exclude tripping due to a short-circuit, or if the causes of the short-circuit have been removed.
3. Electrical resetting always allowed
   To be wired (by the customer): contact SO1, SO2, contact SY/1 and the auxiliary relay KO (only for MOD).
   Opening is always allowed by means of contact S02.

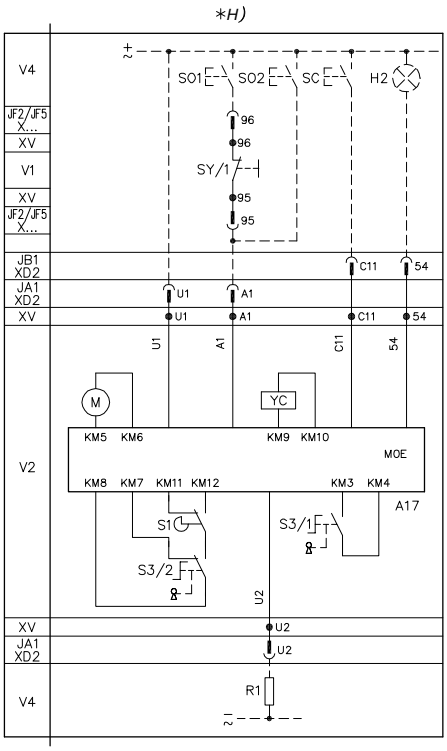
NB: If the magnetic, thermal magnetic or electronic trip unit is present, it is necessary to find the causes which led to the circuit-breaker being in the tripped position so as to prevent reclosing under short-circuit conditions. In all cases, manual resetting is always allowed.

Wiring diagrams
Diagrams for XT2 and XT4

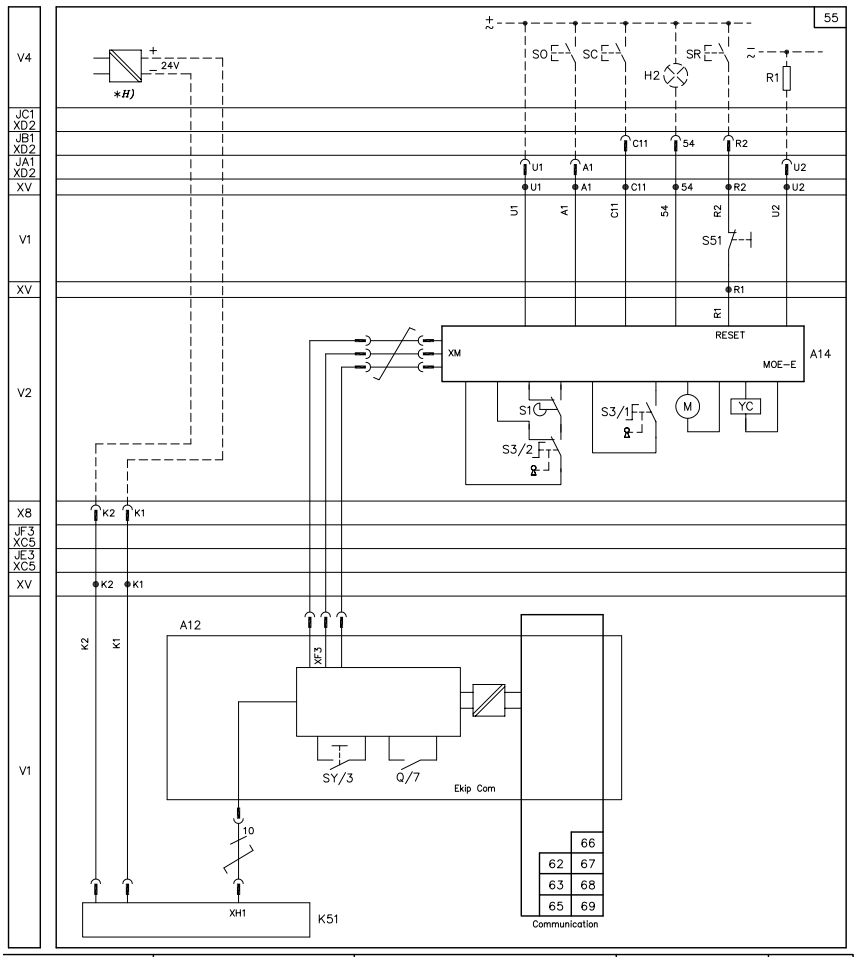
MOD



MOE or MOE-E

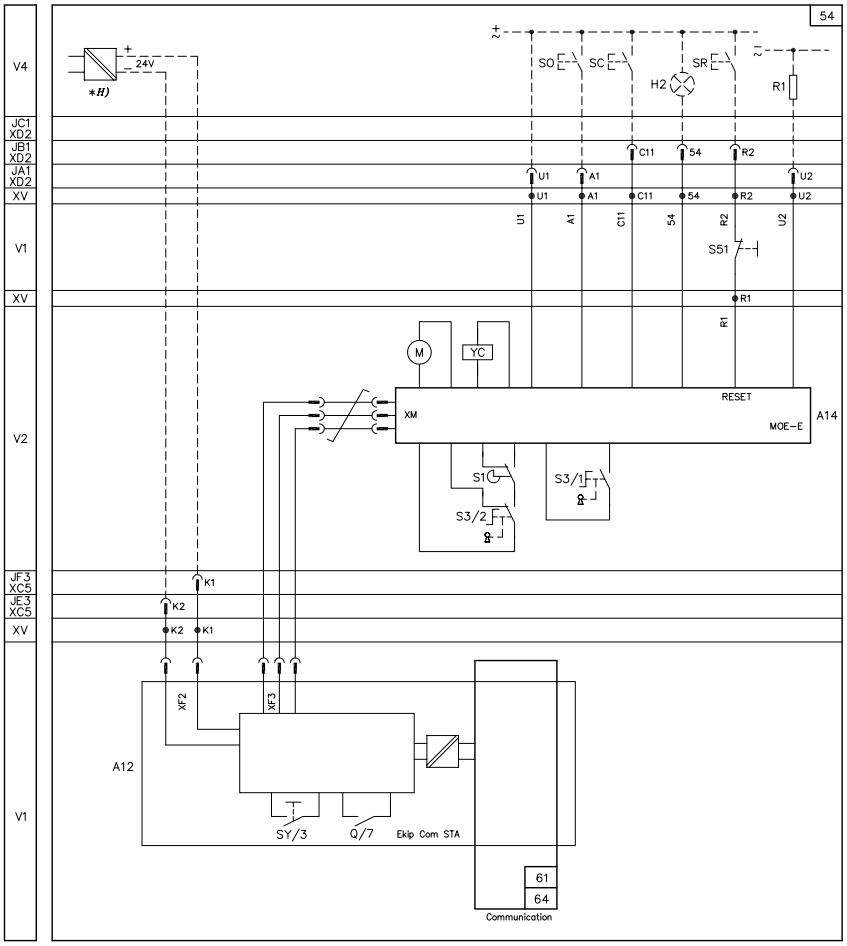


55a) Interface unit type Ekip Com with direct supply to the trip unit and MOE-E motor operator



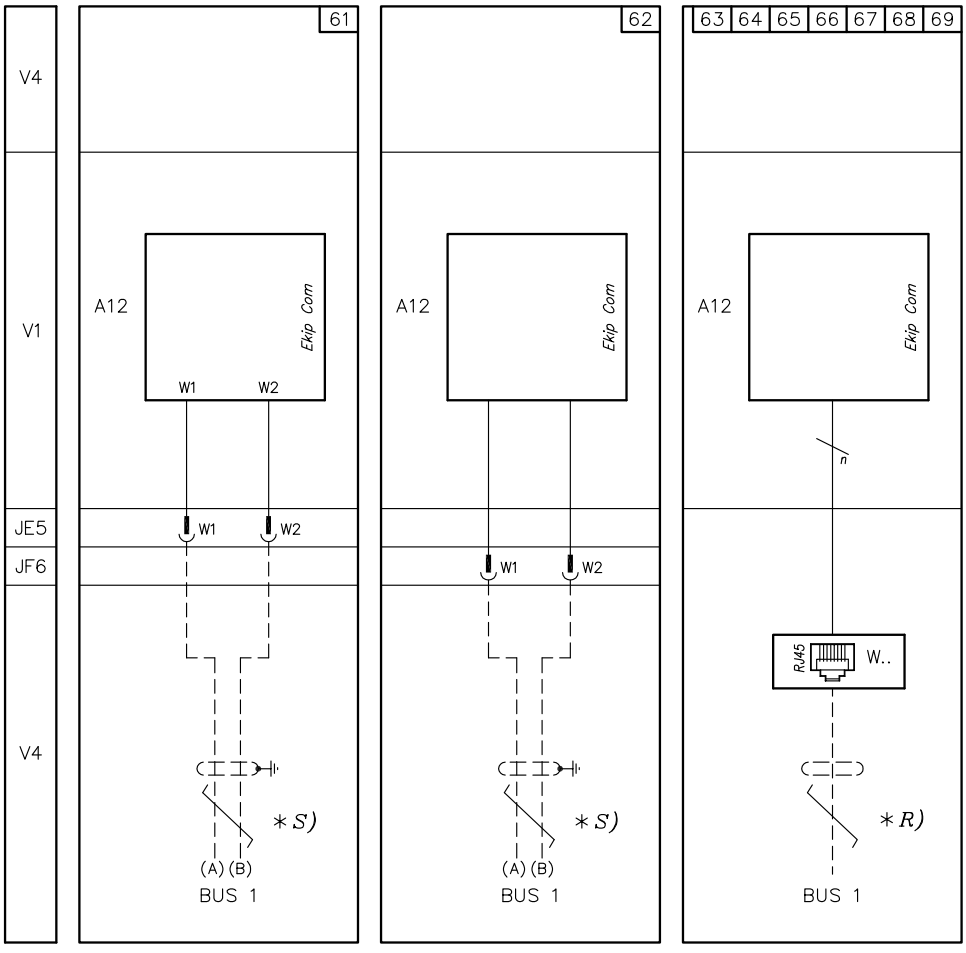
Wiring diagrams
Diagrams for XT2 and XT4

54a) Stand-alone interface unit type Ekip Com with MOE-E motor operator



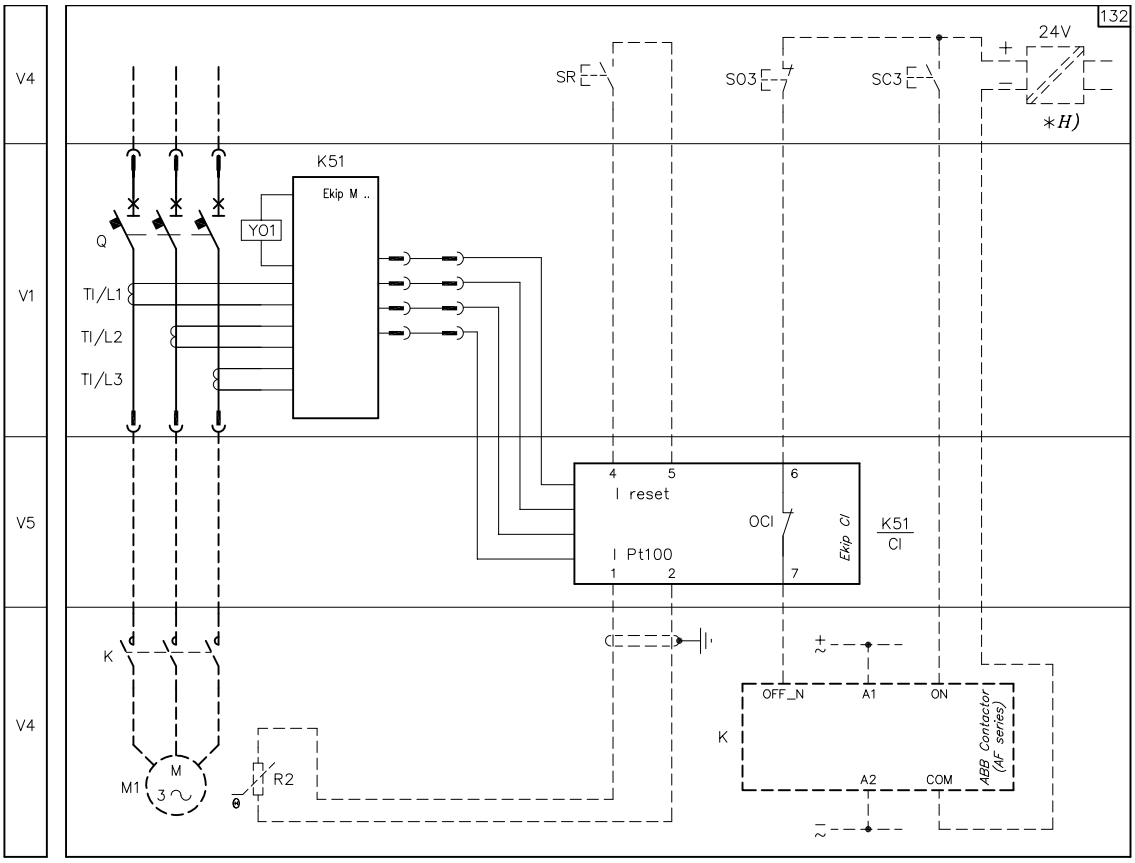
61) Modbus RTU STA interface of Ekip Com Unit to be installed inside the circuit-breaker
62a)Modbus RTU interface of Ekip Com Unit to be installed inside the circuit-breaker
63a)Modbus TCP STA interface of Ekip Com Unit to be installed inside the circuit-breaker
64) Modbus TCP interface of Ekip Com Unit to be installed inside the circuit-breaker
65) Profinet interface of Ekip Com Unit to be installed inside the circuit-breaker
66) Ethernet IP interface of Ekip Com Unit to be installed inside the circuit-breaker
67) IEC61850 interface of Ekip Com Unit to be installed inside the circuit-breaker
68) Ekip Link interface of Ekip Com Unit to be installed inside the circuit-breaker
69) Ekip Com Hub interface of Ekip Com Unit to be installed inside the circuit-breaker

—
61 - 62 - 63 - 64 - 65 - 66 - 67 - 68 - 69 as an alternative to each other

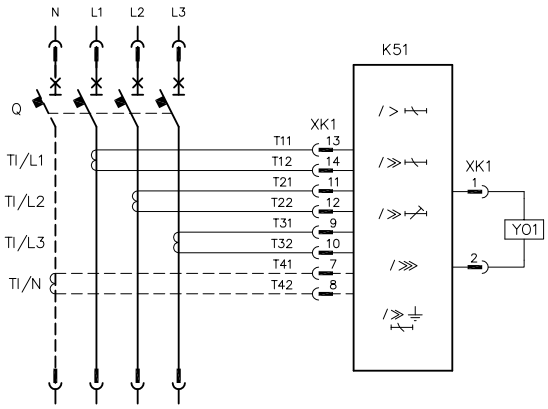


Wiring diagrams
Diagrams for XT2 and XT4

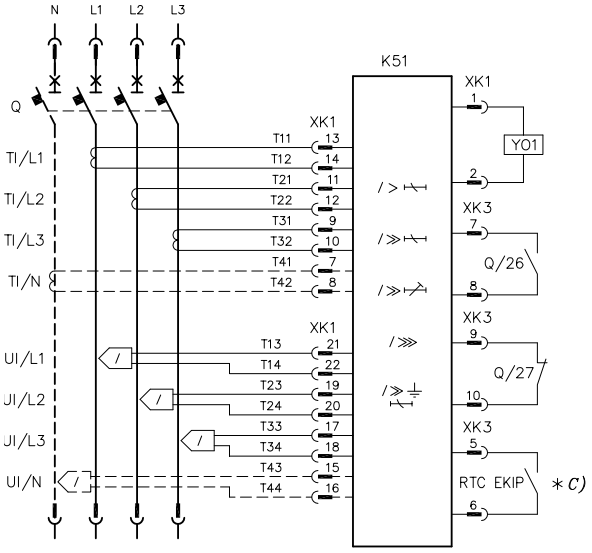
132) Motor starting module Ekip CI with ABB contactor series AF



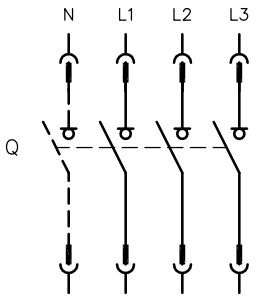
Wiring diagrams
Diagrams for XT7 and XT7 M



Three-pole or four-pole circuit-breaker with Ekip Dip trip unit



Three-pole or four-pole circuit-breaker with Ekip Touch trip unit

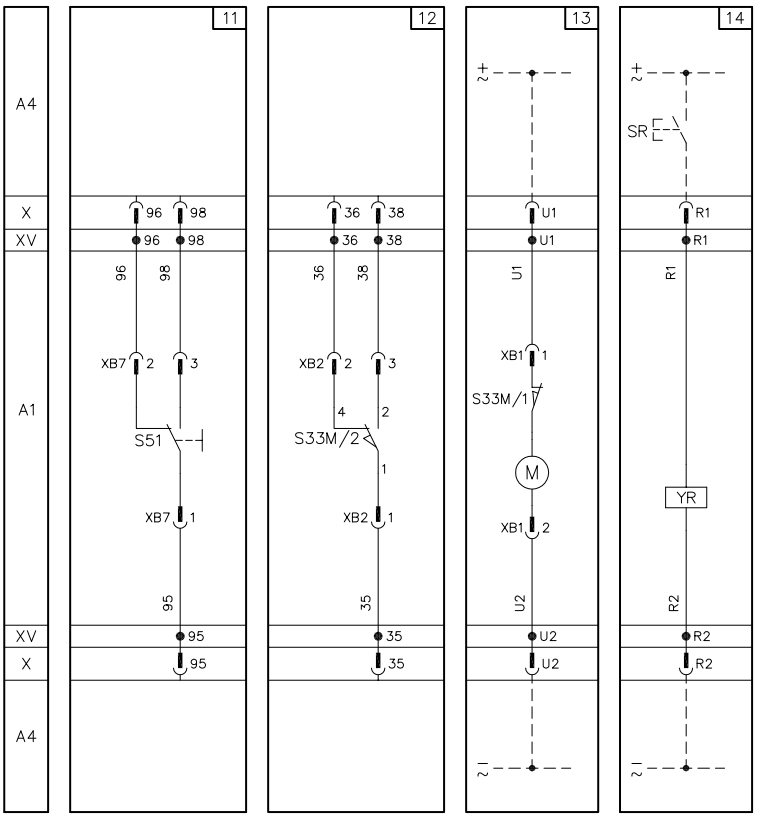


Three-pole or four-pole switch-disconnector

Wiring diagrams
Diagrams for XT7 and XT7 M

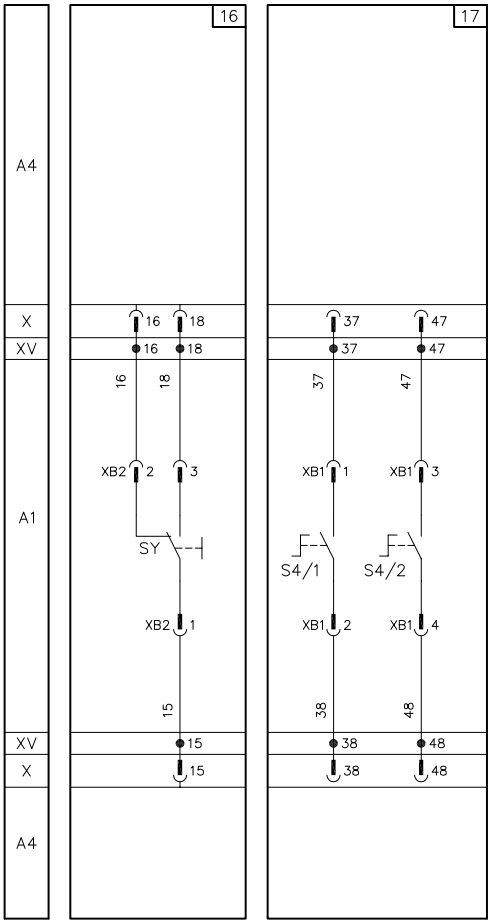
11a) Protection trip unit tripped signaling contact – S51
12a) Contact for signaling position of loaded springs – S33M
13a) Motor for loading closing springs – M
14a) Trip contact reset coil – YR

—
12 - 13 - 14 only for XT7 M circuit-breakers



16) Tripped position breaker signaling contact SY
17) Auxiliary early contacts – S4

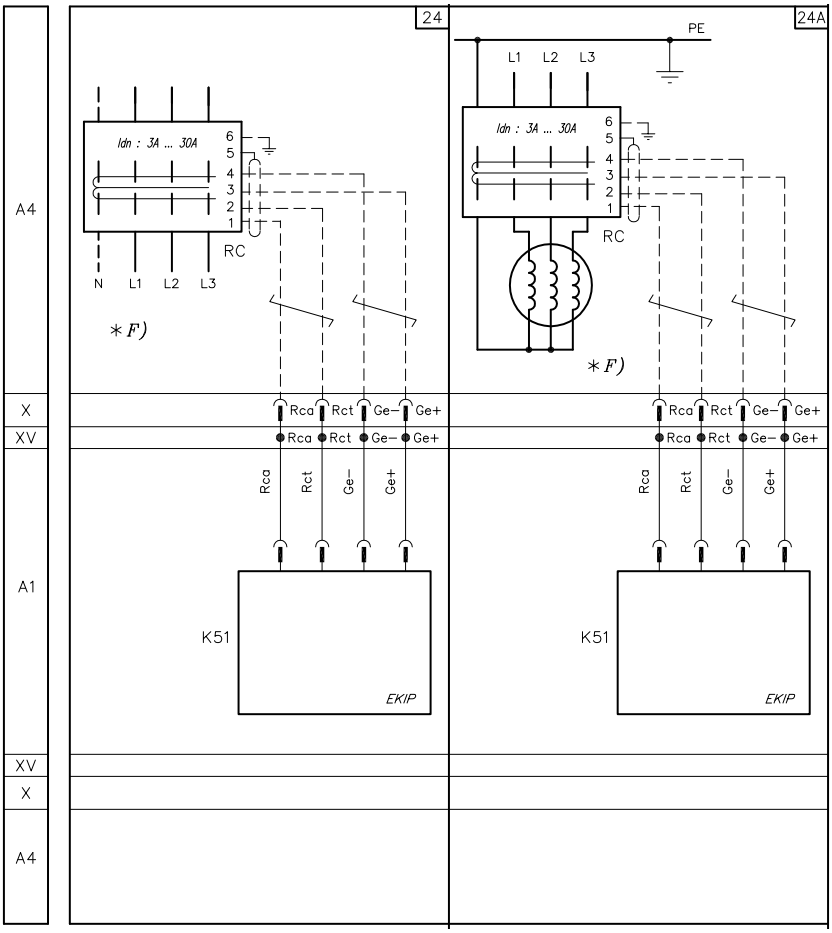
—
16 - 17 only for XT7 circuit-breakers



Wiring diagrams
Diagrams for XT7 and XT7 M

24) RC residual current sensor input (ANSI 64&50N TD)
24a) RC differential ground fault protection sensor input (ANSI 87N)

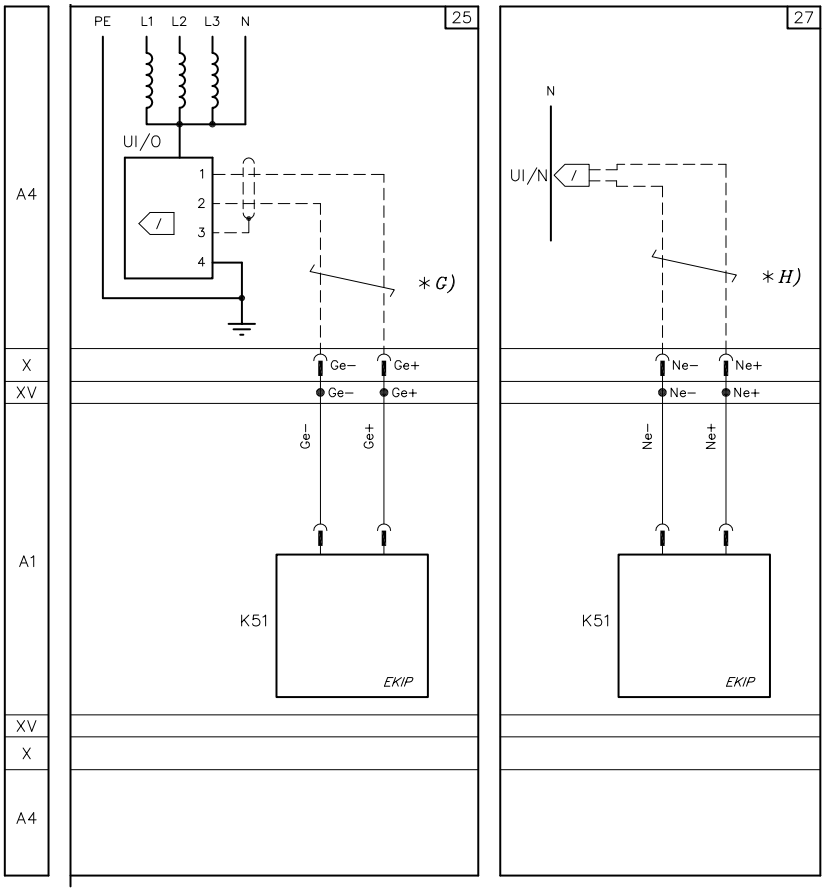
—
24 - 24a as an alternative to each other and to figure 25



25) Transformer star centre sensor input

27) Current sensor input on external neutral (only for 3-pole circuit breaker)

—
25 as an alternative
to figures 24 - 24a



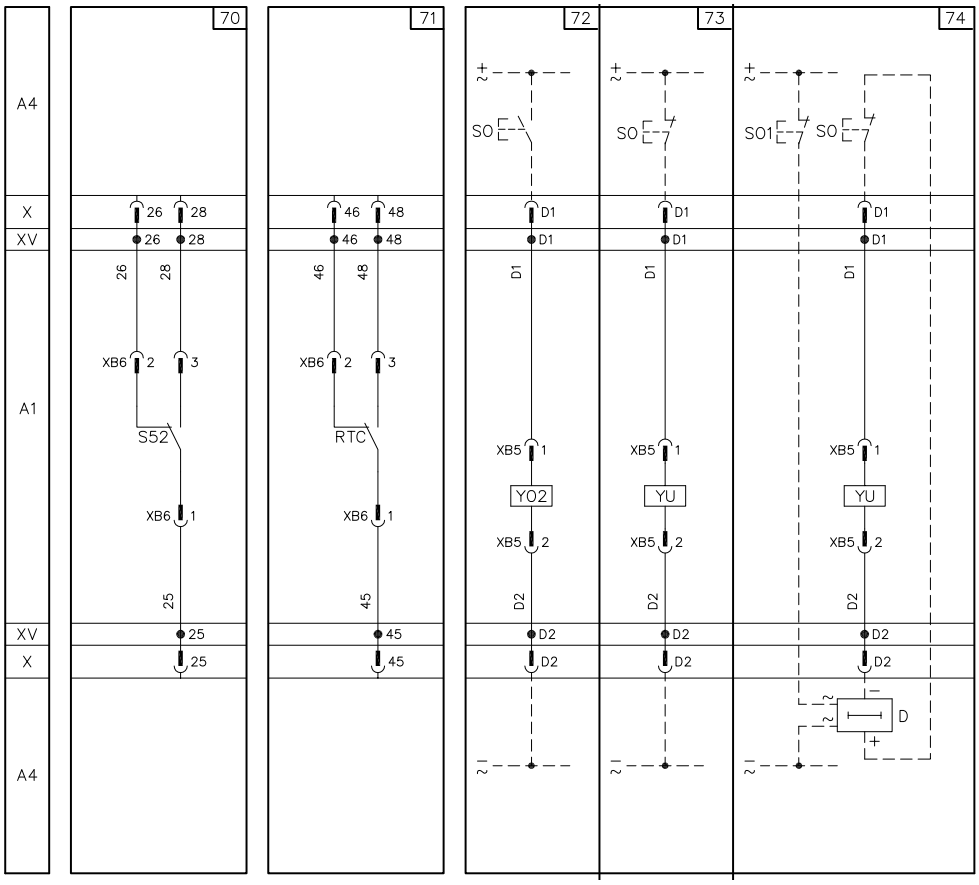
Wiring diagrams
Diagrams for XT7 and XT7 M

70) Y02/YU opening coil state signaling contact – S52
71) Ready to close contact – RTC
72) Second opening coil – YO2
73) Undervoltage coil – YU
73) Undervoltage coil with externa time-lag device YU, D

—
70 only for XT7 circuit-breakers

71 only for XT7 M circuit-breakers

72 - 73 - 74 as an alternative to each other

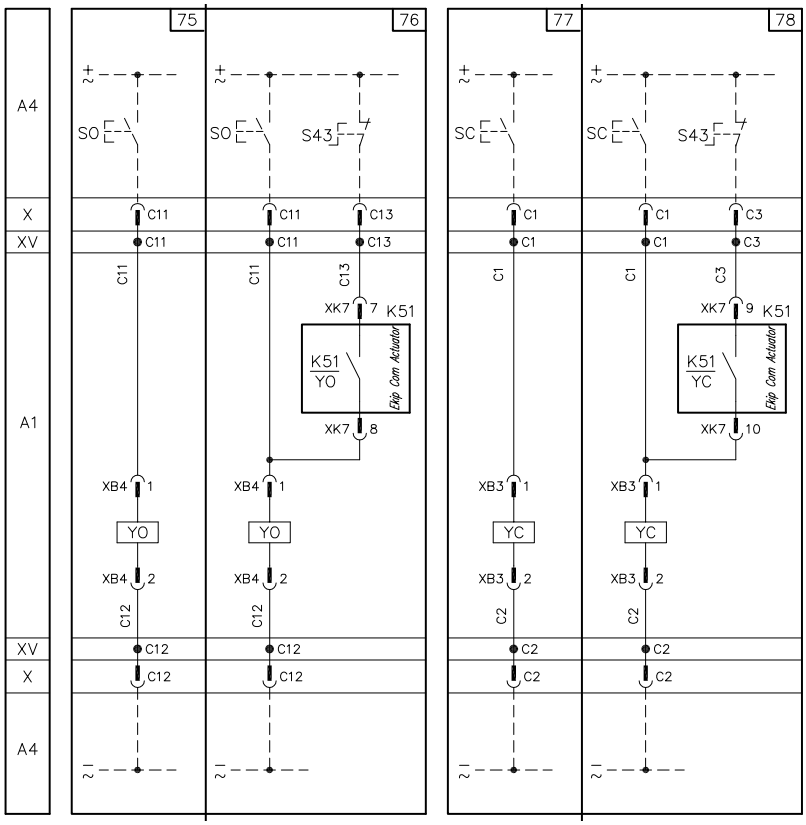


75) First opening coil – YO
76) First opening coil with control from protection trip unit – YO, Ekip Com Actuator
77) First closing coil – YC
78) First opening coil with control from protection trip unit – YC, Ekip Com Actuator

—
75 - 76 as an alternative to each other

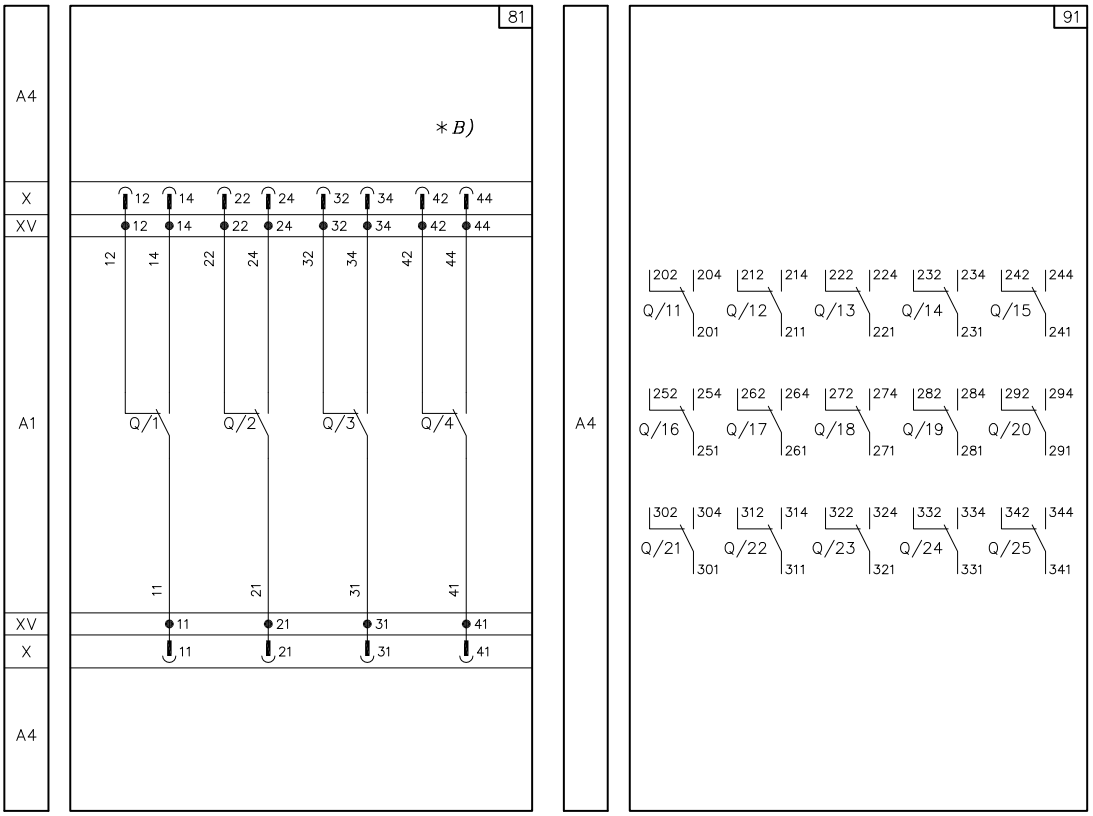
77 - 78 only for XT7 M circuit-breakers

77 - 78 as an alternative to each other



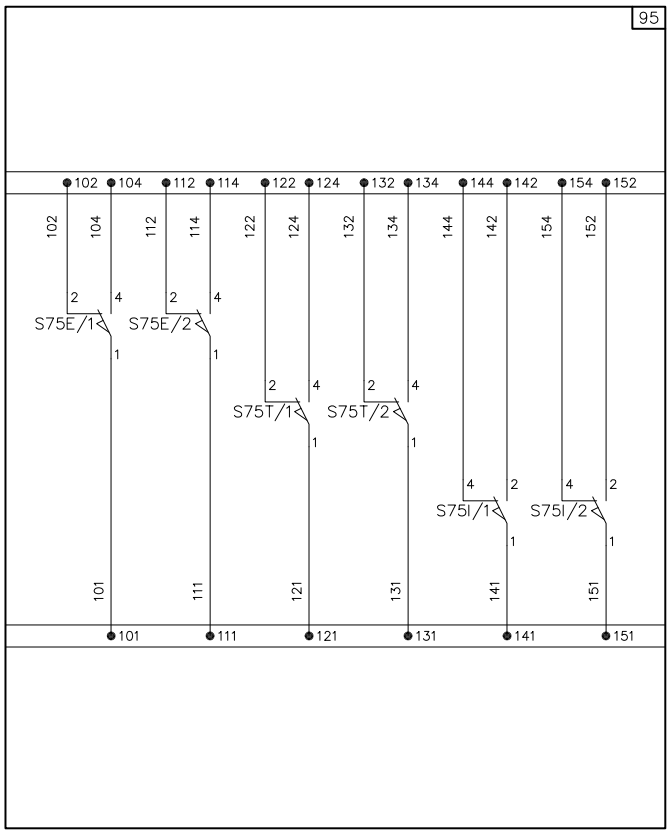
Wiring diagrams
Diagrams for XT7 and XT7 M

81) Open/Close auxiliary contacts of the circuit-breaker (first set)
91a) Supplementary open/close auxiliary contacts outside the circuit-breaker

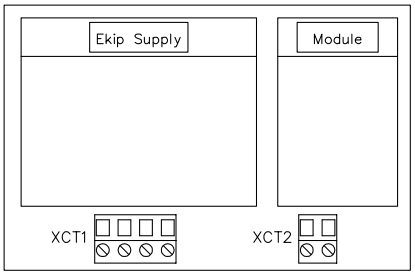


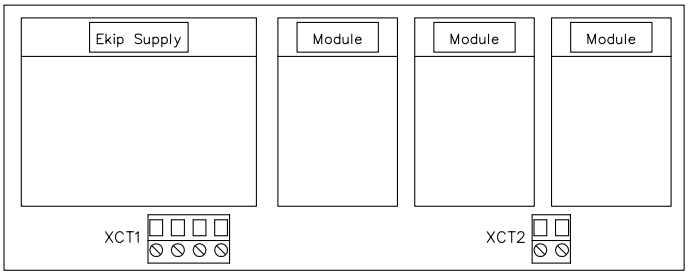
95a) Contacts for signaling of circuit-breaker in racked-in, test, racked-out position

—
only for withdrawable version



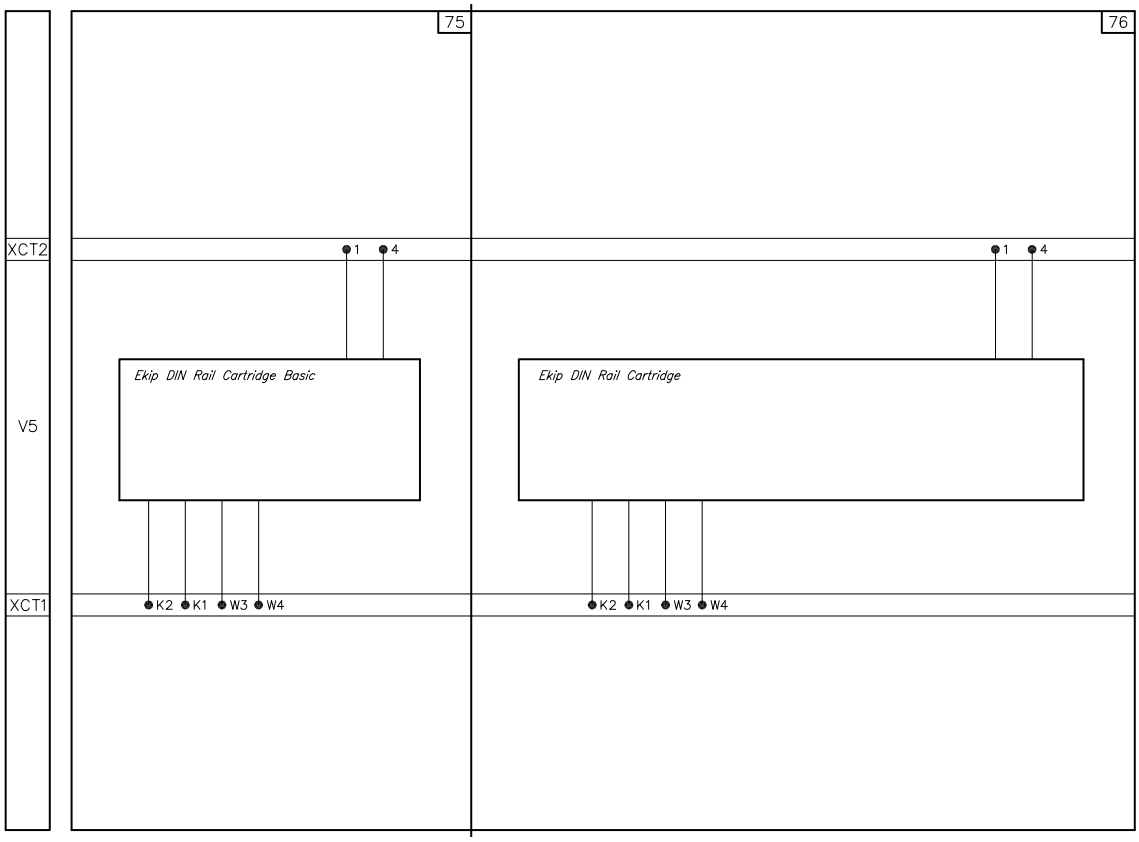
Wiring diagrams
XT2-XT4-XT7-XT7 M modules





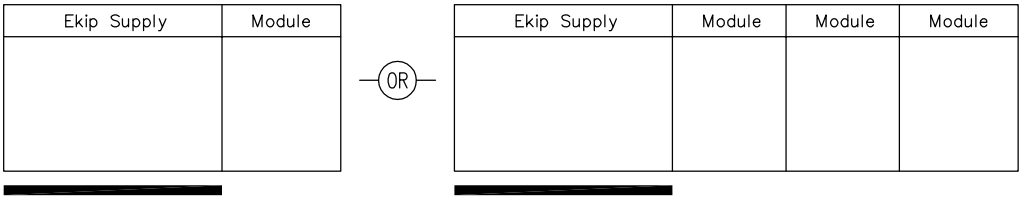
75a) Ekip Cartridge for one module and one Ekip Supply
76a) Ekip Cartridge for three modules and one Ekip Supply

—
75 - 76 as an alternative to each other

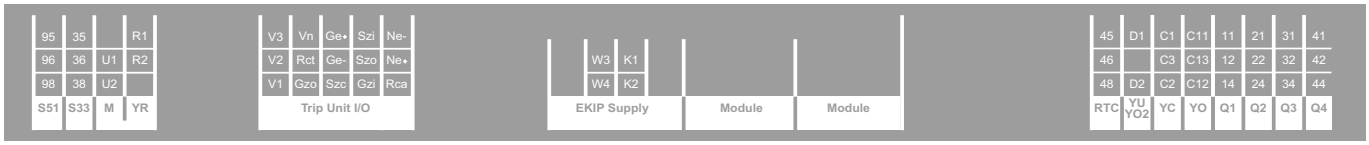


Installation slot

For XT2-XT4 Ekip Cartiridge

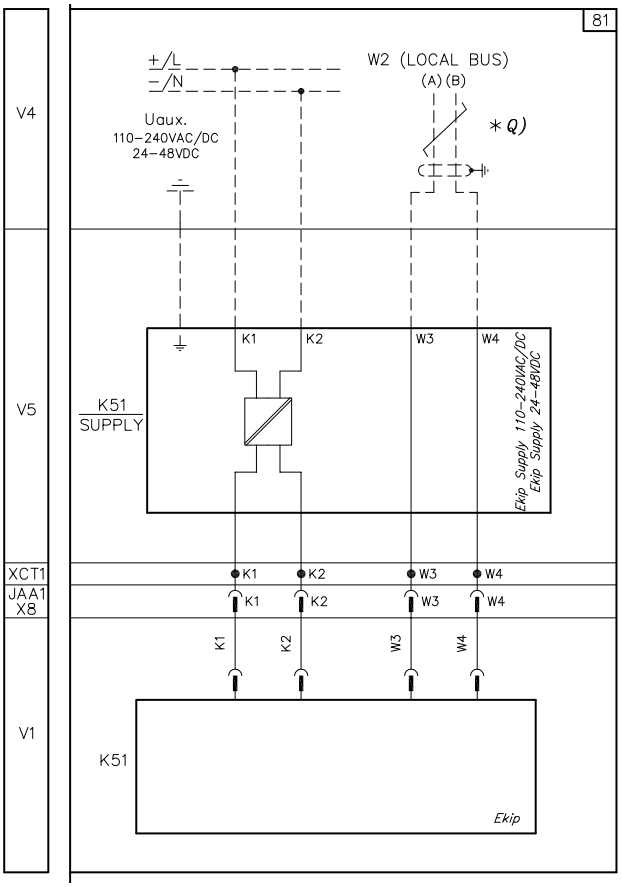


For XT7-XT7M terminal box



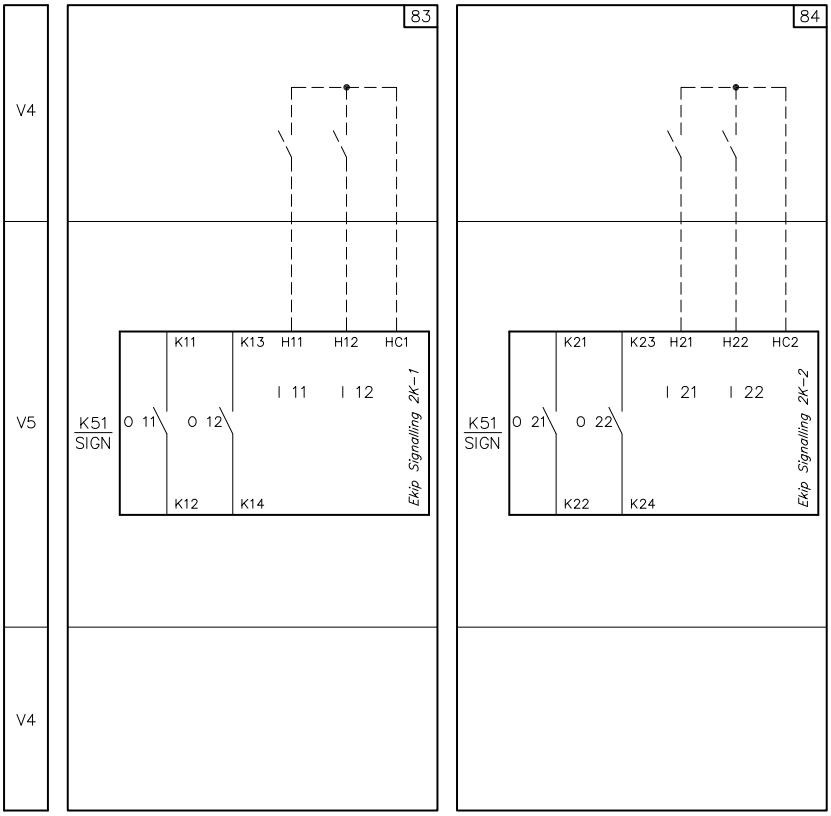
81a) Ekip Supply: auxiliary supply through module 110-240Vac/dc or 24/48Vdc and local bus

—
81 as an alternative to figure 49

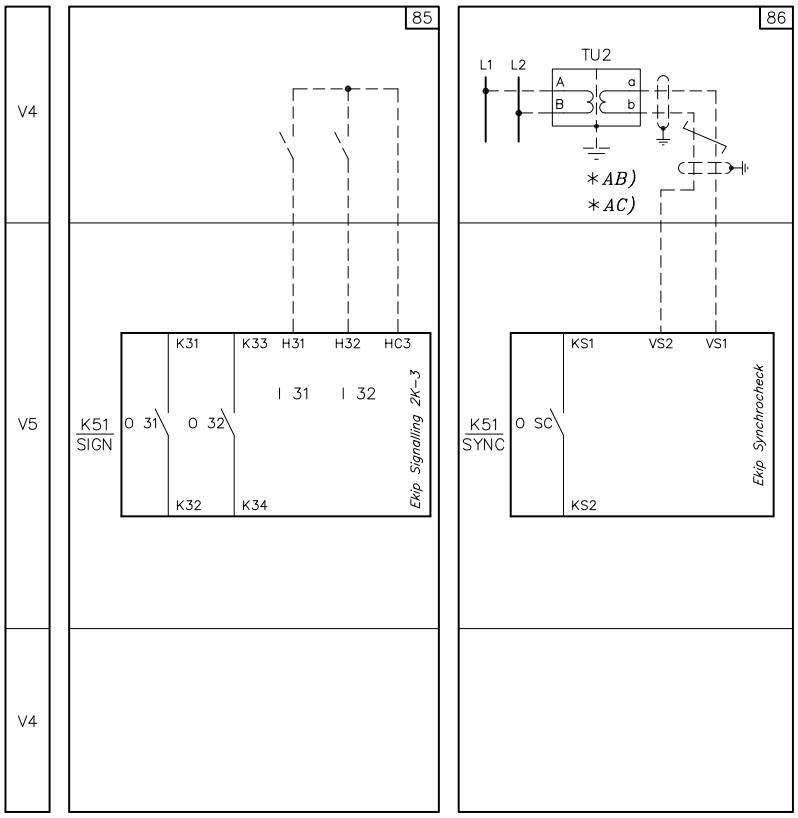


Wiring diagrams
XT2-XT4-XT7-XT7 M modules

83) Ekip Signalling 2K-1
84) Ekip Signalling 2K-2

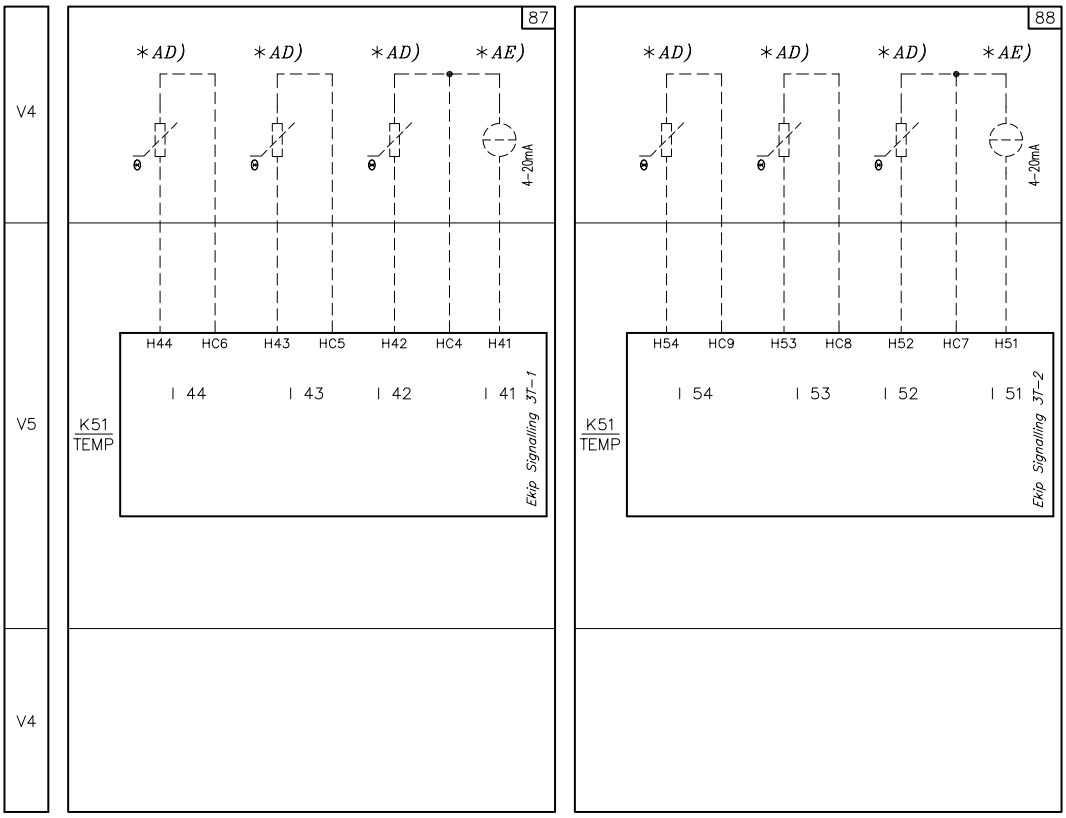


85) Ekip Signalling 2K-3
86) Ekip Synchrocheck

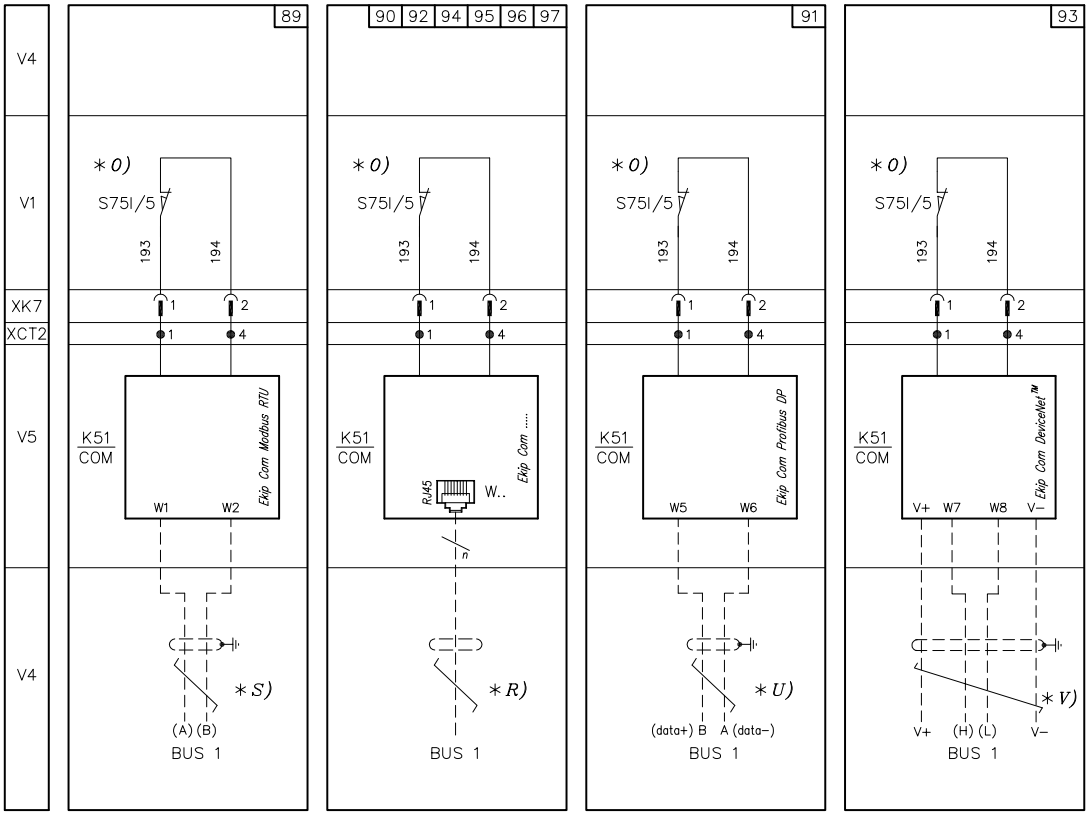


Wiring diagrams
XT2-XT4-XT7-XT7 M modules

87) Ekip Signalling 3T-1
88) Ekip Signalling 3T-2



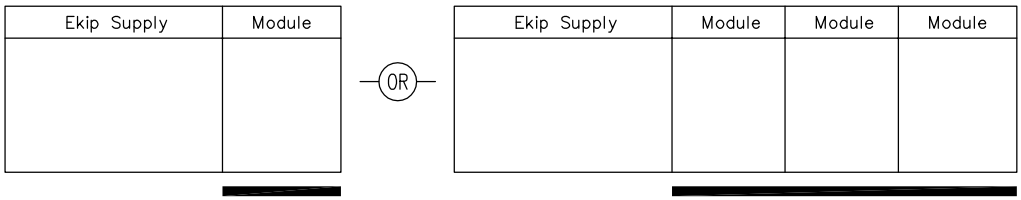
89) Ekip Com Modbus RTU
90) Ekip Com Modbus TCP
92) Ekip Com Ethernet/IP
94) Ekip Com IEC61850
95) Ekip Link
96) Ekip Com HUB
97) Ekip Com Profinet
91) Ekip Com Profibus DP
93) Ekip Com DeviceNet



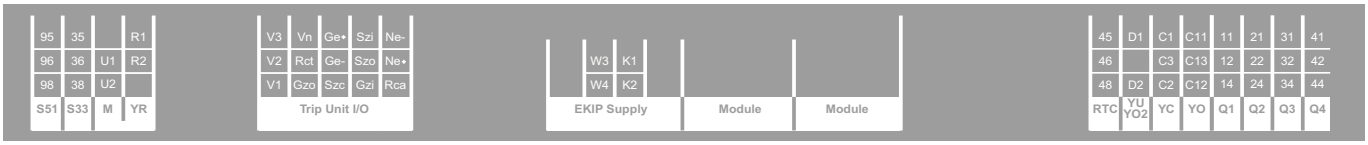
Wiring diagrams
XT2-XT4-XT7-XT7 M modules

Installation slot

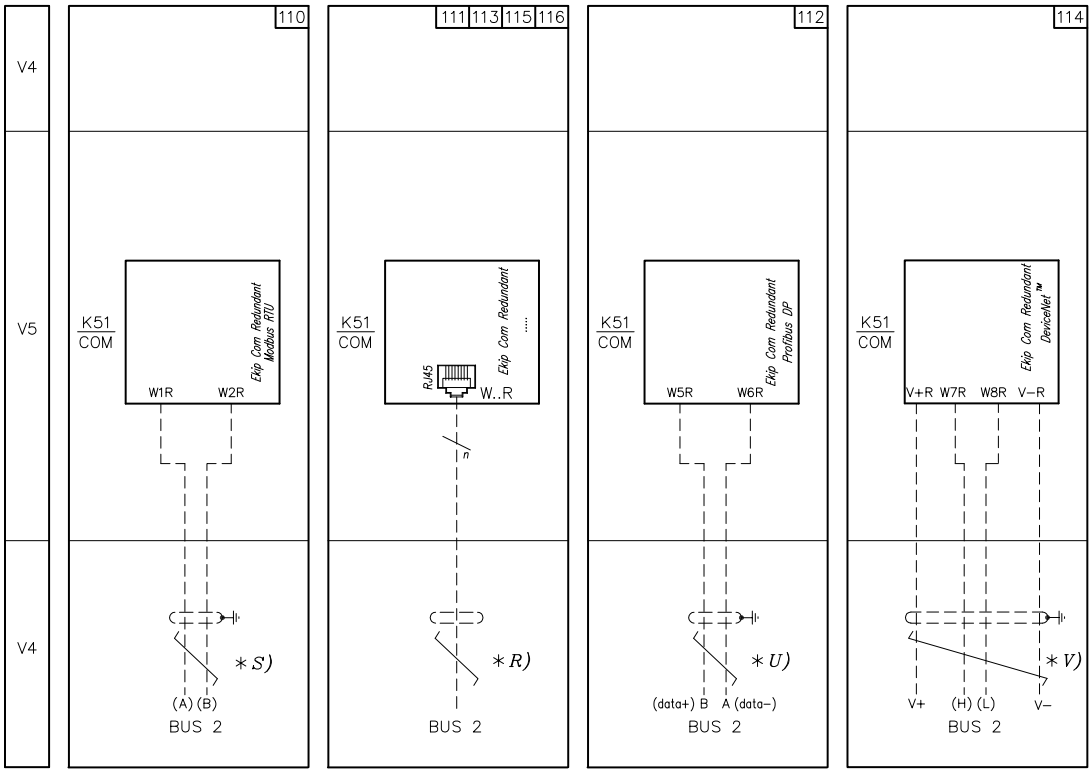
For XT7-X7M terminal box



For XT2-XT4 Ekip Cartiridge



110) Ekip Com Modbus RTU redundant
111) Ekip Com Modbus TCP redundant
113) Ekip Com Profinet redundant
115) Ekip Com Ethernet IP redundant
116) Ekip Com IEC61850 redundant
112) Ekip Com Profibus DP redundant
114) Ekip Com Devicenet™ redundant



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1SDC210101D0201 annex to catalog 1SDC210100D0201- 10/2018