

HPC-40



Characteristic

- EV precharge relay
- 40A 85°C long time current carrying capacity
- Electrical safety meets IEC 60664-1 requirements
- Small size

Contact parameter

Contact type	1H
Contact resistance	≤10mΩ (at 1A)
Contact rated current	40A
Max. switching voltage	450VDC
Max. breaking current	50A(450VDC) ,more than 1 cycle
Max. switching power	22.5kW
Current carrying capacity	40A: keep
	60A: 1h
	80A: 20min
	160A: 30s
	240A: 10s
	400A: 0.6s

Note: Current carrying capacity data is tested at ambient temperature of 85°C, cross section≥10mm², more detail, please see curve.

Coil parameter

Rated voltage VDC	Operational voltage VDC	Release voltage VDC	Coil power W
12	≤9	≥1	3
24	≤18	≥2	3

Note: The operational voltage and release voltage are conservative values in the full temperature range (-40°C ~ +85°C) .

Environmental characteristics

Shock	Stability	196m/s ²
	Strength	490m/s ²
Vibration		10Hz ~ 500Hz 49m/s ²
Humidity		5% ~ 85%RH
Ambient temperature		-40°C ~ +85°C

Life

Mechanical endurance		2×10 ⁵ ops
Electricity endurance	Resistive load	connect: 7.5×10 ⁴ ops (450VDC,35A)
		connect: 1×10 ³ ops (450VDC,40A)
		connect: 1×10 ⁴ ops (450VDC,10A)

Note 1: Except for special notes, the ambient temperature of electrical durability test is 23°C and the on-break ratio is 0.6s:5.4s.

Electrical characteristics

Insulation resistance		1000MΩ (500VDC)
Dielectric withstand voltage	between contact and coil	3000VAC 1min
	between open contacts	2000VAC 1min
Operate time (at nomi. volt.)		≤30ms
Release time (at nomi. volt.)		≤10ms

Note: The data shown above are initial values.

Other

Terminal	QC (ISO) 、 PCB
Weight	≈50g
Outline dimension	30.0mm×30.0mm×29.2mm

Ordering

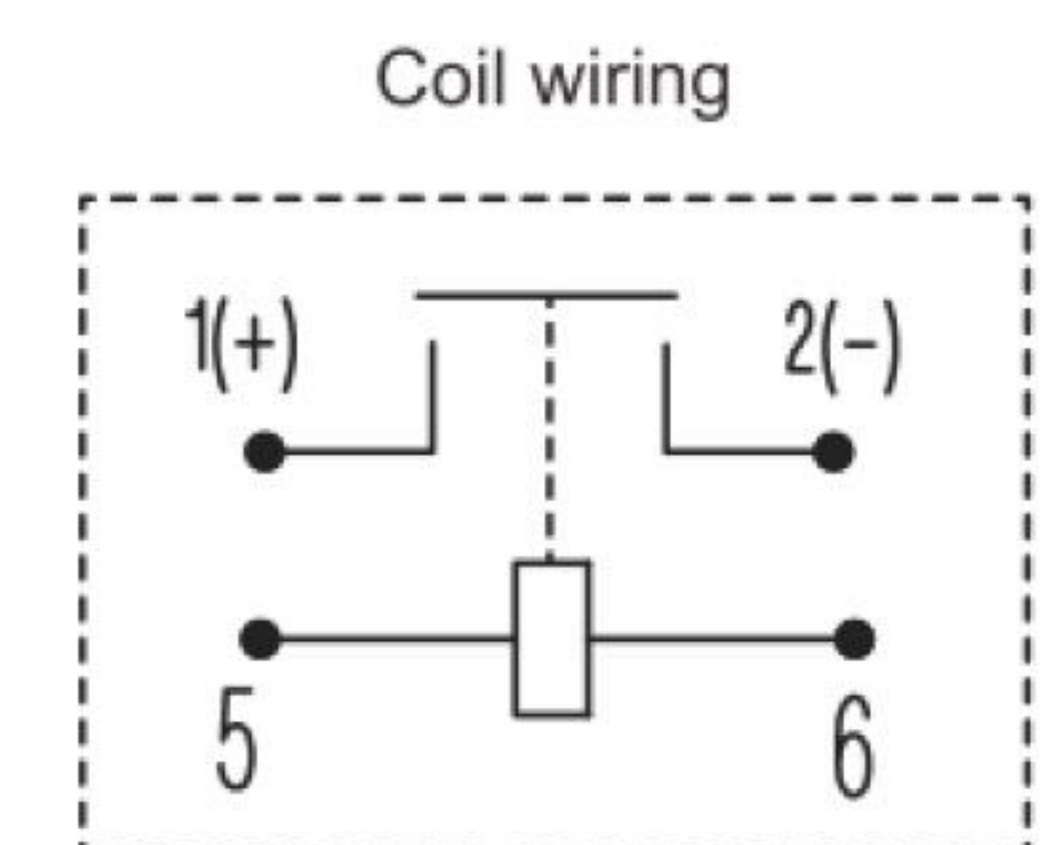
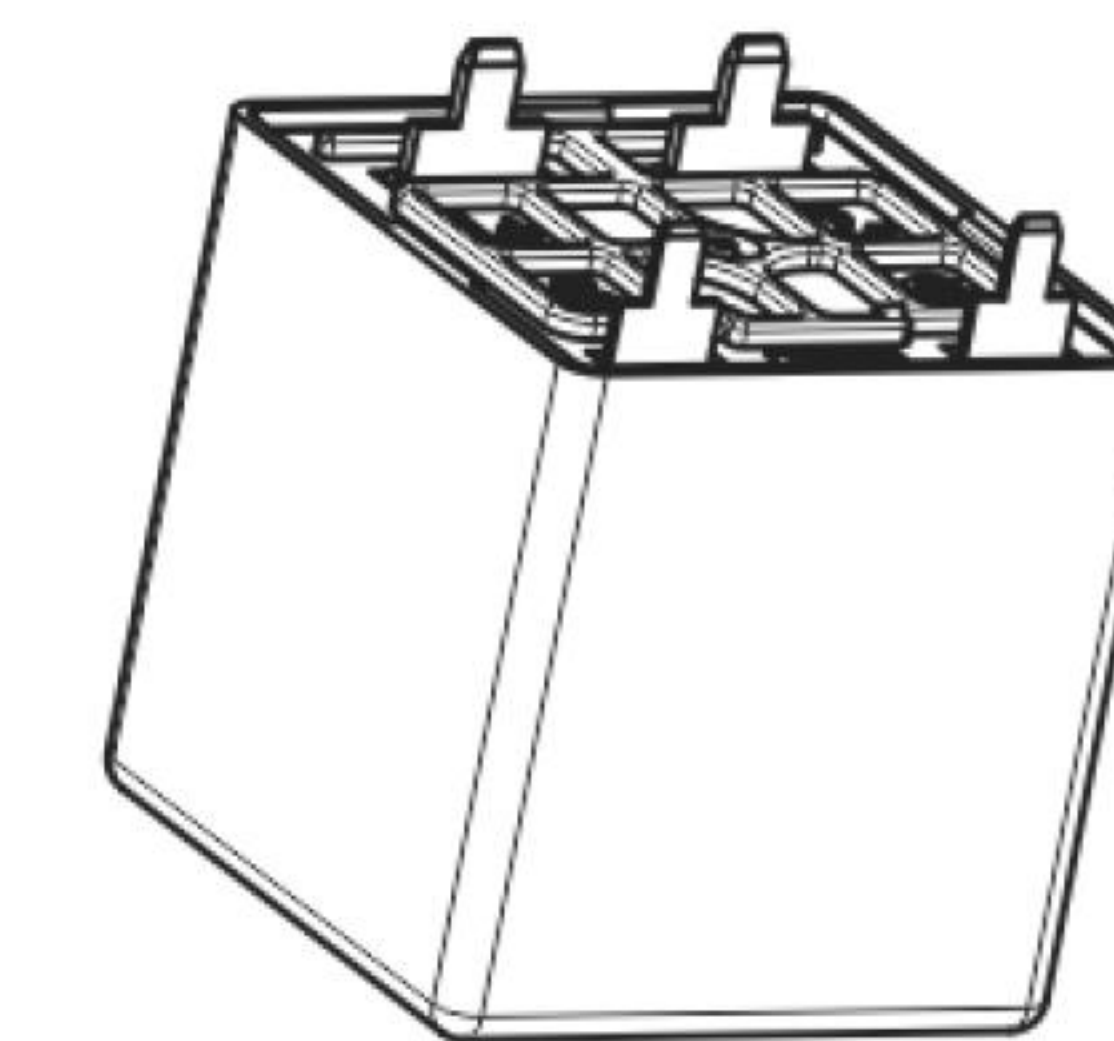
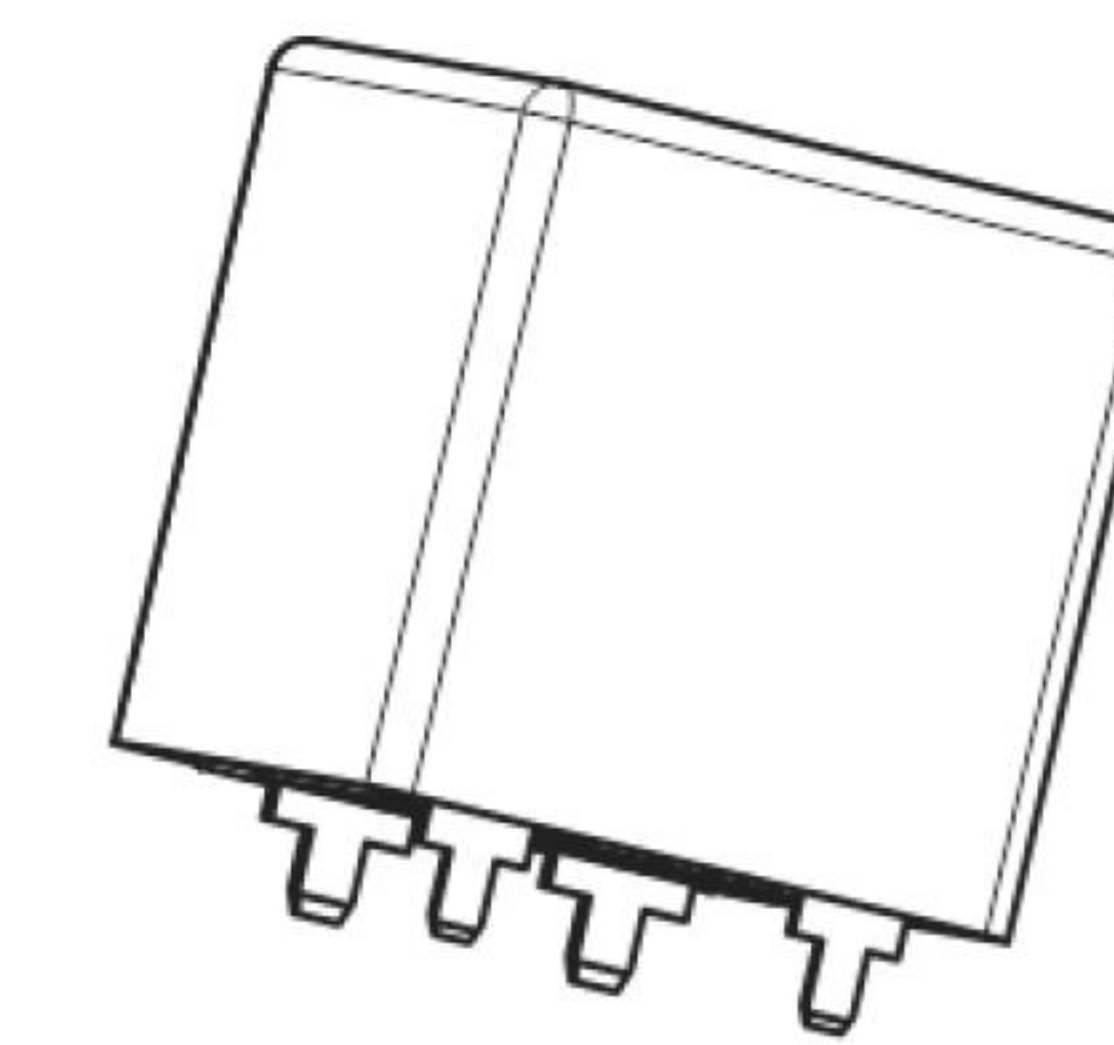
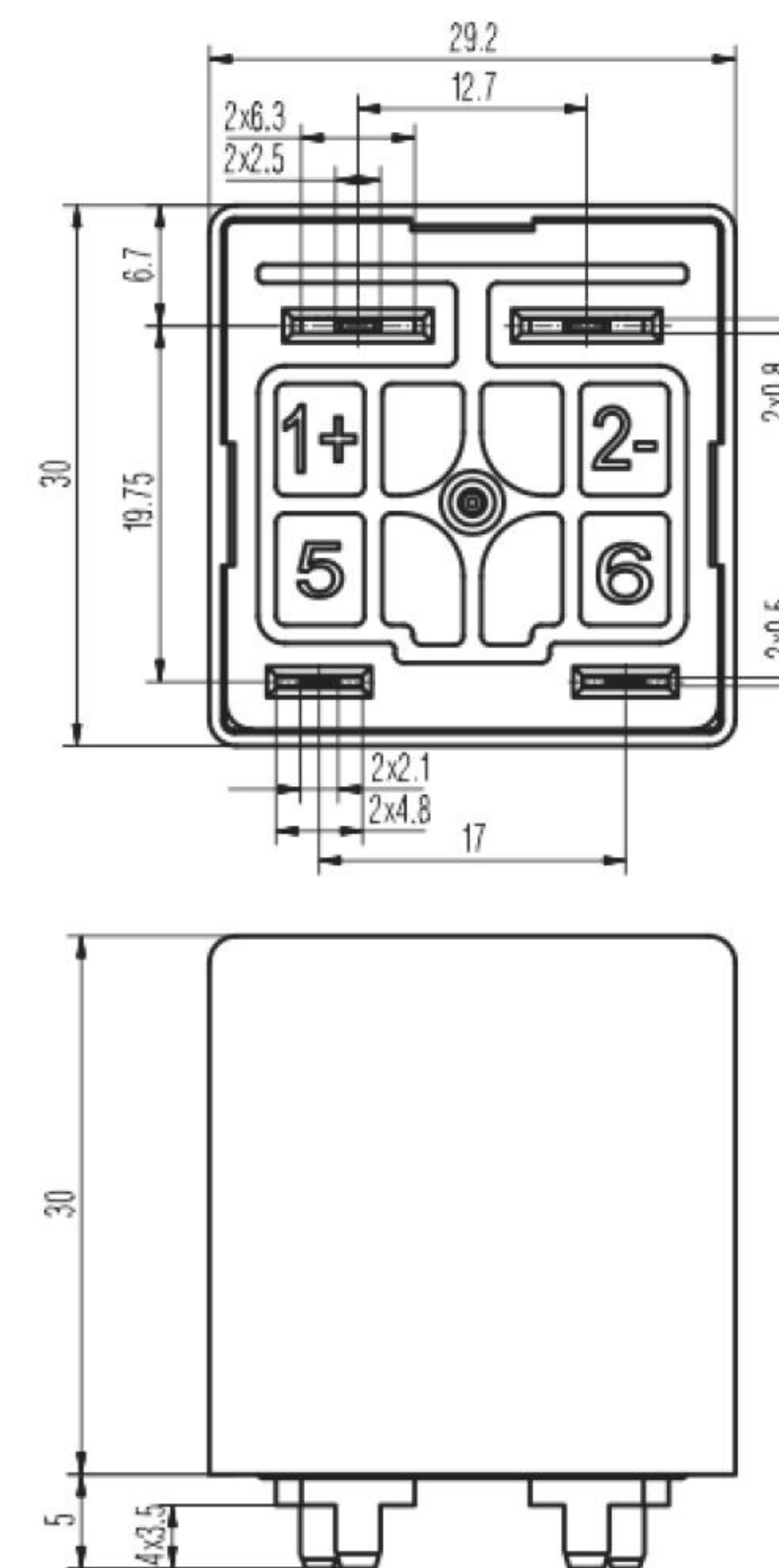
Design Code	HP C 40 /450 -12 -H T P 2 A XXX
Application	C: Pre-charge
Load current	20: 20A
Load voltage	450: 450VDC
Coil voltage	12: 12VDC 24: 24VDC
Contact type	H: With normally open
Raw material of contact	T: Silver alloy
Coil input terminal	P: PCB Q: QC
Load input terminal	Nil: PCB 2: QC
Installing hole	Nil: without installing hole A: with installing hole
Customer No.	XXX: Customer requirement Nil: Standard

Note: The customer special requirement express as customer No. after evaluating between each party.

Outline, coil wiring , installation hole

Unit: mm

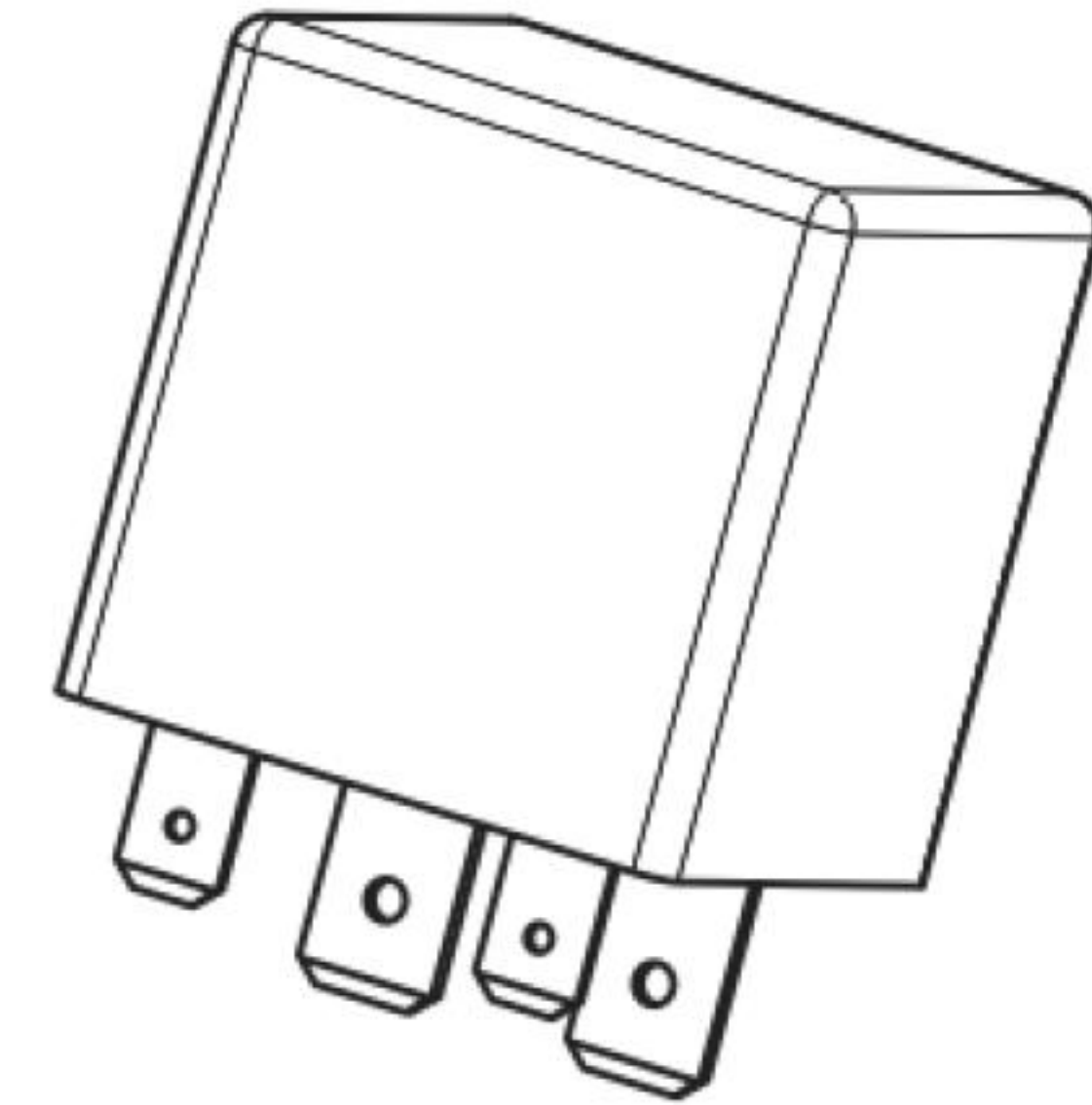
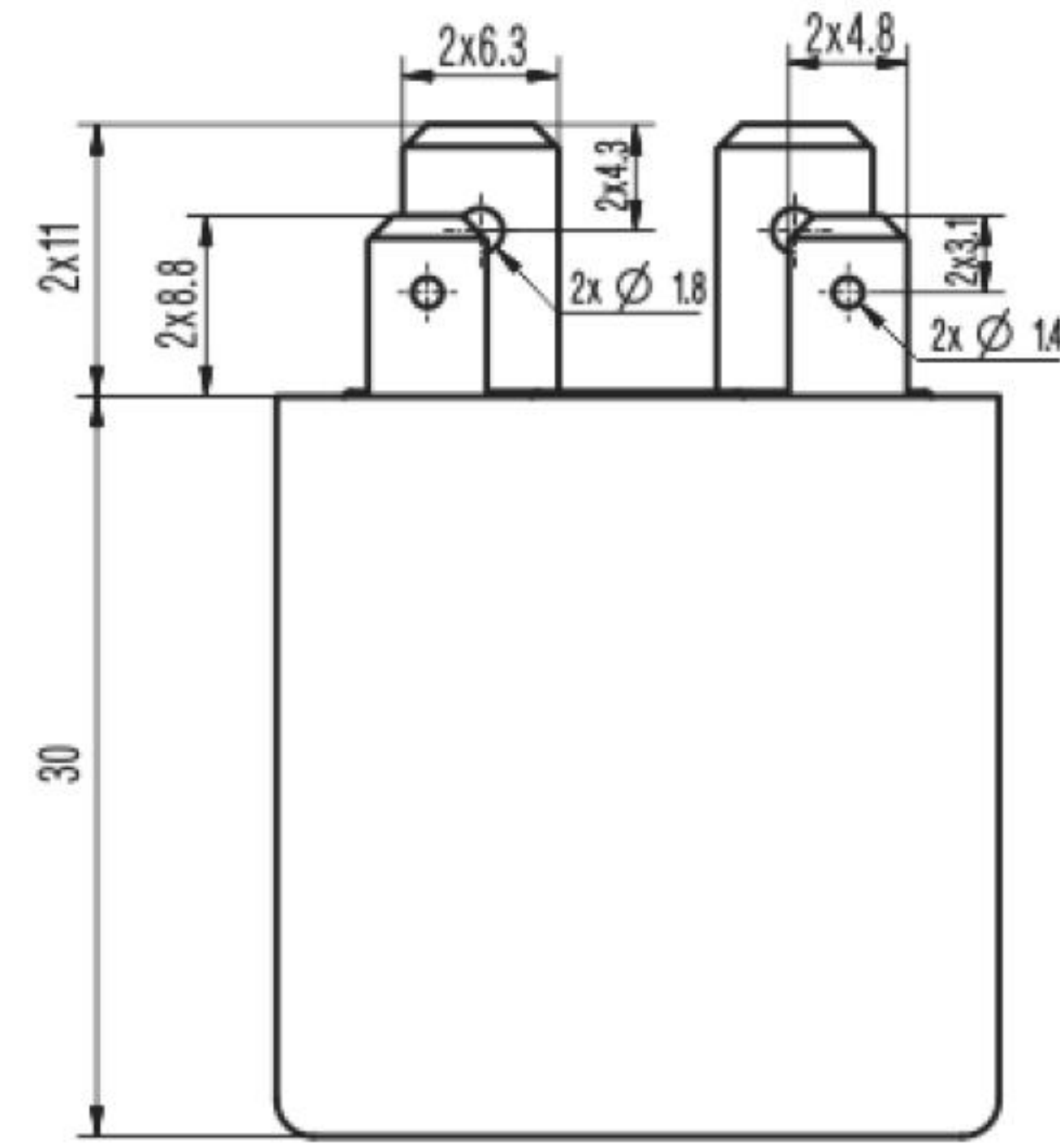
HPC-40/450-XX-HTP



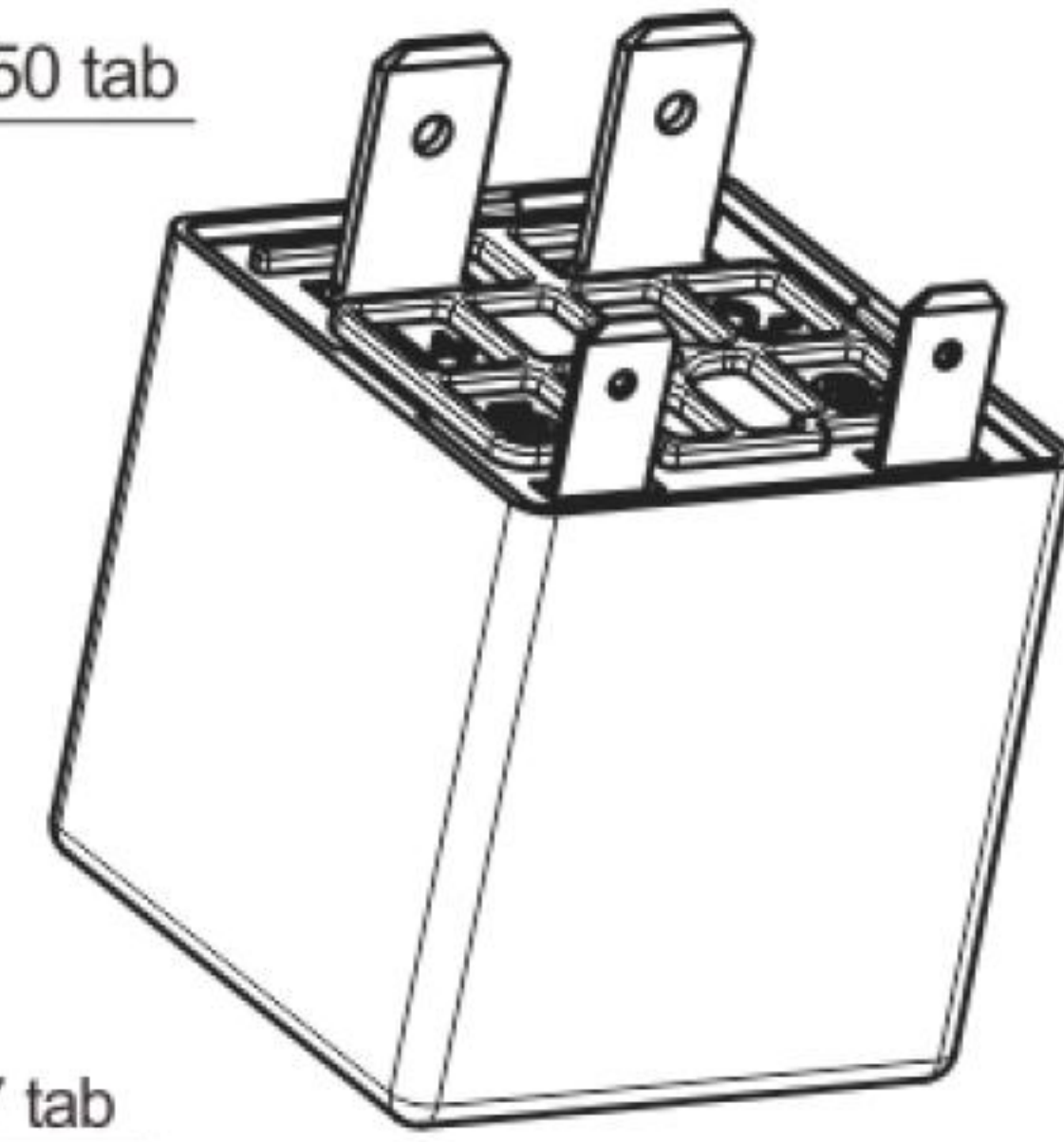
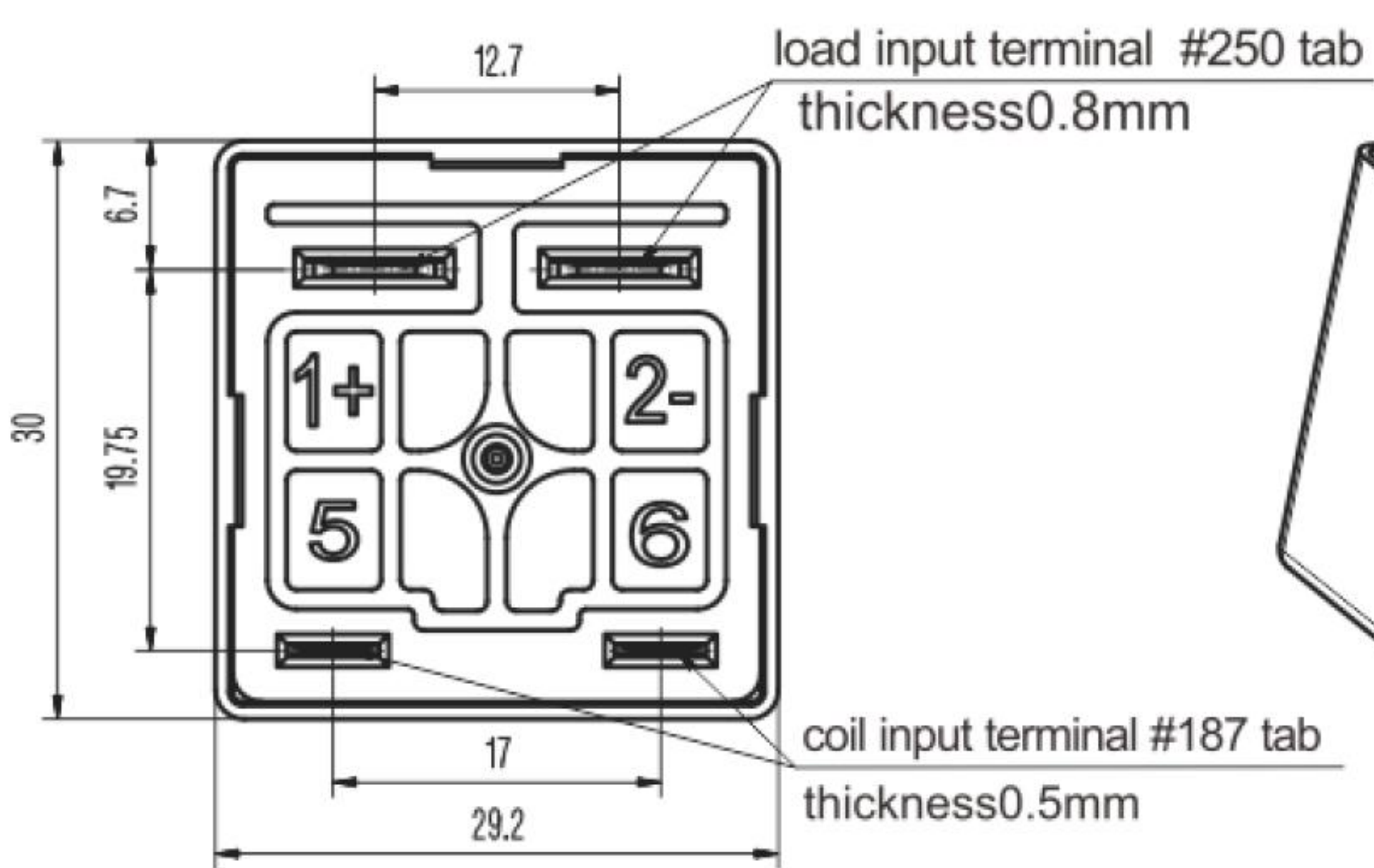
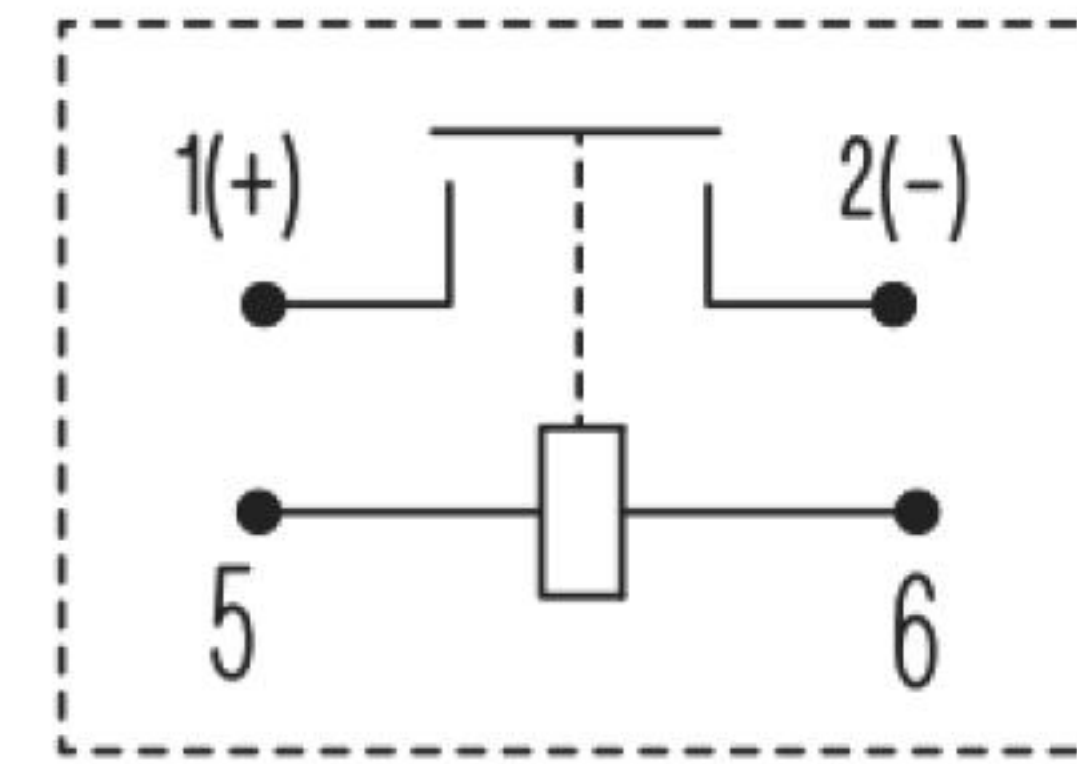
Outline, coil wiring , installation hole

Unit: mm

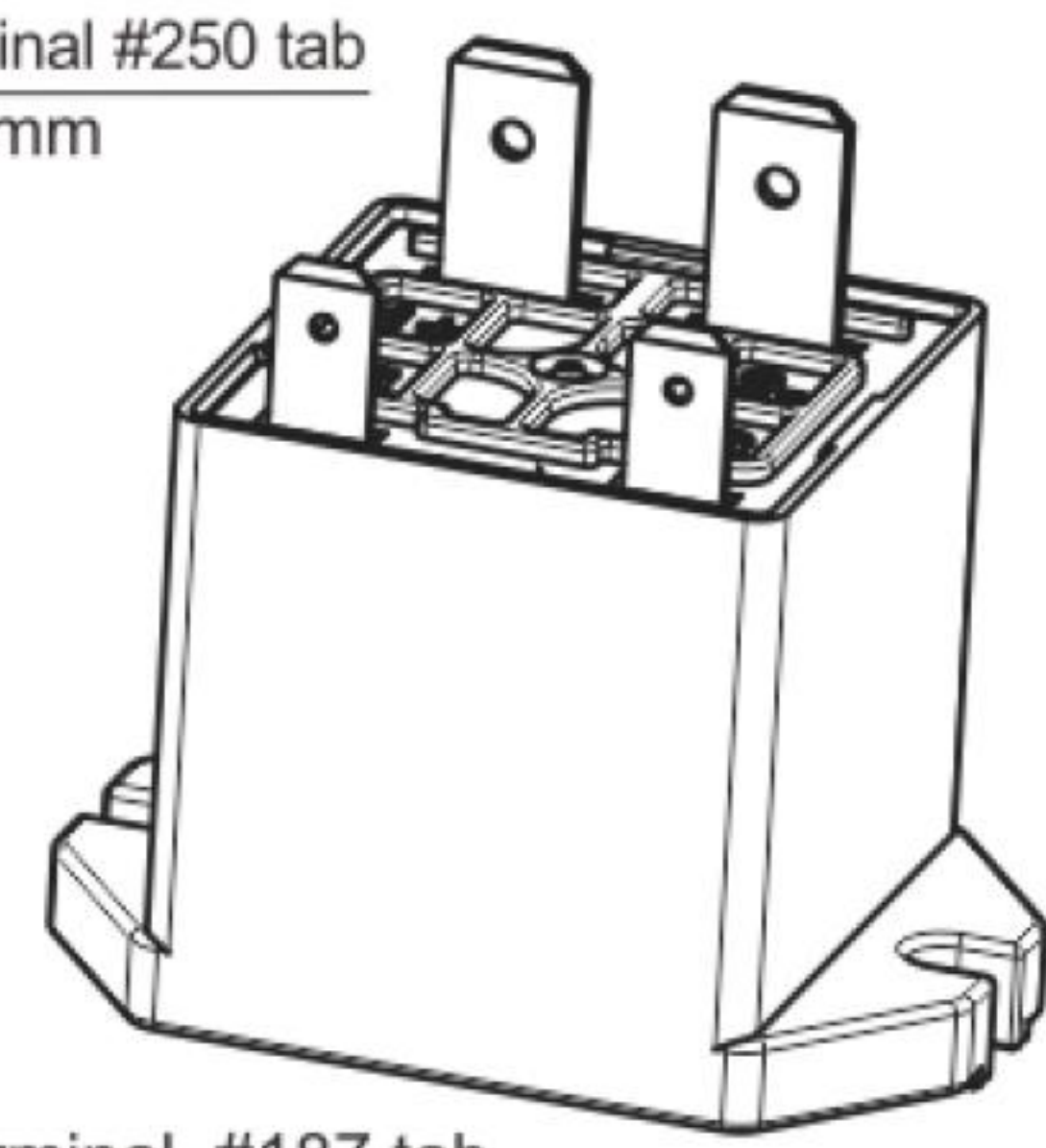
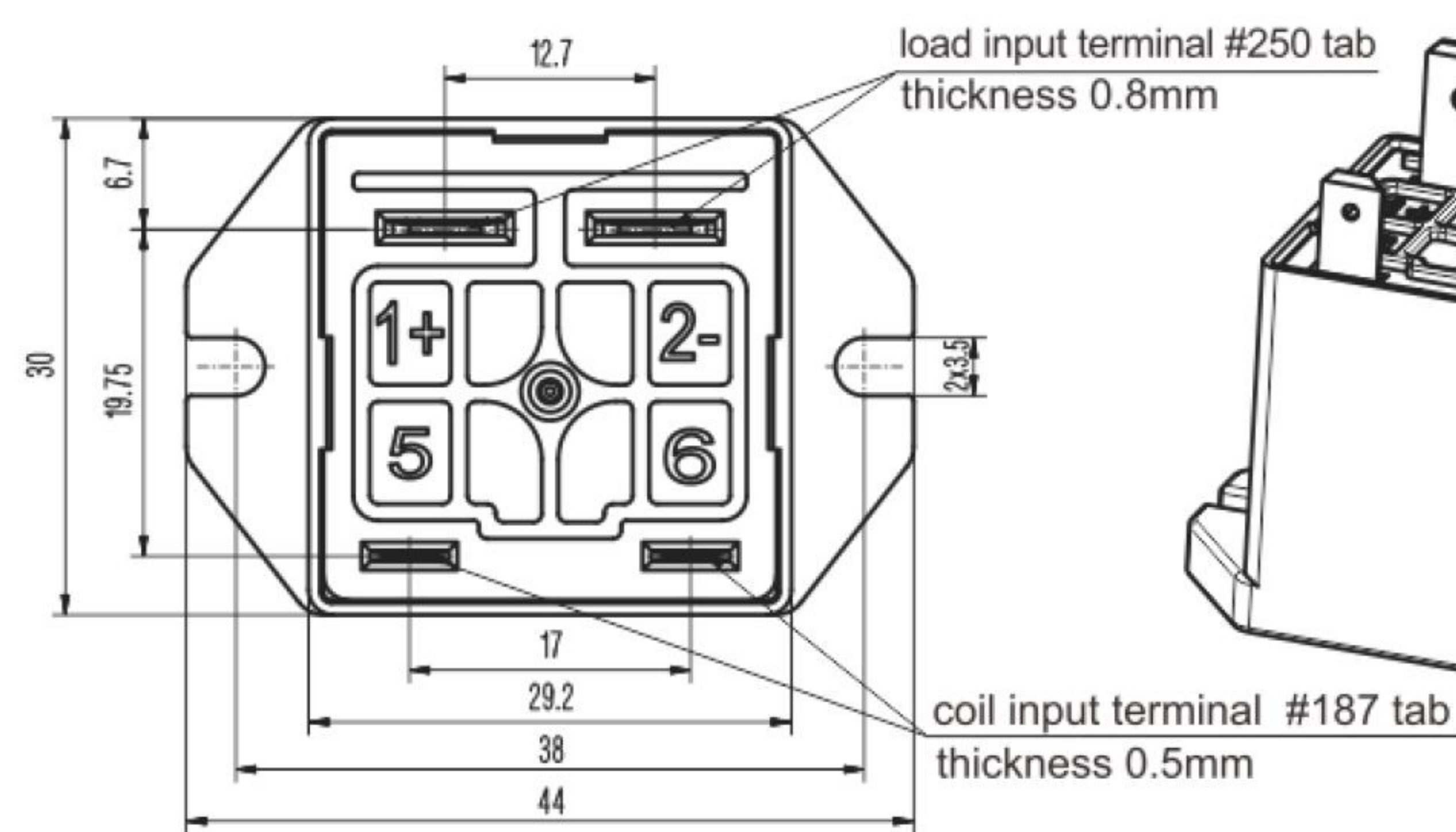
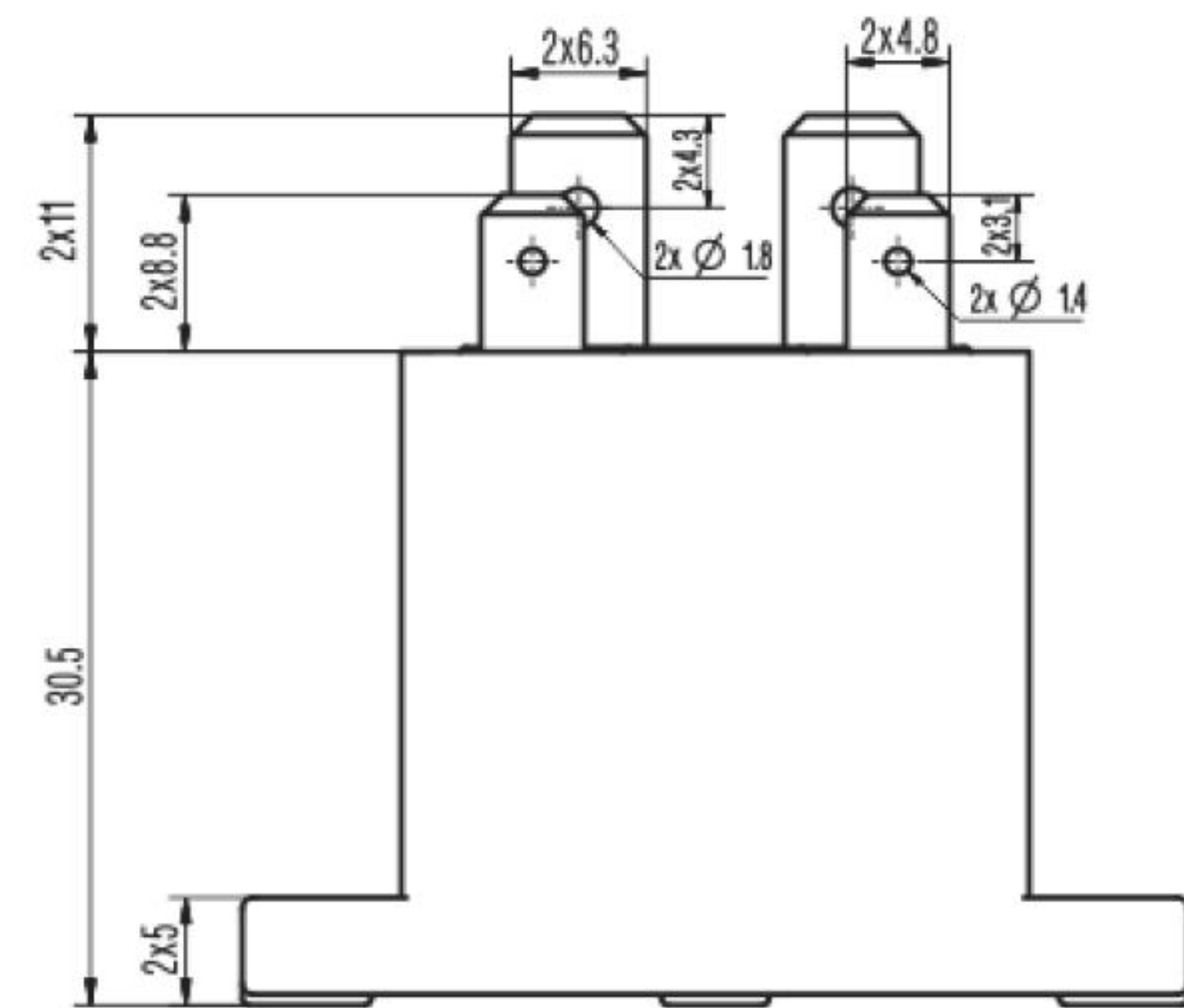
HEV -40/450-XX-HTQ2



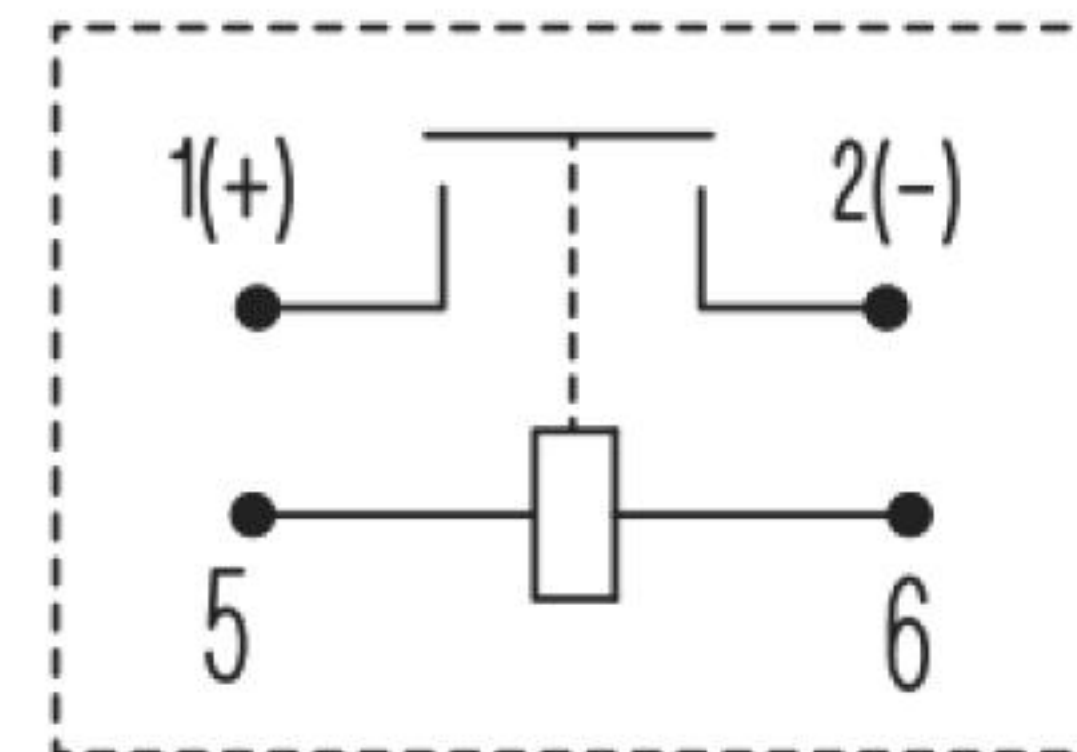
Coil wiring



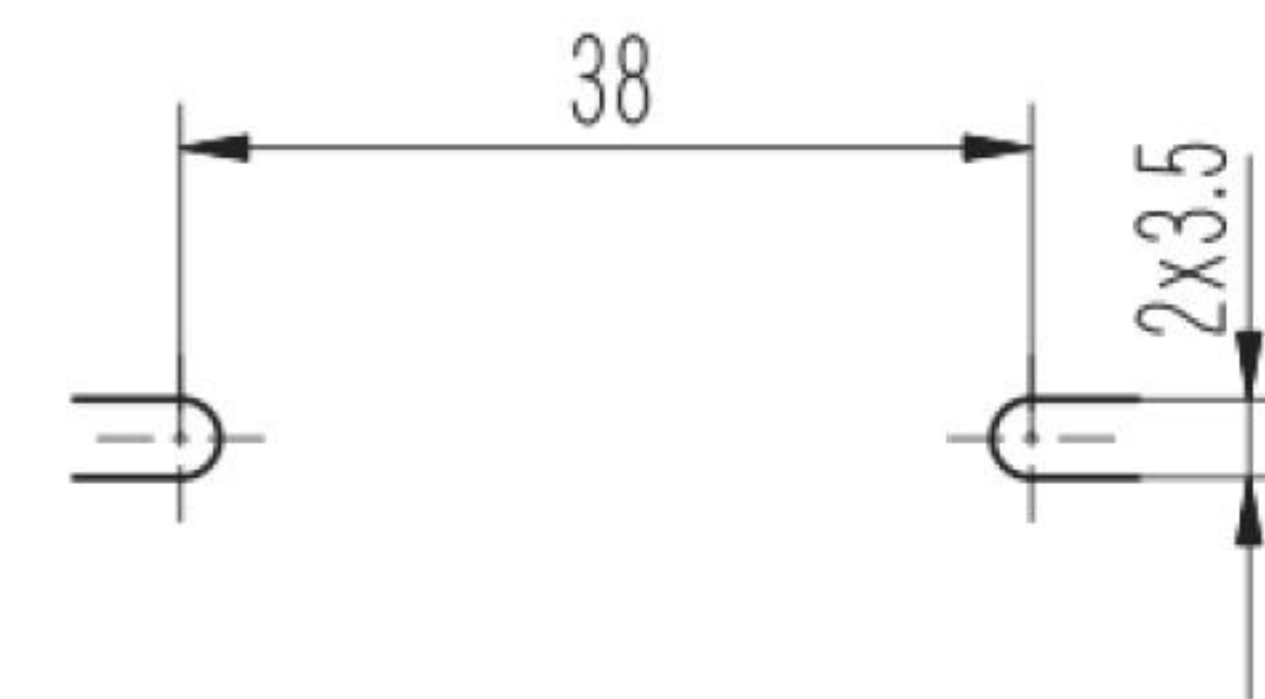
HEV -40/450-XX-HTQ2A



Coil wiring

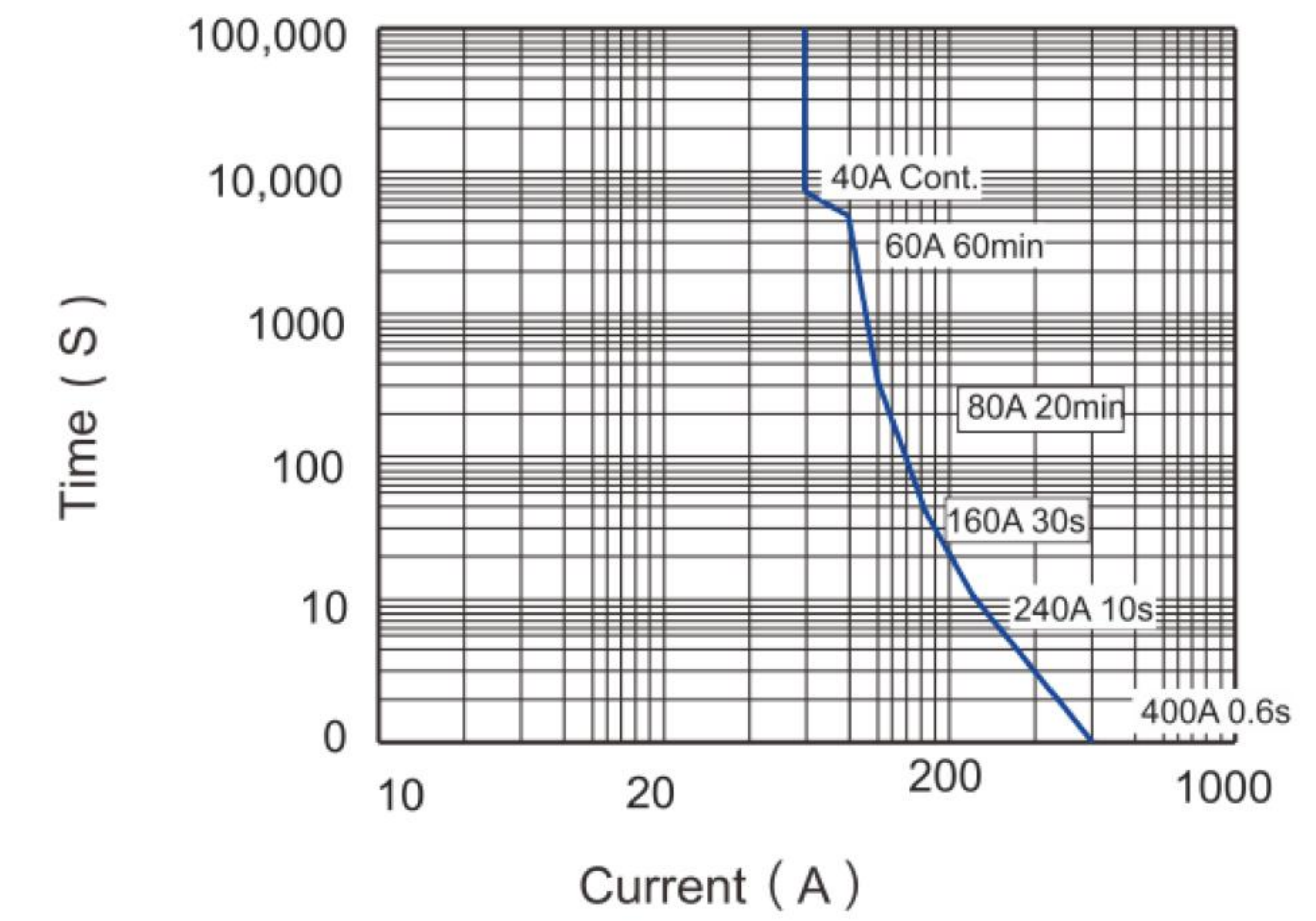


mounting hole



Characteristic curve

Current carrying capacity curve



Note: The data above is measured at the environment 85°C, with cross section area of wire ≥ 10mm². The data is only for reference and please do not use it for fuse selection.

Cautions

1. In case of loosening, please use washer when install the relay. Use M3 bolt for HTQ2A, the torque within 1.4N · m ~ 2.2N · m; Insertion and Extraction Force of input terminal are : (1) load terminal: 49N, (2) coil terminal : 49N. The torque beyond the range may cause damage.
2. When install HTP, the data of welding PCB board: manual welding (380±20) °C, time is (3~5) s, wave-welding (260±5) °C, time is (3~5) s.
3. Please do not adhere foreign materials like oil on the terminals and please use the wire with cross section area 4mm² min, otherwise the terminal parts may have abnormal heating.

Remark: In case of no tolerance shown in outline dimension: outline dimension ≤ 10mm, tolerance should be ±0.3mm; outline dimension between (10~50) mm, tolerance should be ±0.5mm; when outline dimension ≥ 50mm, tolerance should be ±0.8mm.