

SOFTSTARTER



- Reduces wear in the entire drive train through soft start-up
- Optimal starting torque through intelligent current control during start-up
- Protects the engine through integrated, adjustable motor protection with I²t-monitoring
- Minimises wiring effort and component costs: integrated bypass and motor protection
- Safe to use: comprehensive self-monitoring

Three phase AC motors have proven themselves for the operation of pumps, conveyor belts, compressors and countless other drive technology applications. The direct start or the star-delta starter cause impact on the mechanical components in the drive train. This leads to signs of wear, damage and premature failures. On the other hand, abrupt starts lead to voltage drops which burden the power supply network and affect the surrounding components.

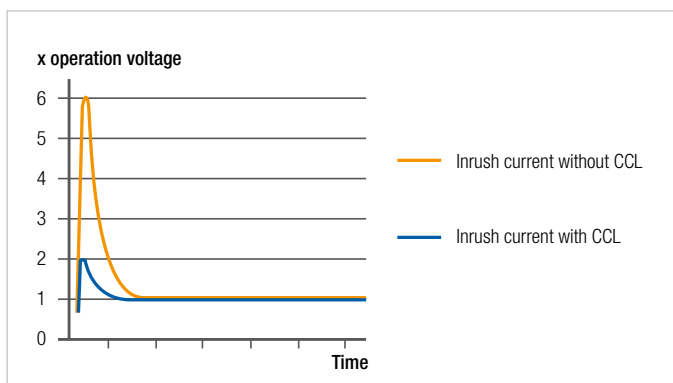
Softstarter by Comat Releco prevents disruptions and ensures a smooth start-up with a reduced starting torque and slow breaking sequences without loading the drive system. Thanks to modern semiconductor power amplifiers and fanless design, you can enjoy absolutely wear-free. The compact construction with integrated cooling element only requires little space in the control cabinet. Softstarter by Comat Releco is available in four series:

The starting torque limiters of the CTC range are activated via an upstream contactor. The start-up torque can be limited to 1 to 85 % of the nominal torque. Typical applications are blowers and smaller machinery.

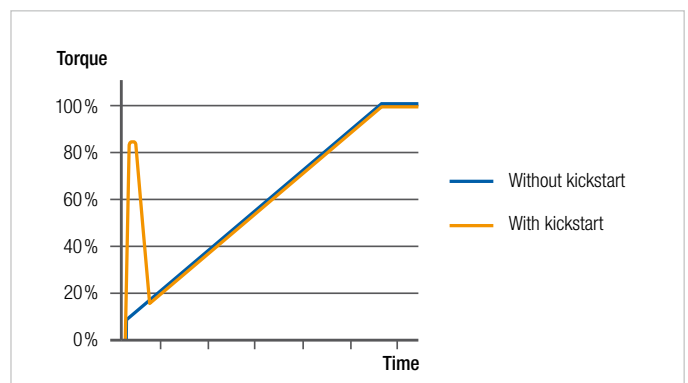
The CCL range has been developed for the operation of heat pumps and compressors. Intelligent current limitation during start-up reduces the drive power by up to 65%. The integrated motor protection allows the adjustment of the nominal power and replaces an additional motor protection switch. Thanks to an integrated bypass relay, there are no additional costs for external bridging.

The CCM range is available with two or three switched phases and is designed for a large number of switching cycles per hour. The bypass is integrated in accordance with the version. Separate potentiometers allow the adjustment of start-up and breaking times, as well as the kick-start function, and the start-up torque can be limited to 0 to 85 % of the nominal value. The CCMB range also offers a dynamic break function with automatic standstill detection.

Starting current limitation with CCL



Starting torque control with CCM



The starting torque limiters of the CTC range are activated via an upstream contactor. The start-up torque can be limited to 1 to 85 % of the nominal torque. Typical applications are blowers and smaller machinery.



		CTC3415	CTC3425
Output			
Switching element		Thyristor	Thyristor
Numbers of phases		3	3
Nominal voltage (U_{nom})	V AC	400	400
Output voltage range	V AC	208–480	208–480
Reverse voltage	V_{rrm}	1200	1200
Peak reverse voltage	V_{rsm}	1300	1300
Min. load	mA	50	50
Max. leakage current	mA	5	5
Max. inrush current	A	120	200
Operation current AC-53B @ U_{nom}	A	15	25
Switching cycles / h.	Cycl./h	3000	3000
Startup time	s	0,5...5 s	0,5...5 s
Max. response time	ms	1 Periode	1 Periode
Limit load	A^2s	1800	6300

Mechanical data

Dimension drawing		b	b
Cross section	mm^2	4	4

General data CTC

Insulation: Insulation voltage: 4 kV | Dielectric strength: 660V | **Approvals and conformities:** 

Ambient conditions: Operating temperature: -5–40 °C | Storage temperature: -20–80 °C | Protection: IP20

The CCL range has been developed for the operation of heat pumps and compressors. Intelligent current limitation during start-up reduces the drive power by up to 65%. The integrated motor protection allows the adjustment of the nominal power and replaces an additional motor protection switch. Thanks to an integrated bypass relay, there are no additional costs for external bridging. Comprehensive monitoring detects over- and undercurrent, incorrect phase sequences and wiring errors. CCL Softstarter is available in three versions with a nominal current of up to 35 A. Cage clamp terminals allow quick wiring.



		CCL33H415US	CCL33H425US	CCL33H435US
Output				
Switching element		Thyristor	Thyristor	Thyristor
Numbers of phases		3	3	3
Bypass		integrated	integrated	integrated
Nominal voltage (U_{nom})	V AC	400	400	400
Output voltage range	Vrms	230...400	230...400	230...400
Reverse voltage	Vrrm	1200	1200	1200
Peak reverse voltage	Vrsm	1300	1300	1300
Min. load	A	1,5	2,5	3,5
Max. leakage current	mA	5	5	5
Max. inrush current ($t=1$ s)	A	90	150	210
Operation current AC-58 @ U_{nenn}	A	15	25	35
Switching cycles / h.	Cycl./h	max. 12	max. 12	max. 12
Response/Release time	ms	500	500	500
Limit load	A ² s	610	1800	1800

Mechanical data

Dimension drawing		e	e	e
Cross section	mm ²	6	6	6

General data CCL33

Input: Voltage 230 V AC | Min. voltage: 196 V AC | Max. voltage: 264 V AC | Release voltage 110 V AC | Max. current: 7 mA

Insulation: Insulation voltage: 4 kV | Dielectric strength: 660 V

Ambient conditions: Operating temperature: -20 bis 65 °C | Storage temperature: -20 bis 80 °C | Protection: IP20



Softstarter CCM3 have two switched phases and are available with a nominal current of 3 to 50 A. The types CCM3...USi feature an integrated bypass. Separate potentiometers allow the adjustment of start-up and breaking times, as well as the kick-start function, and the start-up torque can be limited to 0 to 85 % of the nominal value.



		CCM3H203USi	CCM3H403USi ^[3]	CCM3H415	CCM3H425
Output					
Switching element		Thyristor	Thyristor	Thyristor	Thyristor
Numbers of phases		2	2	2	2
Bypass		integrated	integrated	—	—
Nominal voltage (U _{nom})	V AC	230	400	400	400
Output voltage range	V AC	208 - 240	400 - 480	400 - 480	400 - 480
Reverse voltage	V _{rrm}	600	1200	1200	1200
Peak reverse voltage	V _{rsm}	650	1300	1300	1300
Min. load	mA	250	250	250	250
Max. leakage current	mA	5	5	5	5
Max. inrush current	A	12	12	75	125
Operation current AC-53B @ U _{enn}	A	3	3	15	25
Switching cycles / h.	Cycl./h	32	32	3000	3000
Startup time	s	0,5...10	0,5...10	0,5...10	0,5...20
Deceleration time	s	0,5...10	0,5...10	0,5...10	0,5...20
Limit load	A ² s	72	72	1800	6300

Mechanical data

Dimension drawing		a	a	b	c
Cross section	mm ²	4	4	4	6

^[3] Availability on request


General data CCM3

Input: Voltage 24–230 V AC (CCM3H415DS: 24–60 VDC/24–480 V AC) | Min. voltage: 20,4 V AC | Max. voltage: 253 V AC

Release voltage 5 V AC | Max. current: 15 mA

Insulation: Insulation voltage: 4 kV | Dielectric strength: 660 V

Ambient conditions: Operating temperature: -5 bis 40 °C | Storage temperature: -20 bis 80 °C | Protection: IP20

Approvals and conformities: 

Softstarter CCM33 have three switched phases and are available with a nominal current of up to 50 A. The types CCM33...USi feature an integrated bypass. Separate potentiometers allow the adjustment of start-up and breaking times, as well as the kick-start function, and the start-up torque can be limited to 0 to 85 % of the nominal value.



		CCM33H530USi	CCM33H550USi
Output			
Switching element		Thyristor	Thyristor
Numbers of phases		3	3
Bypass		integrated	integrated
Nominal voltage (U_{nom})	V AC	480	480
Output voltage range	V AC	200...480	200...480
Reverse voltage	V _{rrm}	1200	1200
Peak reverse voltage	V _{rsm}	1300	1300
Min. load	mA	50	50
Max. leakage current	mA	5	5
Max. inrush current	A	150	300
Operation current AC-53B @ U_{nenn}	A	30	50
Switching cycles / h.	Cycl./h	120	120
Startup time	s	0,5...30 s	0,5...30 s
Deceleration time	s	0,5...60 s	0,5...60 s
Limit load	A ² s	6300	25300

Mechanical data

Dimension drawing		c	d
Cross section	mm ²	6	35

General data CCM33

Input: Voltage 24–230 V AC | Min. voltage: 20,4 V AC | Max. voltage: 253 V AC | Release voltage 5 V AC | Max. current: 15 mA

Insulation: Insulation voltage: 4 kV | Dielectric strength: 660 V

Ambient conditions: Operating temperature: -5 bis 40 °C | Storage temperature: -20 bis 80 °C | Protection: IP20

Softstarter CCMB also offers a dynamic break function with automatic standstill detection in addition to the functions of the CCM3 range. They provide an output for an external bypass and have a nominal current of 25A.



		CCMB3H225	CCMB3H425 ^[2]
Output			
Switching element		Thyristor	Thyristor
Numbers of phases		3	2
Bypass		extern	externally
Nominal voltage (U _{nom})	V AC	230	400
Output voltage range	V AC	208–240	400–415
Reverse voltage	V _{rrm}	1100	1600
Peak reverse voltage	V _{rsm}	1200	1650
Min. load	A	1	1
Max. leakage current	mA	5	5
Max. inrush current	A	200	200
Operation current AC-53a @ U _{enn}	A	25	25
Response/Release time	ms	100	100
Limit load	A ² s	6300	6300

Mechanical data

Dimension drawing		c	c
Cross section	mm ²	6	6

^[2] Availability on request


General data CCMB3

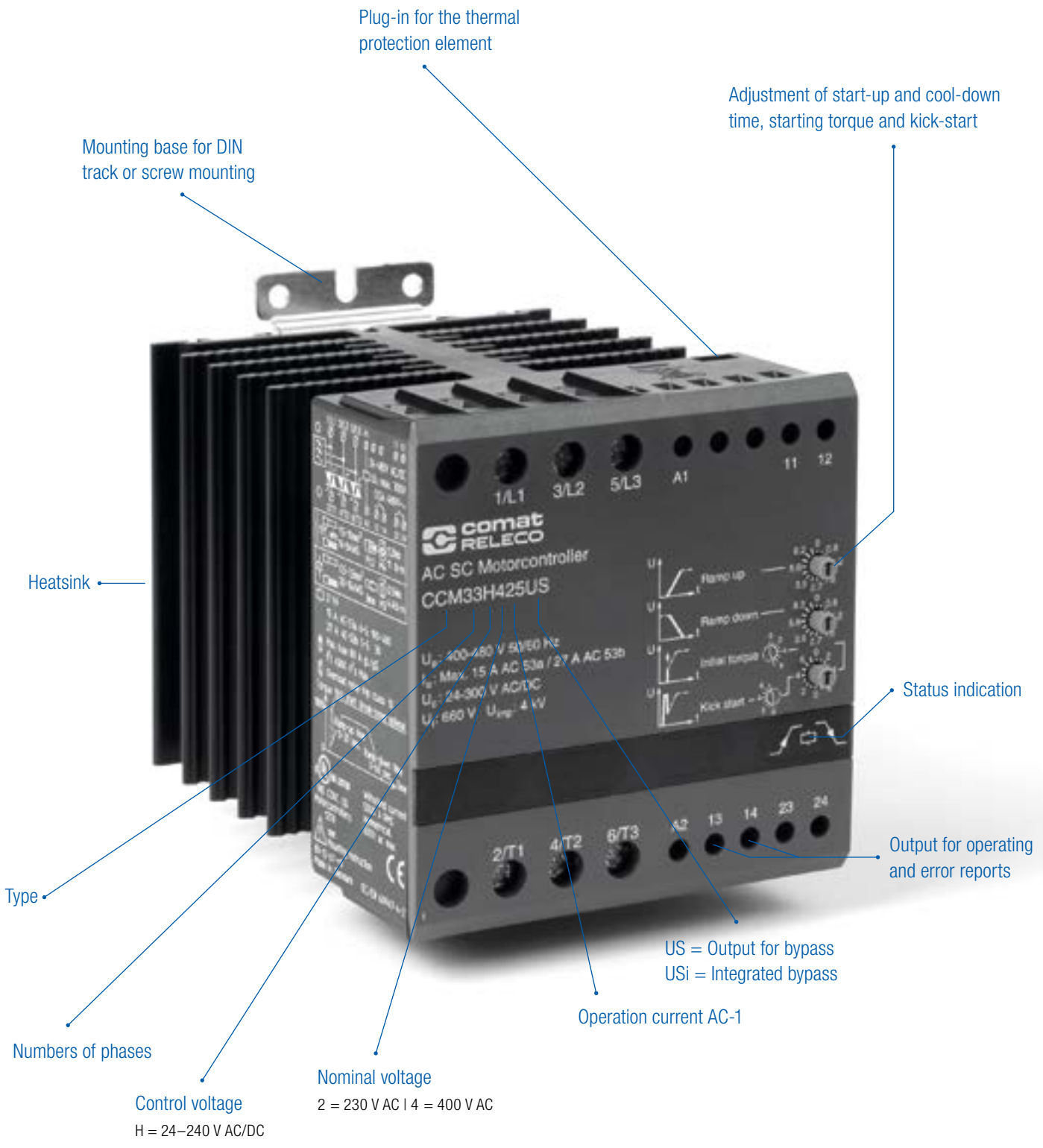
Input: Voltage 24–230 V AC | Min. voltage: 20,4 V AC | Max. voltage: 253 V AC | Release voltage 5 V AC | Max. current: 15 mA

Control power max.: 2 VA

Insulation: Insulation voltage: 4 kV | Dielectric strength: 660 V

Ambient conditions: Operating temperature: -5 bis 65 °C | Storage temperature: -20 bis 80 °C | Protection: IP20

Approvals and conformities:  _{us}



Plug-in for the thermal protection element

Adjustment of start-up and cool-down time, starting torque and kick-start

Mounting base for DIN track or screw mounting

Heatsink

Status indication

Output for operating and error reports

US = Output for bypass
USi = Integrated bypass

Operation current AC-1

Nominal voltage
2 = 230 V AC | 4 = 400 V AC

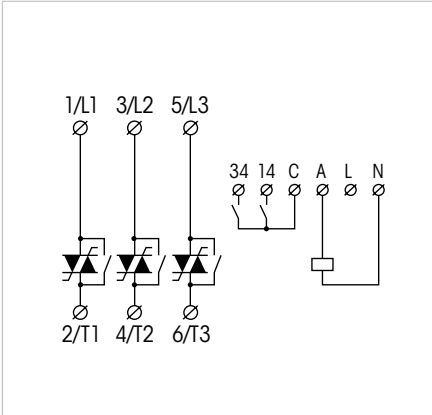
Control voltage
H = 24-240 V AC/DC

Numbers of phases

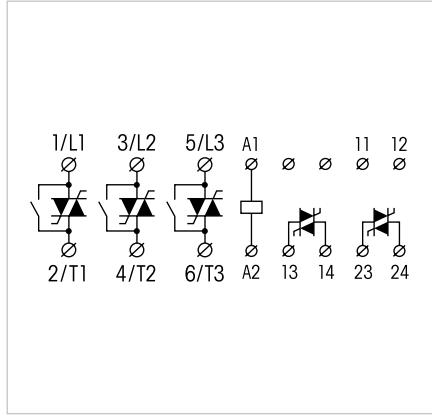
Type

Connections

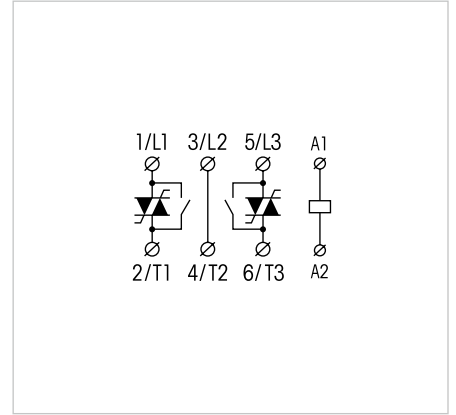
CCL33



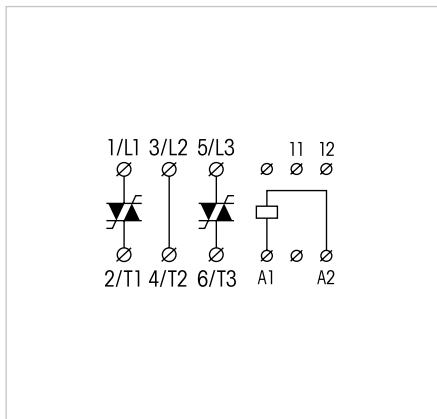
CCM33...USi



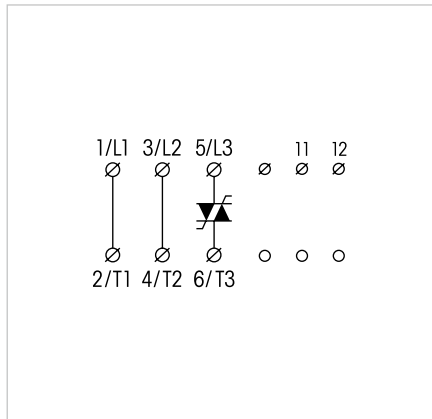
CCM3H403USi



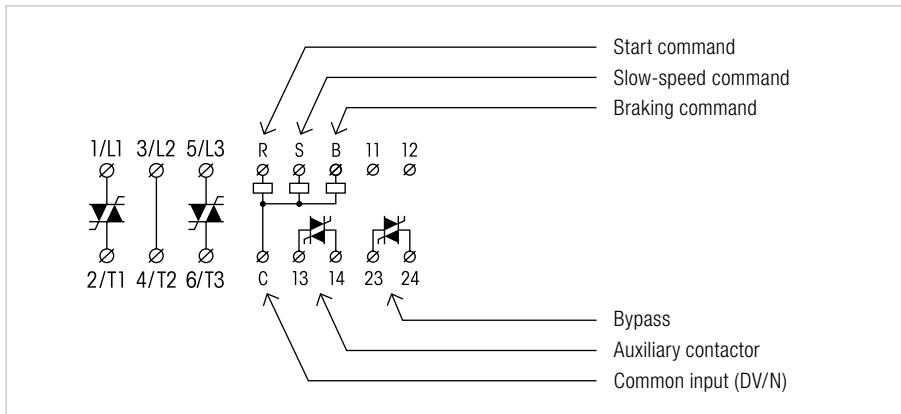
CCM3



CTC3

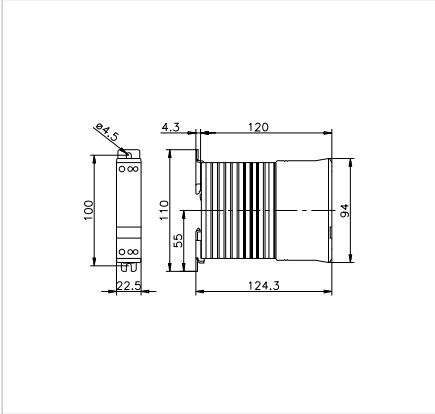


CCMB3

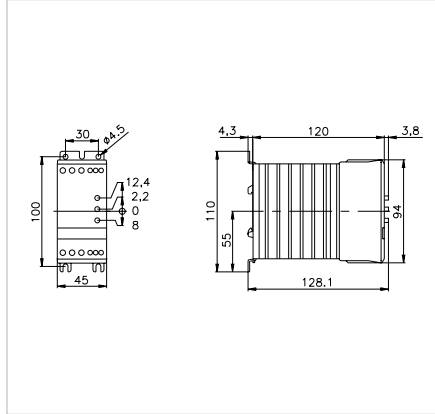


Dimensions

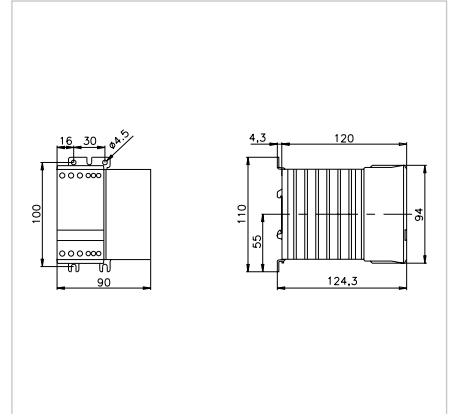
«Dimension drawing a» 22.5 mm module



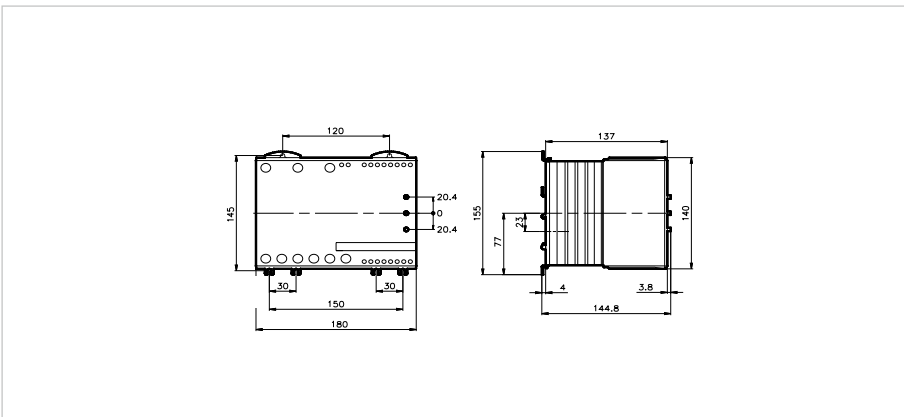
«Dimension drawing b» 45 mm module



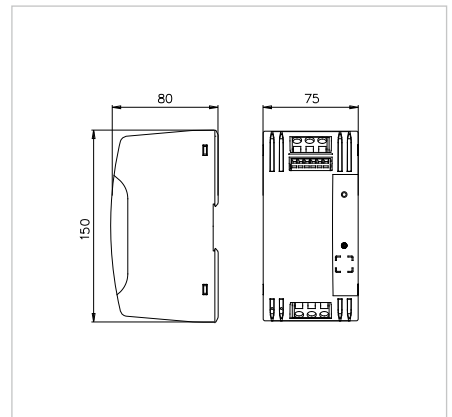
«Dimension drawing c» 90 mm module



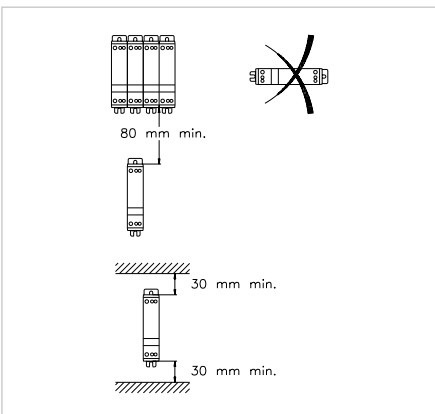
«Dimension drawing d» 180 mm module



«Dimension drawing e» 75 mm module



Mounting distances (Recommended)



Thermal protection element P82-100C

