E-T-A Thermal-magnetic Miniature Circuit Breaker 4230-T...

Description

Single pole and multipole thermal-magnetic miniature circuit breakers (MCBs) in accordance with EN 60947-2, UL 1077 and UL 489 for DIN rail mounting, with toggle actuation, visual status indication and high rupture capacity. A positively trip-free snap action mechanism ensures reliable switching behaviour. A range of trip characteristics and add-on modules allow a great variety of applications.

Typical applications

Protection of cables, motors, generators and transformers, thyristors and silicon rectifiers. Protection of computers and their peripheral equipment, industrial process control systems, telecommunications equipment, power supplies.

Technical Data

Voltage rating and current rating range	
to IEC/EN 60947-2	1-pole: AC 240 V; 1 A…63 A; 2, 3, 4-pole: AC 415 V, 1 A…63 A; 1-pole: DC 80 V, 1 A...63 A 2-pole: (2 poles connected in series) DC 125 V, 1...63 A
to UL 1077	1-pole: AC 277 V; 1 A…63 A; 2, 3, 4-pole: AC 480Y/277 V, 1 A…63 A; 1-pole: DC 60 V; 1 A...63 A; 2-pole (2 poles connected in series): DC 125 V; 1 A...63 A;
to UL 489	1-pole: AC 120 V; 1A…63 A; 2, 3-pole: AC 240 V, 1 A…63 A; 1-pole: AC 277 V; 1 A…32 A; 2, 3-pole: AC 480Y/277 V; 1 A…32 A; 1-pole: DC 60 V; 1 A…63 A; 2-pole (2 poles connected in series); DC 125 V; 1 A...63 A;
Typical life	
Mechanically	20,000 cycles
Electrically	6,000 cycles

Approvals

Approval authority	Standard	Rated voltage	Current ratings
TÜV	IEC/EN 60947-2	AC 240/415 V DC 80 V DC 125 V	1...63 A 1...63 A (1-pole) 1...63 A (2 poles in series)
UL	UL 1077 / CSA-C22.2 No. 235	AC 480Y/277 V DC 60 V DC 125 V	1...63 A 1...63 A (1-pole) 1...63 A (2 poles in series)
UL	UL 489 / CSA-C22.2 No. 5	AC 240 V AC 480Y/277 V DC 60 V DC 125 V	1...63 A 1...32 A 1...63 A (1-pole) 1...63 A (2 poles in series)

UL 489 version

4230-T...

IEC/EN60947-2 & UL1077 version

Technical Data

Rupture capacity	
to IEC/EN 60947-2 (Ics)	AC 7,500 A / DC 10,000 A
to IEC/EN 60947-2 (Icu)	AC/DC 10,000 A
to UL 489	AC/DC 10,000 A

to UL1077

Number of poles	Un	In	TC	OL	SC
1-pole	AC 240 V	1...63 A	1	1	7.5 kA, U1
1-pole	AC 277 V	1...63 A	1	0	5 kA, U1
2-, 3-, 4-pole	AC 480 V	1...63 A	1	1	5 kA, U1
1-pole	DC 60 V	1...63 A	1	0	7.5 kA, U1
2-pole in series	DC 125 V	1...63 A	1	0	7.5 kA, U1

Insulation coordination	6 kV/3 (reinforced insulation at operating area)
Degree of protection	IP20
Vibration (sinusoidal) test to IEC 60068-2-6, test Fc	± 0.38 mm (10–57 Hz), 5 g (57–500 Hz) 10 frequency cycles per axis
Shock, test to IEC 60068-2-27, test Ea	30 g (11 ms)
Corrosion, test to IEC 60068-2-11, test Ka	96 hrs in 5% salt mist
Humidity, test to IEC 60068-2-78, test Cab	48 hours at 95% RH, temperature +40°C
Terminals	screw terminals Vertical connection possible by means of busbars
Tightening torque	2 Nm max.
Cable cross section	≤35 mm²
Ambient temperature:	-35°C...+ 70°C
Mounting	rail mounting
Mass	approx. 116 g per pole (EN 60947-2/ UL 1077) approx. 131 g per pole (UL 489)

1

Order numbering code

Type No.

4230 single and multipole thermal-magnetic high performance circuit breaker

Mounting

T1 rail mounting

Number of poles

1 single pole protected
2 double pole protected
3 three pole protected
4 four pole protected*

Accessories

0 without

terminals

K0 screw terminals

Characteristic curve

B: thermal 1.05 - 1.30 x I_N; magnetic 3.2 - 4.8 x I_N
C: thermal 1.05 - 1.30 x I_N; magnetic 6.4 - 9.6 x I_N
D: thermal 1.05 - 1.30 x I_N; magnetic 9.6 - 14.4 x I_N

Approvals

E IEC/EN 60947-2 (TÜV) / UL 1077
U UL 489 (only 1-, 2- & 3-pole) / IEC/EN 60947-2 (TÜV)

Current ratings:

1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 13, 15, 16, 20, 25, 30, 32, 35, 40, 50, 60, 63 A

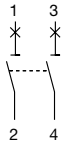
4230 - T1 1 0 - K0 C E - 10 A ordering example

* not for UL 489

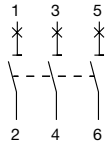
Schematic diagrams

1-pole

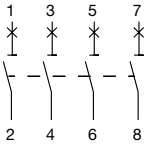
2-pole



3-pole



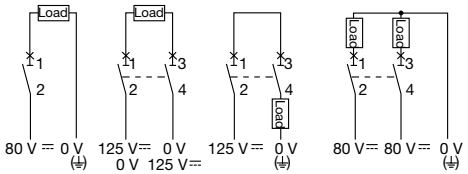
4-pole



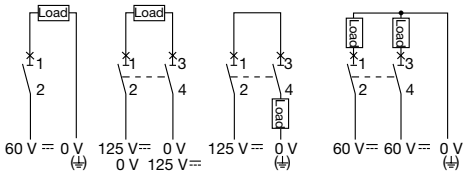
DC application

When using the 4230-T in DC application, polarity does not have to be observed. Max. acceptable voltage between the conductors depends on the number of poles, circuitry and relevant standard / approval.

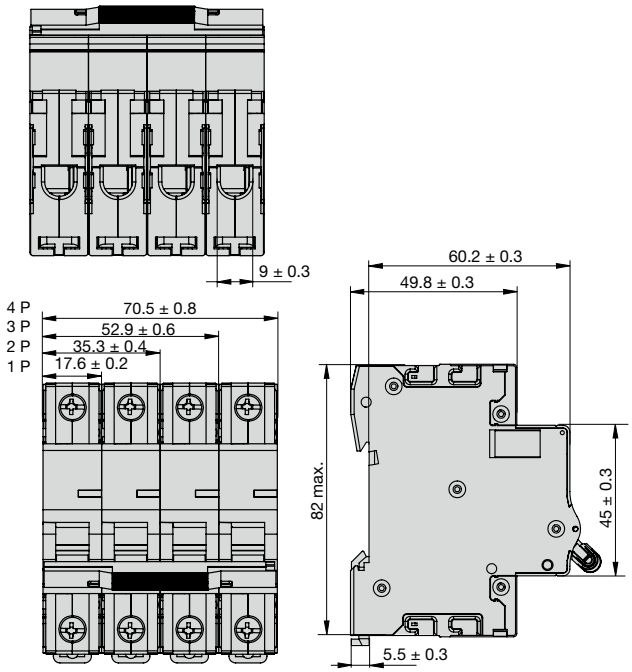
To IEC/EN 60947-2:



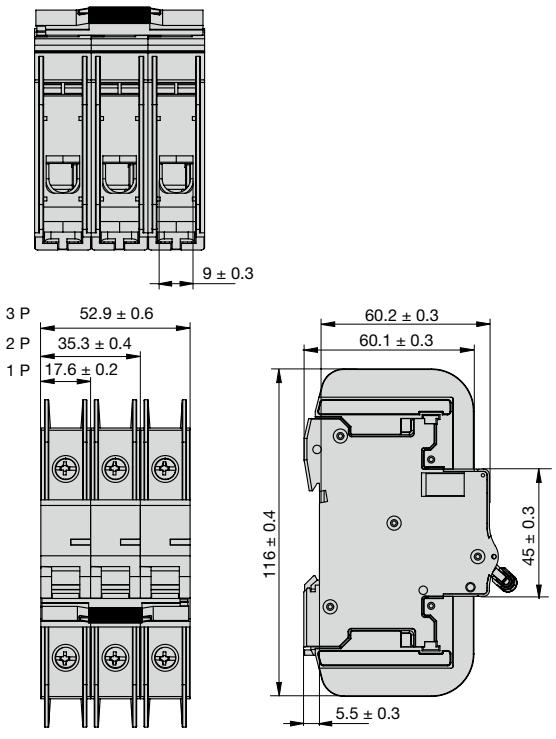
To UL 489 and UL 1077:



Dimensions – IEC/EN 60947-2 / UL1077 version



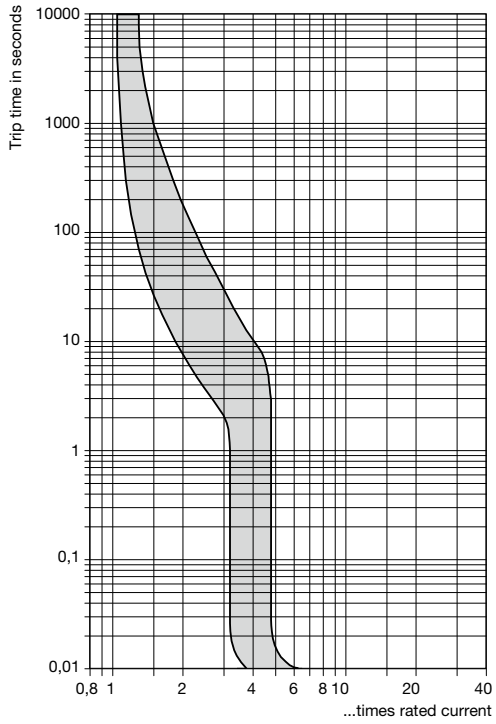
Dimensions – UL 489 version



All dimensions without tolerances are for reference only. E-T-A reserves the right change specifications at any time in the interest of improved design, performance and cost effectiveness, the right to make changes in these specifications without notice is reserved. Product markings may not be exactly as the ordering codes. Errors and omissions excepted.

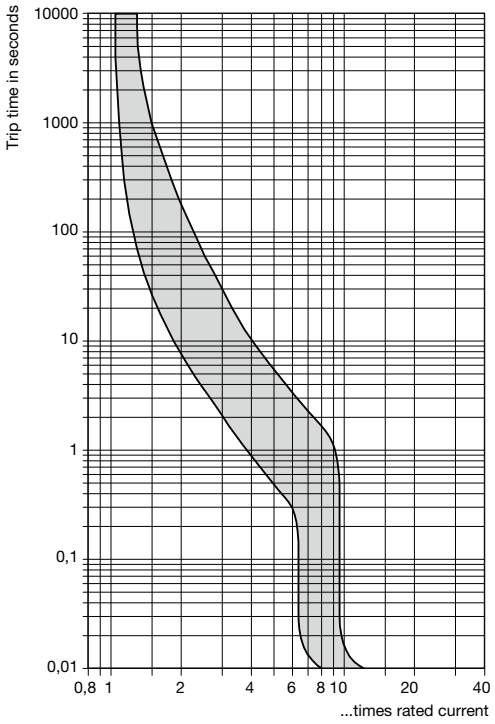
Time/current characteristics

Curve B / 1...63 A



Magnetic tripping currents are increased by 30 % on DC supplies.
Ambient temperature 30 °C

Curve C / 1...63 A



Magnetic tripping currents are increased by 30 % on DC supplies.
Ambient temperature 30 °C

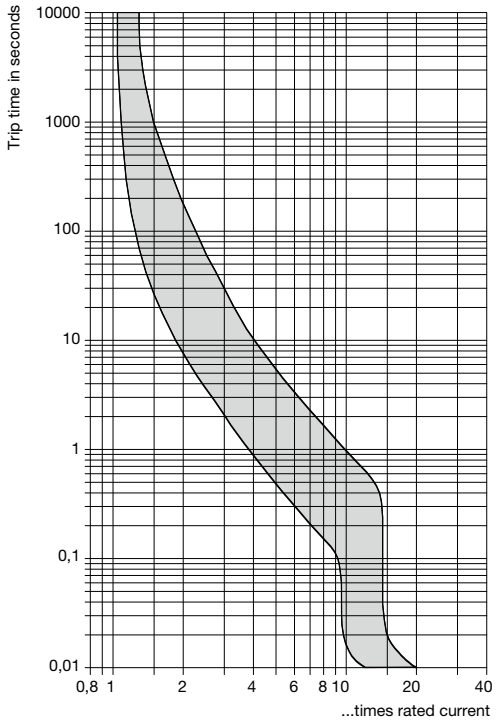
Current ratings and voltage drop @ +25°C

Voltage drop in V at 1 I_N						
I_N (A)	1	1.2	1.5	1.6	2	3
V	1.50	1.50	0.80	0.80	0.80	0.60
I_N (A)	4	5	6	7	8	10
V	0.60	0.20	0.20	0.20	0.15	0.15
I_N (A)	12	13	15	16	20	25
V	0.15	0.10	0.10	0.10	0.08	0.08
I_N (A)	30	32	35	40	50	60
V	0.07	0.07	0.07	0.07	0.06	0.06
I_N (A)	63					
V	0.06					

Note

When mounted side-by-side, the breakers can only carry up to 80 % of their rated current or a higher rating has to be selected (see chapter Technical Information).

Curve D / 1...63 A



Magnetic tripping currents are increased by 30 % on DC supplies.
Ambient temperature 30 °C

Max. operating currents depending on ambient temperature

Rated current I_N (A)	Max. operating currents depending on ambient temperature T (A)										
	-35°C	-30°C	-25°C	-20°C	-15°C	-10°C	-5°C	0°C	+5°C	+10°C	+15°C
1	1.27	1.25	1.23	1.21	1.19	1.17	1.15	1.13	1.10	1.08	1.06
2	2.87	2.81	2.74	2.68	2.62	2.55	2.48	2.42	2.35	2.28	2.20
3	3.89	3.83	3.76	3.70	3.64	3.57	3.50	3.44	3.37	3.30	3.22
4	4.91	4.83	4.76	4.70	4.64	4.57	4.50	4.44	4.37	4.30	4.22
5	6.68	6.56	6.44	6.32	6.19	6.07	5.94	5.81	5.68	5.54	5.40
6	7.70	7.58	7.46	7.34	7.21	7.09	6.96	6.83	6.70	6.56	6.42
7	8.78	8.66	8.54	8.42	8.29	8.17	8.04	7.91	7.78	7.64	7.50
8	9.80	9.68	9.56	9.44	9.31	9.19	9.06	8.93	9.80	8.66	8.52
10	13.89	13.62	13.35	13.07	12.81	12.53	12.23	11.93	11.63	11.33	11.01
12	15.91	15.64	15.37	15.09	14.83	14.55	14.25	13.95	13.65	13.35	13.03
13	16.92	16.65	16.38	16.10	15.84	15.56	15.26	14.96	14.66	14.36	14.04
15	19.77	19.42	19.07	18.74	18.39	18.04	17.69	17.32	16.95	16.57	16.19
16	20.78	20.43	20.08	19.75	19.40	19.05	18.70	18.33	17.96	17.58	17.20
20	25.67	25.28	24.88	24.47	24.06	23.64	23.22	22.78	22.34	21.89	21.43
25	32.21	31.72	31.22	30.70	30.18	29.65	29.10	28.55	27.98	27.41	26.82
30	39.00	38.42	37.78	37.13	36.47	35.80	35.11	34.43	33.71	32.99	32.26
32	41.04	40.46	39.82	39.17	38.51	37.84	37.15	36.47	35.75	35.03	34.30
35	44.08	43.50	42.86	42.21	41.55	40.88	40.19	39.51	38.79	38.07	37.34
40	51.63	50.86	50.04	49.21	48.37	47.51	46.63	45.74	44.83	43.90	42.95
50	64.92	63.97	62.92	61.86	60.77	59.67	58.54	57.40	56.23	55.05	53.81
60	80.45	79.03	77.61	76.16	74.69	73.19	71.67	70.11	68.51	66.88	65.21
63	83.48	82.06	80.71	79.19	77.72	76.22	74.70	73.14	71.54	69.91	68.24

Rated current I_N (A)	Max. operating currents depending on ambient temperature T (A)										
	+20°C	+25°C	+30°C	+35°C	+40°C	+45°C	+50°C	+55°C	+60°C	+65°C	+70°C
1	1.05	1.02	1.00	0.97	0.94	0.91	0.89	0.86	0.83	0.80	0.77
2	2.12	2.04	2.00	1.90	1.82	1.74	1.65	1.56	1.47	1.36	1.25
3	3.14	3.06	3.00	2.92	2.84	2.76	2.67	2.58	2.49	2.38	2.27
4	4.14	4.06	4.00	3.92	3.84	3.76	3.67	3.58	3.49	3.38	3.27
5	5.25	5.12	5.00	4.82	4.66	4.50	4.34	4.17	3.99	3.81	3.62
6	6.27	6.14	6.00	5.84	5.68	5.52	5.36	5.19	5.01	4.83	4.64
7	7.35	7.22	7.00	6.92	6.76	6.60	6.44	6.27	6.09	5.91	5.72
8	8.37	8.24	8.00	7.94	7.78	7.62	7.46	7.29	7.11	6.93	6.74
10	10.67	10.34	10.00	9.63	9.24	8.85	8.45	8.01	7.55	7.06	6.55
12	12.69	12.36	12.00	11.65	11.26	10.60	10.47	10.03	9.57	9.08	8.57
13	13.70	13.37	13.00	12.66	12.27	11.61	11.48	11.04	10.58	10.09	9.58
15	15.79	15.39	15.00	14.54	14.10	13.65	13.19	12.70	12.20	11.69	11.64
16	16.80	16.40	16.00	15.55	15.11	14.66	14.20	13.71	13.21	12.70	12.65
20	20.96	20.47	20.00	19.47	18.95	18.42	17.87	17.30	16.71	16.10	15.47
25	26.22	25.61	25.00	24.33	23.67	23.00	22.28	21.56	20.80	20.02	19.21
30	31.50	30.73	30.00	29.13	28.30	27.44	26.56	25.65	24.71	23.74	22.73
32	33.54	32.77	32.00	31.17	30.34	29.48	28.69	27.69	26.75	25.78	24.77
35	36.58	35.81	35.00	34.21	33.38	32.52	31.64	30.73	29.79	28.82	27.81
40	41.98	40.99	40.00	38.93	37.85	36.75	35.61	34.43	33.21	31.95	30.63
50	52.56	51.28	50.00	47.82	46.24	44.81	43.33	41.81	40.23	38.58	35.77
60	63.50	61.75	60.00	57.08	55.16	53.18	51.13	49.00	46.78	44.47	40.47
63	66.53	64.78	63.00	60.11	58.19	56.21	54.16	52.03	49.81	47.50	43.50

Description

Add-on module for circuit breaker type 4230-T. The auxiliary switch has a change-over contact as signal contact and is operated with actuation of the MCB.

Typical applications

Status monitoring of MCB and/or the connected loads.

Mounting

The add-on module is mounted on the left side of the MCB (seen from the front). For mounting, the MCB has to be in the OFF position.

Order numbering code

Type No.
X4230 Add-on module for type 4230-T

Module type
S aux. contact switch

Style
0 change-over contact

Terminals
1 screw terminals

Key for nominal output

A (to IEC/EN 60947-5-1)

AC voltage		DC voltage	
Rated voltage	Rated current	Rated voltage	Rated current
240 V	6 A	24 V	6 A
415 V	3 A	48 V	2 A
		130 V	1 A

B (to UL 489)

12...240 V	6 A	12...24 V	6 A
277 V	3 A	48 V	3 A
		110...220 V	1,5 A

Delivery condition:
L supplied separately, has to be mounted by the user

X4230-	**S**	**0**	**1**	**A**	**L**	ordering example

Technical Data

Rated currents to IEC/EN 60947-5-1:

Voltage ratings:	AC 240 V	AC 415 V	DC 24 V	DC 48 V	DC 130 V
Current ratings:	6 A	3 A	6 A	2 A	1 A

Rated currents to UL 489:

Voltage ratings:	AC 12… 240 V	AC 277 V	DC 12 ... 24 V	DC 48 V	DC 110 ... 220 V
Current ratings:	6 A	3 A	6 A	3 A	1.5 A

Typical life	20,000 cycles
Tightening torque	1 Nm max.
Ambient temperature	-35 °C ...+ 70 °C
Width	9 mm
Mass	approx. 29 g

Approvals

Approval authority	Standard	Types
TÜV	IEC/EN 60947-5-1	with key index "A"
UL	UL 489	with key index "B"

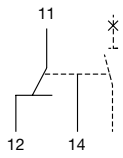
Mounting instructions

Mounting to MCB to UL 489

The following steps have to be carried out for mounting the auxiliary contact module:
- Remove the left-side covers for the latching notches of the auxiliary contact module on both isolation pieces of the MCB, e.g. by means of a screw driver
- Pull off the isolation pieces from the MCB to the front
- Remove blanking plug on MCB to open left-side holes for latching notches of auxiliary switch
- Re-insert isolation pieces onto MCB
- Pull off left-side adhesive cover and carefully remove the perforated cover below

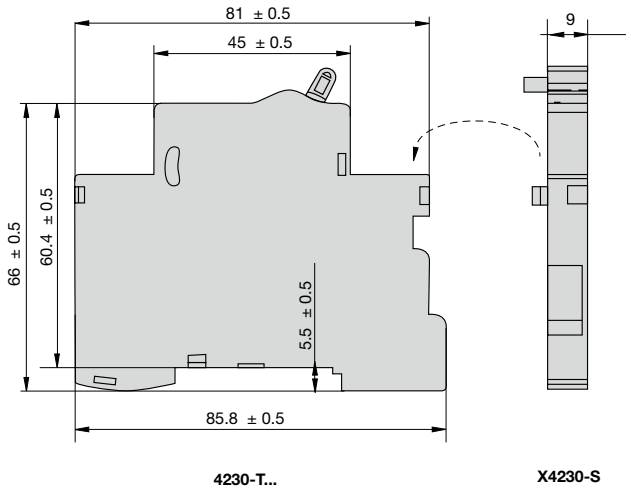
Caution: the MCB to UL489 must only be operated with the insulation pieces fitted.

Schematic diagrams



Note:
As soon as the auxiliary contact module is mounted on the MCB, the terminals 11 and 14 are connected when the MCB is in ON condiiton. Terminals 11 and 12 are connected when the MCB is in OFF condition.

Mounting principle



Fault indicator module X4230-A for circuit breaker type 4230-T...

Description

Add-on module for MCB type 4230-T. The fault indicator has a change-over contact as signal contact. There will only be a signal when the MCB tripped on grounds of a failure (overload, short circuit), but and not when the MCB was switched on or off manually.
By actuating the reset lever on the front the tripping signal is acknowledged.

Typical applications

Status monitoring of MCB and/or the connected loads.

Mounting

The add-on module is mounted on the left side of the MCB (seen from the front). For mounting, the MCB has to be in the OFF position.

Order numbering code

Type No.
X4230 Add-on module for type 4230-T

Module type
A Fault indicator module

Style
0 change-over contact

terminals
1 screw terminals

Key for nominal output
A (to IEC/EN 60947-5-1)

AC voltage		DC voltage	
Rated voltage	Rated current	Rated voltage	Rated current
240 V	6 A	24 V	6 A
277 V	3 A	48 V	2 A
		130 V	1 A

B (to UL 489)

12...240 V	6 A	12...24 V	6 A
415 V	3 A	48 V	3 A
		130 V	1.5 A

Delivery condition:
L supplied separately, has to be mounted by the user

X4230-A	**0**	**1**	**A**	**L**	ordering example

Technical Data

Rated currents to IEC/EN 60947-5-1:

Voltage ratings:	AC 240 V	AC 415 V	DC 24 V	DC 48 V	DC 130 V
Current ratings:	6 A	3 A	6 A	2 A	1 A

Rated currents to UL 489:

Voltage ratings:	AC 12… 240 V	AC 277 V	DC 12 ... 24 V	DC 48 V	DC 110 ... 220 V
Current ratings:	6 A	3 A	6 A	3 A	1.5 A

Typical life	20,000 cycles
Tightening torque	1 Nm max.
Ambient temperature	-35 °C ...+ 70 °C
Width	9 mm
Mass	approx. 29 g

Approvals

Approval authority	Standard	Types
UL	UL 489	with key index "B"

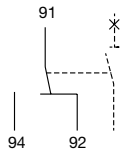
Mounting instructions

Mounting to MCB to UL 489

The following steps have to be carried out for mounting the fault indicator module:
- Remove the left-side covers for the latching notches of the fault indicator module on both isolation pieces of the MCB, e.g. by means of a screw driver
- Pull off the isolation pieces from the MCB to the front
- Remove blanking plug on MCB to open left-side holes for latching notches of indicator switch
- Re-insert isolation pieces onto MCB
- Pull off left-side adhesive cover and carefully remove the perforated cover below

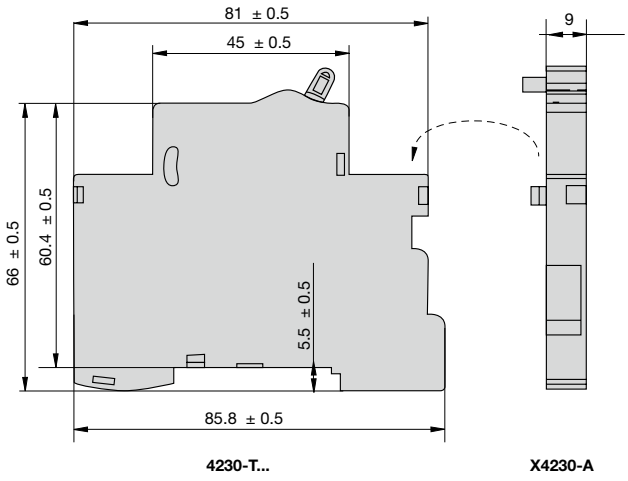
Caution: the MCB to UL489 must only be operated with the insulation pieces fitted.

Schematic diagrams



Note:
As soon as the fault indicator module is mounted on the MCB,
the terminals 912 and 92 are connected when the MCB is in ON condition;
ther terminals 91 and 94 are connected when the MCB tripped electrically;
the terminals 91 and 92 are connected when the MCB was tripped manually;
at the same time the terminals 91 and 94 do not have contact.

Mounting principle



Description

Add-on module for MCB type 4230-T. The working current module serves for remote trip of the MCB and for signalling whether the MCB was tripped electrically or manually.

Typical applications

Electrical remote trip of safety equipment with simultaneous monitoring of MCB status or its connected load.

Mounting

The add-on module is mounted on the left side of the MCB (seen from the front). For mounting, the MCB has to be in the OFF position. When auxiliary contact module/fault indicator module and a working current module are mounted at the same time, the working current module always has to be mounted first.

Order numbering code

Type No.
X4230 Add-on module for type 4230-T

Module type
F Working current module

Style
A Magnetic coil and auxiliary switch (changeover) physically isolated from the MCB

terminals
1 screw terminals

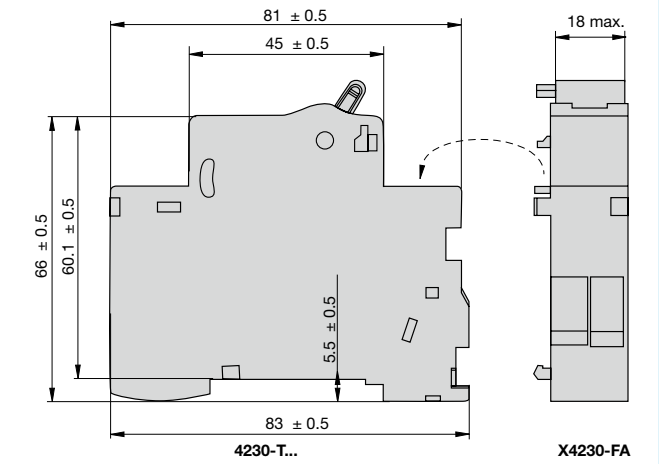
Approvals
A without
B UL 489

Delivery condition:
L supplied separately, has to be mounted by the user

Rated voltage	Approval A	Approval B
AC 120 V	---	UL 489
AC 240 V	without	UL 489
AC 277 V	---	UL 489
AC 415 V	without	---
DC 12 V	---	UL 489
DC 24 V	without	UL 489
DC 48 V	without	UL 489
DC 125 V	---	UL 489

X4230- F A 1 A L - AC 240 V ordering example

Mounting principle



Technical Data

Voltage ratings AC	AC 415 V	AC 277 V	AC 240 V	AC 120 V
Min. trip voltage	AC 200 V	AC 160 V	AC 160 V	AC 80 V
Power consumption min. response power	240 W 35 W	240 W 35 W	200 W 35 W	200 W 35 W
Rated current of auxiliary contact	3 A	3 A	6 A	6 A
Voltage ratings DC	DC 125 V	DC 48 V	DC 24 V	DC 12 V
Min. trip voltage	DC 80 V	DC 24 V	DC 16 V	DC 8 V
Power consumption min. response power	200 W 30 VA	200 W 30 VA	200 W 30 VA	200 W 30 VA
Rated current of auxiliary contact	1.5 A	2 A	6 A	6 A
Trip time	< 10 ms			
Typical life	20,000 cycles			
Tightening torque	1 Nm max.			
Ambient temperature	-35 °C...+ 70 °C			
Width	18 mm			
Mass	approx. 60 g			

Mounting instructions

Mounting to MCB to UL 489

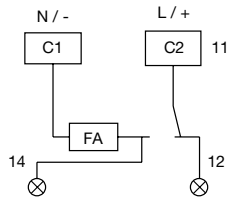
The following steps have to be carried out for mounting the auxiliary contact module:
- Remove the left-side covers for the latching notches of the working current module on both isolation pieces of the MCB, e.g. by means of a screw driver
- Pull off the isolation pieces from the MCB to the front
- Remove blanking plug on MCB to open left-side holes for latching notches of working current module
- Re-insert isolation pieces onto MCB
- Pull off left-side adhesive cover and carefully remove the perforated cover below

Caution: the MCB to UL489 must only be operated with the insulation pieces fitted.

Approvals

Approval authority	Standard	Types
UL	UL 489	Approval type "B" according to ordering number code

Schematic diagrams



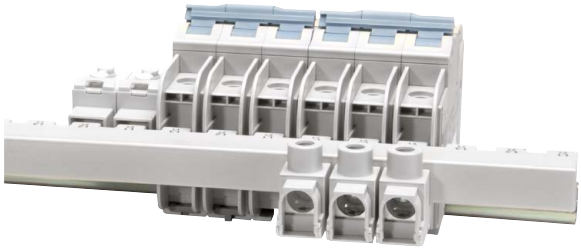
Busbars UL 489 to be cut to length

Busbars for the connection of circuit breakers **type 4230-..U..** to **UL 489** The busbars of 1m length can individually be cut to a suitable length for the application and isolated with end caps. Depending on the control cabinet design, the supply is by means of supply terminals without increasing the installation width or by means of a terminal block directly on the rail without increasing the installation height.

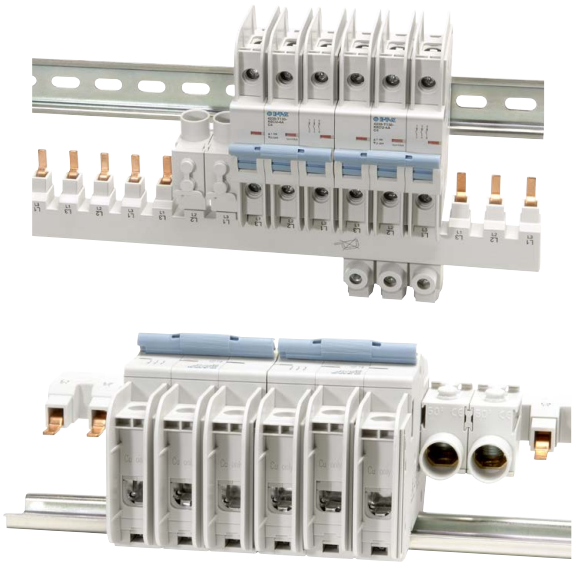
The models marked with “HS” are suitable for use with auxiliary contact modules with a width of 9 mm.

1

Busbar cross section:	18 mm².
Max. busbar current I_S (at 35°C):	
with supply at the end:	80 A
with supply in the middle:	160 A
Short circuit strength I_{CC}:	10 kA
Max. operating voltage:	480 V AC/DC
Degree of protection:	IP20
Step size:	17.8 mm



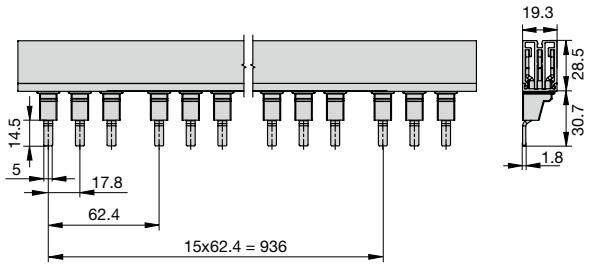
supply with supply terminal



supply with terminal block

Number of poles	Number of modules	part no.
1-pole	57	X4230-BU157P18S
2-pole	56	X4230-BU256P18S
3-pole	57	X4230-BU357P18S
1-pole + HS	37	X4230-BU137P18H2S
2-pole + HS	46	X4230-BU246P18H1S
3-pole + HS	48	X4230-BU348P18H1S

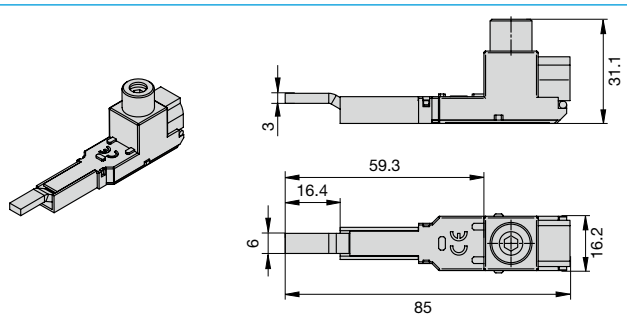
HS = application with auxiliary switch 9 mm



Accessories for busbars UL489 that can be cut to length:

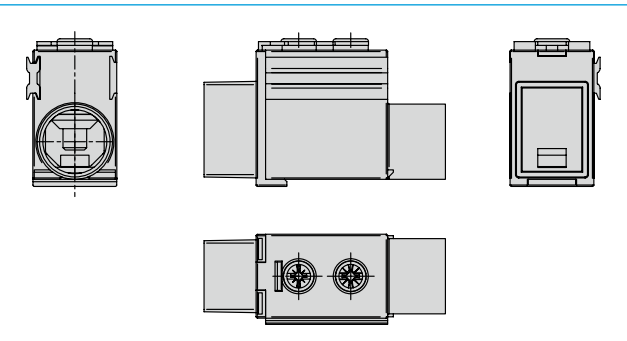
Supply terminal
X4230-FTUC35

Cross-section	2.5-35 mm² (2–14 AWG),
Tightening torque:	5.5 Nm (50 lbf.in)
Ampacity:	max. 115 A



Terminal block
part no. X4230-FBU50

Cross-section	1.5–50 mm² (1–14 AWG), solid/stranded 1.5-35 mm² (2–14 AWG), finely stranded with wire end ferrule
Tightening torque:	supply: 3.5 Nm (35 lbf.in) output (track side): 2.5 Nm (22 lbf.in)
Ampacity:	max. 115 A



end caps
part no. X4230-EC1

Accessories for all busbars UL489 that can be cut to length:

Protection against brush contact
part no. X4230-TC2

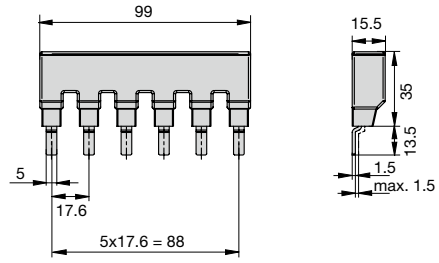
for covering unused modules

Busbars UL 489, cannot be cut to length

Busbars for the connection of circuit breakers **type 4230-..U..** to **UL489**. Depending on busbar type suitable for up to 18 poles.

Busbar cross section:	16 mm²
Max. busbar current I_S:	115 A
Short circuit strength I_{CC}:	10 kA
Max. operating voltage:	480 V AC/DC
Degree of protection:	IP20
Step size:	17.6 mm

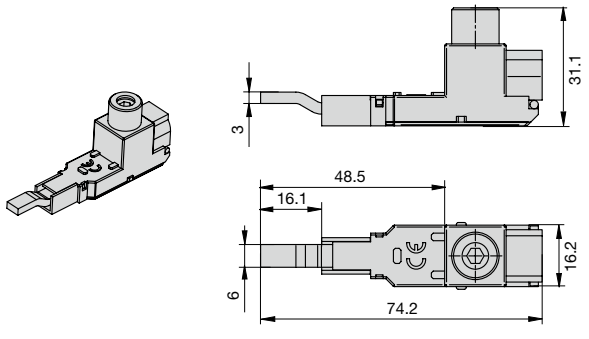
Number of poles	Number of modules	part no.
1-pole	6	X4230-BU106P16A
1-pole	12	X4230-BU112P16A
1-pole	18	X4230-BU118P16A
2-pole	6	X4230-BU206P16A
2-pole	12	X4230-BU212P16A
2-pole	18	X4230-BU218P16A
3-pole	6	X4230-BU306P16A
3-pole	12	X4230-BU312P16A
3-pole	18	X4230-BU318P16A



Accessories for busbars UL489 that cannot be cut to length:

supply terminal
part no. X4230-FTU35

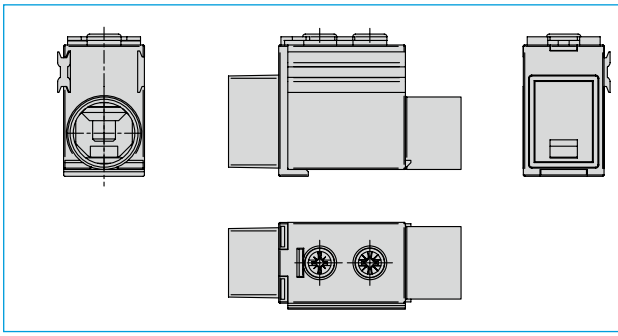
Cross-section	2.5-35 mm² (2–14 AWG),
Tightening torque:	5.5 Nm (50 lbf.in)
Ampacity:	max. 115 A



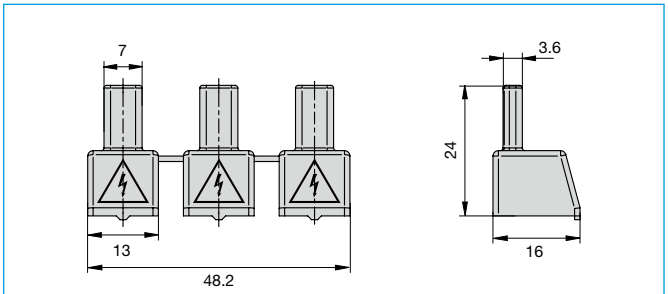
Accessories for busbars UL489 that cannot be cut to length:

Terminal block
part no. X4230-FBU50

Cross-section	1.5–50 mm² (1–14 AWG), solid/stranded 1.5-35 mm² (2–14 AWG), finely stranded with wire end ferrule:
Tightening torque:	supply: 3.5 Nm (35 lbf.in) output (track side): 2.5 Nm (22 lbf.in)
Ampacity:	max. 115 A



Protection against brush contact
part no. X4230-TC1



Approvals

Approval authority	Standard	Types
UL	UL 489	X4230-BU...
UL	UL 508	X4230-BR...

Busbars UL 508 to be cut to length

Busbars for the connection of circuit breakers **type 4230-..E..** To **UL 1077** The busbars of 1m length can individually be cut to a suitable length for the application and isolated with end caps.

Depending on the control cabinet design, the supply is by means of supply terminals without increasing the installation width or by means of a terminal block directly on the rail without increasing the installation height.

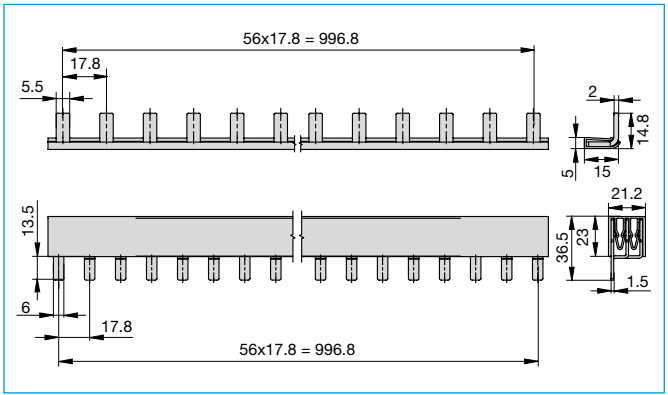
The models marked with “HS” are suitable for use with auxiliary contact modules with a width of 9mm.

1

Busbar cross section:	18 mm².
Max. busbar current I_S (at 35°C):	
with supply at the end:	80 A
with supply in the middle:	160 A
Short circuit strength I_{CC}:	10 kA
Max. operating voltage:	480 V AC/DC
Degree of protection:	IP20
Step size:	17.8 mm

Number of poles	Number of modules	part no.
1-pole	57	X4230-BR157P18SB
2-pole	56	X4230-BR256P18SL
3-pole	57	X4230-BR357P18SL
1-pole + HS	37	X4230-BR137P18H1SB
2-pole + HS	46	X4230-BR246P18H1SL
3-pole + HS	48	X4230-BR348P18H1SL

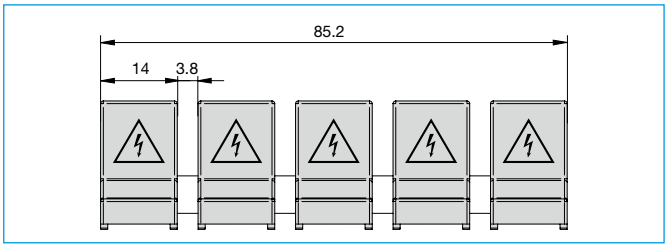
HS = application with auxiliary switch 9 mm



end caps
for single pole busbars: **part no. X4230-EC2**
for multipole busbars: **part no. X4230-EC3**

Protection against brush contact
part no. X4230-TC3

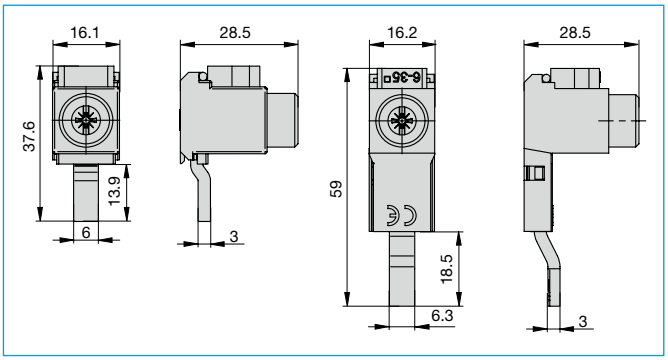
for covering unused modules.



Accessories for busbars UL508 that can be cut to length:

supply terminals
for single pole busbars: **part no. X4230-FTR135**
for multipole busbars: **part no. X4230-FTR335**

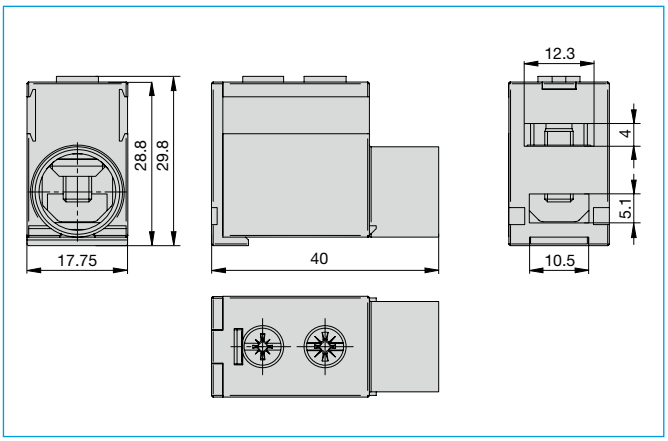
Cross-section	6 - 50 mm² (1-10 AWG), solid/stranded 6 - 35 mm² (2-10 AWG), finely stranded with wire end ferrule
Tightening torque:	5.5 Nm (50 lbf.in)
Ampacity:	max. 115 A



Accessories for busbars UL508 that can be cut to length:

Terminal block
part no. X4230-FBR50

Cross-section	6 - 50 mm² (1-10 AWG), solid/stranded 6 - 35 mm² (2-10 AWG), finely stranded with wire end ferrule:
Tightening torque:	supply: 3.5 Nm (35 lbf.in) output (track side): 2.5 Nm (22 lbf.in)
Ampacity:	max. 115 A



Busbars for IEC applications, to be cut to length

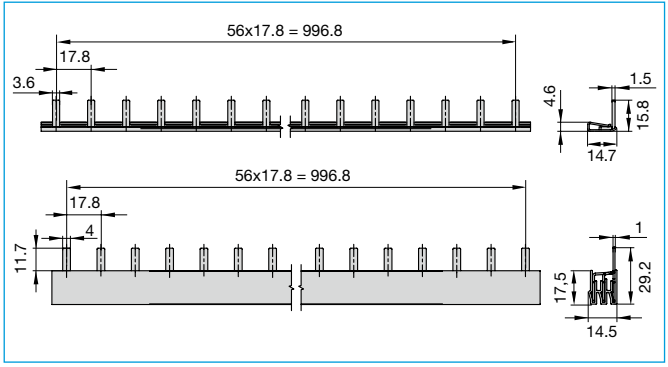
Busbars for the connection of circuit breakers **type 4230-..E..** to **IEC 60947-2**. The busbars of 1m length can individually be cut to a suitable length for the application and isolated with end caps.

The models marked with "HS" are suitable for use with auxiliary contact modules with a width of 9 mm.

Busbar cross section:	16 mm²
Max. busbar current Is (at 35°C):	
with supply at the end:	80 A
with supply in the middle:	130 A
Short circuit strength Icc:	10 kA
Max. operating voltage:	690 V AC/DC
Degree of protection:	IP20
Step size:	17.8 mm

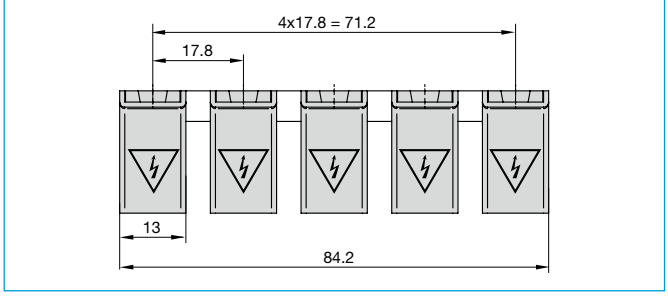
Number of poles	Number of modules	part no.
1-pole	57	Y 311 622 01
2-pole	56	Y 311 623 01
3-pole	57	Y 311 624 01
4-pole	56	Y 311 625 01
1-pole + HS	37	Y 311 626 01
2-pole + HS	46	Y 311 627 01
3-pole + HS	48	Y 311 628 01
4-pole + HS	52	Y 311 629 01

HS = application with auxiliary switch 9 mm



end caps
for single pole busbars: **part no. Y 307 851 01**
for 2-/3-pole busbars **part no. Y 308 506 01**
for four-pole busbars: **part no. Y 311 633 01**

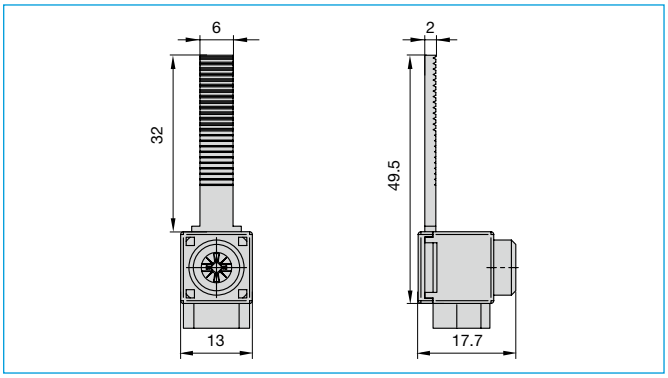
Protection against brush contact
part no. Y 311 632 01



Accessories for busbars to IEC 60947 that can be cut to length:

supply terminal
for multipole busbars:
part number Y 311 630 01

Cross-section	6–25 mm², solid/stranded 4–16 mm², finely stranded with wire end ferrule:
Ampacity:	max. 80 A



Accessories for busbars to IEC 60947 that can be cut to length:

supply terminal
for multipole busbars:
part no. Y 311 631 01

Cross-section	6–50 mm², solid/stranded 4–35 mm², finely stranded with wire end ferrule:
Tightening torque:	1 Nm (at 6 mm²) 3.5 Nm (at 50 mm²)
Ampacity:	max. 125 A
Degree of protection:	IP20, isolated bottom