Miniature circuit breakers (MCBs) and accessories, Safe-T and Din-T

Miniature circuit breakers Safe-T & Din-T

Miniature Circuit Breakers	Safe-T	DIN-T6	Din-T10
Standard [1])	AS 3111 / AS 2184	AS/NZS 60898	AS/NZS 60947-2
No. poles & module width	1P - 25 mm 2P - 50 mm 3P - 75 mm 4P - 100 mm	1P - 18 mm 2P - 36 mm 3P - 54 mm	1P - 18 mm 2P - 36 mm 3P - 54 mm 4P - 72 mm
Mounting	Clip tray	DIN rail	DIN rail
Current ratings	6 A - 100 A	2 A - 63 A	0.5 A - 63 A
Short circuit rating (kA)	6 kA	6 kA	10 kA
Curve types	General	C & D	B, C & D
Rated AC voltage 1P/2,3,4P	240/415 V	240/415 V	240/415 V
Rated DC voltage	250 V -2P 5 kA	48 V 1P 110 V 2P series	48 V 1P 110 V 2P series
Sealable in ON-Off position	No	Yes	Yes
Trip-free mechanism	Yes	Yes	Yes
Centre trip position	Yes	No	No
Padlock facility- non captive	Yes	Yes	Yes
Padlock facility- captive	Yes	Yes	Yes
Busbar connection- On-top	Fork	Pin	Pin
Busbar connection- OFF-bottom	Fork	Fork/Pin	Fork/Pin
Terminal size- On-top	-	35 mm^2	35 mm^2
Terminal size- OFF-bottom	-	35 mm^2	35 mm^2

Notes: [1]) UL listed MCB refer to NHP.

				
Din-T15	**Din-T10H**	**Din-T 2-in-1**	**Din-T DC**	**Din-T Easy-Fit**
AS/NZS 60947-2	AS/NZS 60947-2	AS/NZS 60898	AS/NZS 60898	AS/NZS 60898
1P - 18 mm 2P - 36 mm 3P - 54 mm 4P - 72 mm	1P - 27 mm 2P - 54 mm 3P - 81 mm 4P - 108 mm	1P + 1P - 18 mm 2P - 18 mm 3P - 36 mm 4P - 36 mm	1P- 18 mm 2P- 36 mm 4P- 81 mm	1P- 18 mm 3P- 54 mm
DIN rail	DIN rail	DIN rail	DIN rail	DIN rail
0.5 A - 63 A	80 A-125 A	2A-40 A	0.5A-63 A	6A-63 A
15k A - 50 kA	10 kA	6 kA	6 kA T15	6 kA
C	C & D	C	B & C	C
240/415 V	240/415 V	240/415 V	240/415 V	240/415 V
48 V 1P 110 V 2P series	125 V 2P series 250 V 4P series	-	250 V 1P 500 V 2P 880 V 4P series	-
Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes
No	No	No	No	No
Yes	Yes	Yes	Yes	Yes
Yes	Yes	No	Yes	No
Pin	Pin	Pin	Fork/Pin	-
Fork/Pin	Pin	Pin	Fork/Pin	Pin
35 mm^2	70 mm^2	16 mm^2	35 mm^2	4 mm^2 6 A-20 A 35 mm^2 25A - 63 A mm^2
35 mm^2	70 mm^2	16 mm^2	35 mm^2	35 mm^2

Miniature circuit breakers Safe-T & Din-T

Residual Current Devices

	Safe-T SRCB	**Din-Safe DSRCD**	**Din-Safe DSRCBS**
Standard [1])	AS3111 / AS3190	AS/NZS 61008	AS/NZS 61009
No. poles & module width	1P + N - 25 mm	2P - 36 mm, 4P - 72 mm	1P + N - 18 mm
Mounting	Clip tray	DIN rail	DIN rail
Current ratings	10 A, 16 A, 20 A	40 A, 63 A, 80 A, 100 A & 125 A	6 A, 10 A, 16 A, 20 A, 25 A & 32 A
Trip senstivity	10 mA & 30 mA	30 mA,100 mA 300 mA, 500 mA	30 mA
Sensitivity type	AC	AC, A, AI, S & B	AC & A
Short circuit rating (kA)	6 kA	Inc -10 kA MCB or fuse backup	6 kA
Curve types	General	-	B & C
Rated AC voltage	240 V	240 V/415 V	240 V
Sealable in ON-Off position	No	Yes	Yes
Trip-free mechanism	Yes	Yes	Yes
Centre trip position	Yes	No	No
Padlock- non captive	No	Yes	Yes
Padlock- captive	Yes	No	No
Busbar connection- On-top	Fork	Pin	-
Busbar connection- OFF-bottom	Fork	Fork/Pin	Pin
Terminal size- On-top	-	50 mm^2	16 mm^2
Terminal size- OFF-bottom	-	50 mm^2	35 mm^2

Notes: [1]) UL listed MCB refer to NHP.

				
Din-Safe DSRCBH	**Din-Safe DSRCB**	**Din-Safe DSRCB-P**	**Din-Safe DSRCM**	**Din-Safe Easy-fit**
AS/NZS 61009	AS/NZS 61009	AS/NZS 61009	AS 3190	AS/NZS 61008
1P + N - 18 mm	2P - 36 mm	2P - 36 mm	1P + N, 3P & 3P + N	2P - 36 mm, 4P - 72 mm
DIN rail	DIN rail	DIN rail	DIN rail	DIN rail
6 A, 10 A, 16 A, 20 A, 25 A, 32 A & 40 A	6 A, 10 A, 16 A, 20 A, 25 A, 32 A & 40 A	6 A, 10 A, 16 A, 20 A, 25 A, 32 A & 40 A	32 A, 63 A	40 A, 63 A
10 mA & 30 mA	10 mA & 30 mA	10 mA & 30 mA	30 mA, 100 mA & 300 mA	30 mA
A	AC & A	AC & A	AC & A	AC
10 kA	10 kA	10 kA	-	Inc - 10 kA MCB or fuse backup
C	C	C	-	-
240 V	110 V/240 V	110 V/240 V	240 V/415 V	240 V/415 V
Yes	Yes	Yes	No	Yes
Yes	Yes	Yes	Yes	Yes
No	No	No	No	No
Yes	Yes	Yes	No	Yes
Yes	Yes	Yes	No	No
-	Pin	-	-	-
Fork/Pin	Fork/Pin	Fork/Pin	-	Pin
25 mm^2	25 mm^2	25 mm^2	32 A- 16 mm^2 63 A- 25 mm^2	50 mm^2
35 mm^2	35 mm^2	35 mm^2	-	50 mm^2

Miniature circuit breakers

The range of miniature circuit breakers stocked by NHP fall into two categories.

Safe-T range which is the NEMA style zero point extinguishing circuit breaker. This range covers 6 to 100 A in 1, 2, 3 and 4 pole configurations with a short circuit rating of 6 kA. Being a zero point extinguishing circuit breaker minimal current limiting is experienced during a short circuit. This situation in the past has been acceptable and was compensated for by designing a system to cope with the high currents.

However as systems became more detailed and sophisticated there was a need to find an alternative which would have features allowing greater control than using fuses or zero point extinguishing circuit breakers. This alternative was the Din-T range of miniature circuit breakers.

Din-T miniature circuit breakers are a current limiting type device with a wide range of short circuit capacities, current ratings and curve types to choose from. Din-T circuit breakers are available in 6, 10 and 15 kA from 0.5 to 125 A in 1, 2, 3, and 4 pole configurations.

As a brief comparison of the current limiting abilities of the Safe-T and Din-T circuit breakers, consider the graphs below.

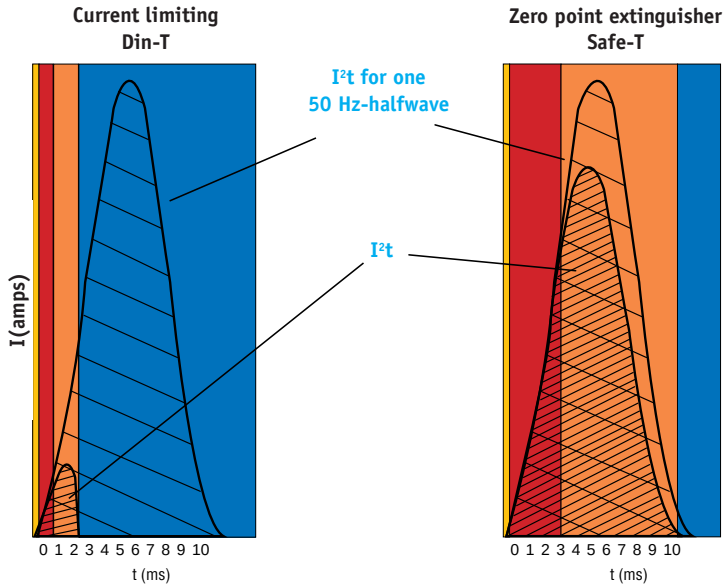
Prior to miniature circuit breakers the most common device for overcurrent and short circuit protection was a fuse.

Fuses however have major disadvantages such as:

- After overcurrent or short circuit the fuse had to be replaced. In the case of a circuit breaker a reset only is required.
- Fuses could be replaced with different current ratings quite easily to overcome apparent problems.
- During overloads in three phase systems “single phasing” can occur when just one fuse blows. Especially for motor loads, this is a great disadvantage.
- Fuses deteriorate with age.
- Fuses have higher wattage losses.

The introduction of circuit breakers brought advantages such as:

- Less downtime – quick reset.
- High circuit integrity due to different curve types and difficulty in interchanging different MCBs versus fuse cartridges.
- Increased personal safety through lower risk of contact with live parts.
- Simultaneous trip of all phases in a three phase system.
- No deterioration with age.
- Lower watts loss than a fuse.



These graphs indicate the three stages of arc formation, arc extinction and I^2t let through values.

1. Instantaneous trip time (yellow stage) indicates fault current levels just prior to magnetic trip mechanism response. (7-10 In).
2. Magnetic response time (red stage) from time of magnetic trip operation to time of arc being formed. Din-T style 1 millisecond, Safe-T style 3 milliseconds.
3. Arc extinction time (orange stage) from arc formation to complete arc extinction. Din-T style 2 milliseconds, Safe-T style 10 milliseconds.

Because total operating time of Din-T is much faster than Safe-T style MCB, the level of let-through energy in MCB is dramatically reduced. This is demonstrated by the difference in the I^2t areas detailed above.

Miniature circuit breakers (cont.)

The NHP range of miniature circuit breakers features a complete range of quality products for the protection of an electrical installation against overcurrent, short circuit and earth leakage.

The choice of miniature circuit breakers is influenced by:

(i) the magnitude of the prospective short circuit current determined by

- the size of conductors,
- the capacity of the supply transformer,
- the distance between the transformer and the short circuit point.

(ii) The required selectivity or association of the upstream circuit breaker or fuses and the downstream devices.

(iii) The earthing system and the maximum cable length.

(iv) The maximum nominal current required by the circuit.

(v) The expected initial current determined by the type of load.

(vi) The application area and the specified standard.

Din-T miniature circuit breakers can offer an application solution in every area.
Supporting the Din-T series of circuit breakers are an assortment of accessories which complete the range, they include:

- Auxiliary and alarm switches
- Earth leakage modules type Din-Safe-M
- Earth leakage circuit breakers type Din-Safe-MCB
- Earth leakage safety switches type Din-Safe
- Earth leakage relays RD series
- Surge diverters
- Time switches
- DIN rail mountable meters
- Main switches
- Changeover switches
- Impulse relays
- Hour run meters
- DIN rail mount contactors
- Pilot lights
- Pushbuttons
- Busbar combinations and lugs
- Insulated and metal enclosures
- Shunt trips
- Undervoltage trips

Miniature circuit breakers

Safe-T series 6 kA MCB

- Standards AS 3111, AS 2184
- Approval No. V99347
- UL 489 fluorescent switching duty [1])
- Lloyd's register
- Short circuit breaking capacity – 6000 amps
- Current range 6 - 100 amps 1, 2, 3, and 4 pole
- RCD and shunt trip range available
- Clip-tray mounting
- Suits CT type busbar chassis

Safe-T MCBs, 1 - 4 pole

Application

Control and protection of circuit and equipment against overloads and short circuits in commercial and industrial distribution systems.

1 pole 1 module

In (A)	Cat. No.
6	SAFE-T6106
10	SAFE-T6110
16	SAFE-T6116
20	SAFE-T6120
25	SAFE-T6125
32	SAFE-T6132
40	SAFE-T6140
50	SAFE-T6150
63	SAFE-T6163
80	SAFE-T6180
100	SAFE-T61100

1P

1 protected pole

2 pole 2 modules

In (A)	Cat. No.
6	[i] SAFE-T6206
10	SAFE-T6210
16	SAFE-T6216
20	SAFE-T6220
25	[i] SAFE-T6225
32	SAFE-T6232
40	SAFE-T6240
50	[i] SAFE-T6250
63	SAFE-T6263
80	[i] SAFE-T6280
100	[i] SAFE-T62100

2P

2 protected poles

3 pole 3 modules

6	SAFE-T6306
10	SAFE-T6310
16	SAFE-T6316
20	SAFE-T6320
25	SAFE-T6325
32	SAFE-T6332
40	SAFE-T6340
50	SAFE-T6350
63	SAFE-T6363
80	SAFE-T6380
100	SAFE-T63100

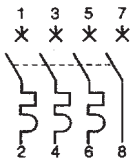
3P

3 protected poles

4 pole 4 modules

6	[i] SAFE-T6406
10	[i] SAFE-T6410
16	[i] SAFE-T6416
20	[i] SAFE-T6420
25	[i] SAFE-T6425
32	[i] SAFE-T6432
40	[i] SAFE-T6440
50	[i] SAFE-T6450
63	[i] SAFE-T6463
80	[i] SAFE-T6480
100	[i] SAFE-T64100

4P



3 protected poles

Accessories	Page
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Tunnel terminals	1 - 13
Pole fillers	1 - 13
Clip tray	1 - 13
Flush kit	1 - 13
Link bar	1 - 13
Wiring harness	1 - 13
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Technical data	Page
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Temperature compensation	3 - 25
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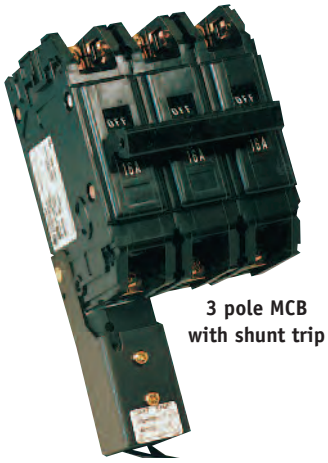
Notes: [1]) Refer technical data page 3 - 25.
[i] Available on indent only.

Miniature circuit breakers

Safe-T series 6 kA MCB with shunt trip



- Standards AS 3111, AS 2184
- Approval No. V99347
- Lloyd's register
- Short circuit breaking capacity – 6000 amps
- Current range 6 - 100 amps 1, 2, 3, and 4 pole
- Shunt mounted in-line
- Clip-tray mounting
- Suits CT type busbar chassis

Operation

For remote tripping of circuit breaker (1 to 4 poles). As this is an in-line shunt trip, it does not take up any extra pole spaces.

Application

- Emergency stop.
- Isolation of socket outlets.

Warning
Short time rated coil: Coil burnout will result if coil remains energised.

1 pole 1 module

In (A)	Cat. No.
6	SAFE-T6106SHT
10	SAFE-T6110SHT
16	SAFE-T6116SHT
20	SAFE-T6120SHT
25	SAFE-T6125SHT
32	SAFE-T6132SHT
40	SAFE-T6140SHT
50	SAFE-T6150SHT
63	SAFE-T6163SHT
80	SAFE-T6180SHT
100	SAFE-T61100SHT

2 pole 2 modules

In (A)	Cat. No.
6	SAFE-T6206SHT
10	SAFE-T6210SHT
16	SAFE-T6216SHT
20	SAFE-T6220SHT
25	SAFE-T6225SHT
32	SAFE-T6232SHT
40	SAFE-T6240SHT
50	SAFE-T6250SHT
63	SAFE-T6263SHT
80	SAFE-T6280SHT
100	SAFE-T62100SHT

3 pole 3 modules

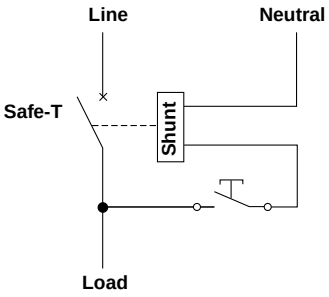
6	SAFE-T6306SHT
10	SAFE-T6310SHT
16	SAFE-T6316SHT
20	SAFE-T6320SHT
25	SAFE-T6325SHT
32	SAFE-T6332SHT
40	SAFE-T6340SHT
50	SAFE-T6350SHT
63	SAFE-T6363SHT
80	SAFE-T6380SHT
100	SAFE-T63100SHT

4 pole 4 modules

6	SAFE-T6406SHT
10	SAFE-T6410SHT
16	SAFE-T6416SHT
20	SAFE-T6420SHT
25	SAFE-T6425SHT
32	SAFE-T6432SHT
40	SAFE-T6440SHT
50	SAFE-T6450SHT
63	SAFE-T6463SHT
80	SAFE-T6480SHT
100	SAFE-T64100SHT

Note: Available on indent only.

Shunt trip connection diagram



For remote tripping of a circuit breaker (1 to 4 poles). As this is an 'In-line mounting' shunt trip it does not take up any extra pole spaces.

Coil ratings

Voltage (V)	Current peak (A)
48 to 250 V DC	2.32
120 to 440 V AC	4.88

Operating range 70-110% of nominated voltage.

The coil supply is normally taken from the load side of the breaker to cut the supply when the breaker is tripped.
Coil voltages: 120-440 V AC,
48-250 V DC.

Warning Short time rated coil

Power supply must be disconnected when breaker trips. Wire via load side of breaker or use momentary contact pushbutton as cut-off switch.
See drawing above.

Technical data

Miniature circuit breakers

Safe-T main switches 63 and 100 amps

3 pole main switch

- Mounts onto CT chassis busbar as main switch
- Available with shunt trip
- Identical profile to Safe-T MCB

Operation

Non-auto MCB without overcurrent or short circuit protection suitable for main switch/isolator.

Without shunt trip

In (A)	No. of Poles	Modules	Cat. No.
63	1	1	SAFE-T6163NA
	2	2	[i] SAFE-T6263NA
	3	3	SAFE-T6363NA
	4	4	[i] SAFE-T6463NA
100	1	1	SAFE-T61100NA
	2	2	[i] SAFE-T62100NA
	3	3	SAFE-T63100NA
	4	4	[i] SAFE-T64100NA

With shunt trip

63	1	1	[i] SAFE-T6163NASHT
	2	2	[i] SAFE-T6263NASHT
	3	3	SAFE-T6363NASHT
	4	4	[i] SAFE-T6463NASHT
100	1	1	[i] SAFE-T61100NASHT
	2	2	[i] SAFE-T62100NASHT
	3	3	SAFE-T63100NASHT
	4	4	[i] SAFE-T64100NASHT

Technical data Safe-T NA models only

In (A)	Make/Break (A)	Short time rating (A/sec)
63	504/630	756/0.1
100	800/1000	1200/0.1

Technical data	Page
Dimensions	3 - 28

Note: [i] Available on indent only.

Miniature circuit breakers

Safe-T single pole width residual current circuit breakers (RCBO)

SRCB

- Standards AS 3111, AS 3190
- Approval No. N15251
- Mines approval: [1]) - MDA Ex. 11576
  - QMD 997458XU
- Current rating: 10, 16 and 20 amps
- Voltage 240 V AC 50/60 Hz
- Short circuit protection 6000 amps
- Center tripped position

Amp rating (A)	No. of Poles	Modules	Trip sensitivity (mA)	Cat. No.
10	1	1	30	**SRCB 1030**
16	1	1	30	**SRCB 1630**
20	1	1	30	**SRCB 2030**
10	1	1	10	**SRCB 1010**
16	1	1	10	**SRCB 1610**
20	1	1	10	**SRCB 2010**

Adaptor Kit

Accessories

Description		Cat. No.
Padlock attachment	12 pack and resin	**SRCB LCK 12**
kit (capture)	24 pack and resin	**SRCB LCK 24**
Adaptor kit	Eaton/CH/Westinghouse Quicklag	**SRCB WA**
	Heinemann	**SRCB HA**

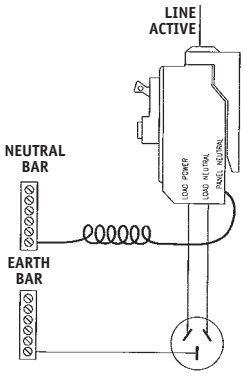
Padlock attachment kit

Operation

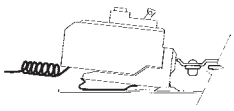
Safe-T single pole width residual current circuit breakers offer overload, short circuit and earth leakage protection in a single module width unit.

1. Overload protection is provided by its calibrated thermal overload.
2. Short circuit protection is provided by its magnetic trip mechanism up to 6 kA prospective.
3. Earth leakage protection is by its in-built electronic core-balance device.

Mounting arrangements are identical throughout the Safe-T MCB range utilising the NHP clip-tray mounting system in panelboards and loadcentres.

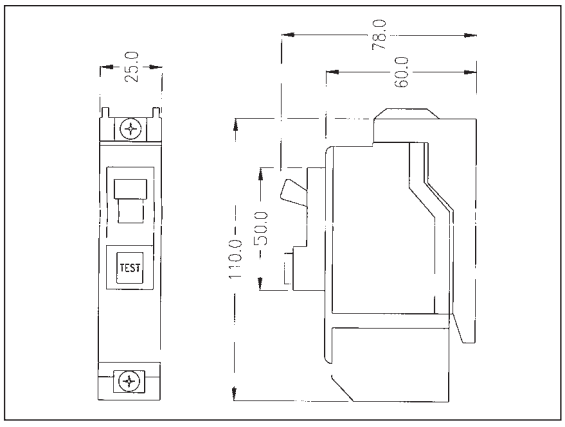


Connection diagram



Mounting arrangement

Dimensions (mm)



Technical data	Page
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Temperature compensation	3 - 27

Notes: [1]) 30 mA units only.
i Available on indent only.
Nuisance tripping may be experienced in VFD and motor starting applications refer NHP.

Miniature circuit breakers

Safe-T earth leakage relay (ELR)

- Standard AS 3190
- Approval No. N15380
- Mines approved: [1]) - MDA Ex. 11577 - QMD 997459XU
- NHP clip-tray mounting (CT chassis)

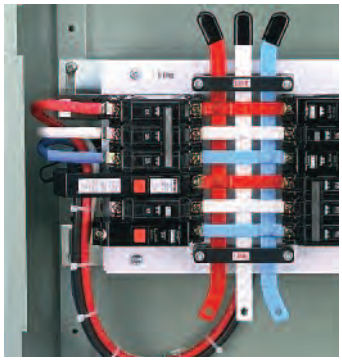
ELR - Earth leakage relay

No. of Poles	Sensitivity mA [1])	Voltage (V) (AC)	Cat. No.
1	10	240	**ELR24010**
1	30	240	**ELR24030**
1	100	240	**ELR240100**
1	300	240	**ELR240300**
1	30	415 - 440	**ELR44030**

Application

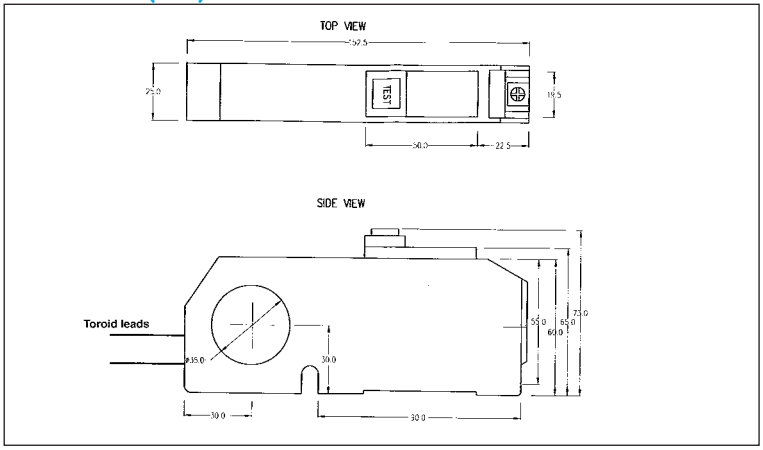
The ELR is identical in width to the single pole Safe-T MCB and can be clip-tray mounted directly alongside Safe-T MCBs when fitting to NHP's range of CT chassis, typically found in the CST/CPS range of panelboards.
The ELR when combined with a Safe-T MCB via a shunt trip can be used on an incoming feeder circuit to provide earth leakage protection of a number of downstream sub-circuits. An example of this would be side feeding a CT chassis with an MCB and ELR combination resulting in all circuits on the chassis afforded earth leakage protection. Or additionally, by splitting the chassis using an NHP split chassis kit, a selected portion of the chassis can be protected.

Suitable for commercial and industrial applications.



Note: If one faulty sub-circuit causes the ELR to trip, power will be interrupted to the entire protected section of the chassis, ie, no discrimination.

Dimensions (mm)



Notes: [1]) Mines dept approval 30 mA only.
Shunt trip MCB ordered separately.
Nuisance tripping may be experienced in VFD and motor starting applications refer NHP.

The ELR combined with a Safe-T MCB is also suitable for protecting single outgoing sub-circuits. The ELR is suitable for incorporating into new commercial and industrial installations or can be retrofitted into existing installations comprising Safe-T MCBs.

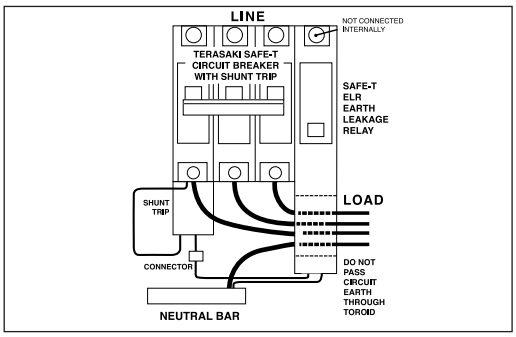
Operation

When combining the ELR with a Safe-T MCB and shunt trip, the resulting combination offers overload, short circuit and earth leakage protection. The ELR may also be combined with a non-auto (no thermal or magnetic trip) Safe-T MCB for use as a main switch with earth leakage protection.

Test function

A test button is provided on the relay to functionally test the detection and tripping circuits. It is recommended a functional test be performed periodically.

Connection diagram



Technical data

Tripping time	Instantaneous
Operating voltage	240 V AC -50% +20%
Frequency	40-60 Hz
Current rating (switching)	0.5 A nominal, peak current 8 A. Typical use shunt trip operation.
Toroid window	4 x 35 mm² (aperture dia 35 mm)
Weight	0.1 kg

Accessories

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Safe-T MCB with shunt	1 - 9
Safe-T main switch & shunt	1 - 10
Split chassis kit	2 - 43

Miniature circuit breakers

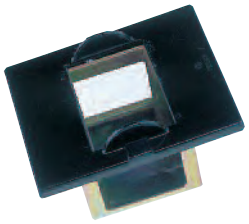
Safe-T series – options, hardware and accessories

Description		Cat. No.
Handle cap (green)		TAA5CG
Handle cap (yellow)		TAA5LY
Padlock attachment - 1 pole (removable)		TKB50SG-L
Padlock attachment - 3 pole (removable)		TKC50SG
Padlock attachment	12 pack and resin	SAFETLCK 12
kits (captive)	24 pack and resin	SAFETLCK 24
Tunnel terminal (35 mm²)	Safe-T 6-63 A	7T1ST
Tunnel terminal (70 mm²)	Safe-T 80-100 A	7T2ST
Pole filler		SAFE-TPF
Tee-off plastic cap		TH250TOPC
Clip-tray (per 12 pole pieces)		TDB50SG12
Dummy MCB (for touch protection)		SAFETDM

Tunnel terminals

Can be fitted to Safe-T breakers if extra large cables are to be used. eg. for voltage drop reasons.

35 mm²	6 - 63 amp	Safe-T
70 mm²	80 - 100 amp	Safe-T



Flush mounting kit

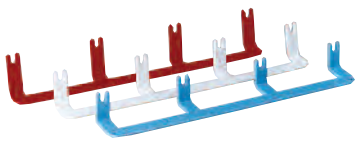
This allows a Safe-T MCB to be panel mounted. A very useful concept for inbuilt equipment protection–such as welders, UPS systems and line conditioners, etc.

'Clip-On' mounting

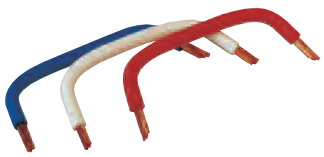
Rows of clip-on mounting tray are stocked in snap-off lengths of 12 single poles. These can be spot welded, rivetted or screwed to base plate.

Accesssories

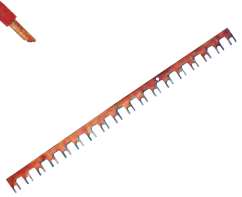
Phase	No. of Poles	Description	Cat. No.
1	6	Link bar (120 A)	LB-6
1	9	Link bar (120 A)	LB-9
1	12	Link bar (120 A)	LB-12
1	15	Link bar (120 A)	LB-15
1	18	Link bar (120 A)	LB-18
1	24	Link bar (120 A)	LB-24
3	12	Link bar (120 A)	LB3PH12
3	18	Link bar (120 A)	LB3PH18
-	1	Flush mount kit	7PE50SG1
-	2	Flush mount kit	7PE50SG2
-	3	Flush mount kit	7PE50SG3
-	4	Flush mount kit	7PE50SG4
3	-	Wiring harness (80 A)	SAFE-TWH3P



3 phase link bars



3 phase wiring harness



Link bars

TKB505G

TAA5LY

Plastic pole fillers

Available to cover space left for future expansion.

Tee-off plastic caps

Available to cover stripped tee-offs on TH chassis.

Locking attachments

TKB and TKC removable padlock attachments can be fitted in the "on" and "off" position.

SAFETLCK captive padlock attachments are glued to the MCB using the adhesive resin supplied.

TAA handle attachments are not lockable but are used to prevent inadvertent operation of the toggle or provide identification.

Note: The breaker can still trip free with this device fitted.

Note: Available on indent only.

Miniature circuit breakers

Din-T6 series 6 kA MCB

- Standards AS/NZS 60898
- Approval No. N17481
- Current range 2-63 Amps 1, 2 and 3 pole
- Sealable and lockable handle
- Available in curve type C and D
- Mounts on NC or CD chassis
- Padlockable in off position

DTCB6
1 pole

1 pole 1 module

In (A)	C – Curve 5-10 In Cat. No.	In (A)	D – Curve 10-20 In Cat. No.
2	DTCB6102C	2	DTCB6102D
4	DTCB6104C	4	DTCB6104D
6	DTCB6106C	6	DTCB6106D
10	DTCB6110C	10	DTCB6110D
13	DTCB6113C	13	[i] DTCB6113D
16	DTCB6116C	16	DTCB6116D
20	DTCB6120C	20	DTCB6120D
25	DTCB6125C	25	DTCB6125D
32	DTCB6132C	32	DTCB6132D
40	DTCB6140C	40	DTCB6140D
50	DTCB6150C	50	DTCB6150D
63	DTCB6163C	63	DTCB6163D

2 pole 2 modules

2	DTCB6202C	2	DTCB6202D
4	DTCB6204C	4	DTCB6204D
6	DTCB6206C	6	DTCB6206D
10	DTCB6210C	10	DTCB6210D
13	[i] DTCB6213C	13	[i] DTCB6213D
16	DTCB6216C	16	DTCB6216D
20	DTCB6220C	20	DTCB6220D
25	DTCB6225C	25	DTCB6225D
32	DTCB6232C	32	DTCB6232D
40	DTCB6240C	40	DTCB6240D
50	DTCB6250C	50	DTCB6250D
63	DTCB6263C	63	DTCB6263D

3 pole 3 modules

2	DTCB6302C	2	DTCB6302D
4	DTCB6304C	4	DTCB6304D
6	DTCB6306C	6	DTCB6306D
10	DTCB6310C	10	DTCB6310D
13	[i] DTCB6313C	13	[i] DTCB6313D
16	DTCB6316C	16	DTCB6316D
20	DTCB6320C	20	DTCB6320D
25	DTCB6325C	25	DTCB6325D
32	DTCB6332C	32	DTCB6332D
40	DTCB6340C	40	DTCB6340D
50	DTCB6350C	50	DTCB6350D
63	DTCB6363C	63	DTCB6363D

Short circuit capacity 6 kA

In (A)	2 - 63
1 P	240 V AC
2 P	240 - 415 V AC
3 P	240 - 415 V AC

DC use

	1 P	2 P [1])
Short circuit	20 kA	25 kA
Max.voltage (DC)	48 V	110 V

Use at DC

When using Din-T6 in a DC application the magnetic tripping current is approximately 40 % higher than in AC 50/60 Hz.

Shock resistance (In X, Y, Z directions).

20 g with shock duration 10 ms (minimum 18 shocks).
40 g with shock duration 5 ms (minimum 18 shocks).

Vibration resistance (In X, Y, Z directions).

3 g in frequency range 10 to 55 Hz
(operating time at least 30 min).
According to IEC 60068-2-6.

Storage temperature

From -55 °C to +55 °C, according to IEC 88 part 2 - 1 (duration 96 hours).

Operating temperature

From -25 °C to +55 °C, according to VDE 0664 parts 1 and 2.

Use at 400 Hz

At 400 Hz the magnetic trip current is approximately 50 % higher than in AC 50/60 Hz.

Accessories	Page
Add on RCD	1 - 28, 1 - 29
Auxiliary/alarm	1 - 32 to 1 - 35
Shunt trip	1 - 36 to 1 - 38
UVT	1 - 39, 1 - 40
Padlockable bracket	1 - 45
Link bars & terminals	1 - 44, 1 - 45
Enclosures	Section 2
Busbar chassis	2 - 52

Technical data	Page
Technical data	Section 3
Tripping characteristics	3 - 6, 8
Dimensions	3 - 24

Notes: [1]) 2 pole MCB connected in series.
The line side is the "OFF" (bottom) side of the MCB, and connects to NC or CD chassis tee-offs.
[i] Available on indent only.

Miniature circuit breakers

Din-T6 2-in-1 series 6 kA MCB

1 pole + 1 pole

- Standard AS/NZS 60898
- Approval No. NSW24783
- Current range 2 - 40 Amps 1, 2, 3 and 4 pole
- Saves up to 50 % space
- C curve
- Sealable and locking handle
- Padlock-able in Off position

1 pole + 1 pole
Single module width (18 mm)

In (A)	C – Curve 5-10 In Cat. No.
2	DTCB-D6-11-02-C
4	DTCB-D6-11-04-C
6	DTCB-D6-11-06-C
10	DTCB-D6-11-10-C
16	DTCB-D6-11-16-C
20	DTCB-D6-11-20-C

2 pole

2 pole
Single module width (18 mm)

In (A)	C – Curve 5-10 In Cat. No.
2	DTCB-D6-2-02-C
4	DTCB-D6-2-04-C
6	DTCB-D6-2-06-C
10	DTCB-D6-2-10-C
16	DTCB-D6-2-16-C
20	DTCB-D6-2-20-C
25	DTCB-D6-2-25-C
32	DTCB-D6-2-32-C
40	DTCB-D6-2-40-C

3 pole
Two module width (36 mm)

In (A)	C – Curve 5-10 In Cat. No.
2	DTCB-D6-3-02-C
4	DTCB-D6-3-04-C
6	DTCB-D6-3-06-C
10	DTCB-D6-3-10-C
16	DTCB-D6-3-16-C
20	DTCB-D6-3-20-C
25	DTCB-D6-3-25-C
32	DTCB-D6-3-32-C
40	DTCB-D6-3-40-C

4 pole
Two module width (36 mm)

In (A)	C – Curve 5-10 In Cat. No.
2	DTCB-D6-4-02-C
4	DTCB-D6-4-04-C
6	DTCB-D6-4-06-C
10	DTCB-D6-4-10-C
16	DTCB-D6-4-16-C
20	DTCB-D6-4-20-C
25	DTCB-D6-4-25-C
32	DTCB-D6-4-32-C
40	DTCB-D6-4-40-C

Short circuit capacity 6 kA

In (A)	
1P + 1P	240 - 415 V AC
2P	240 - 415 V AC
3P	240 - 415 V AC
4P	240 - 415 V AC

Miniature circuit breakers

Din-T DC series

6 kA (0.5-63 A) interrupting capacity 'C' curve

- Standard AS/NZS 60898
- Approval No. NSW 24265
- Current range 0.5-63 Amps, 1 and 2 pole
- DC voltage, 250 V 1 pole, 500 V 2 pole
- AC voltage, 230 V 1 pole, 400 V 2 pole
- Sealable and lockable handle
- DIN rail mounting
- Padlockable in OFF position
- Suits NC or CD type chassis
- Industrial applications

DTCBDC
DC applications

Operation

Din-T DC MCBs are equipped with a permanent magnet which aids arc extinguishing under fault conditions, making this range of MCBs suitable for DC voltages up to 250 V DC (1 pole) and 500 V DC (2 poles). Din-T DC MCBs are also suitable for AC voltages. Polarity labelling must be respected due to permanent magnet in the MCB.

Curve type: C (5 - 10 I_n)

Single pole		Double pole	
Amps	**Cat. No.**	**Amps**	**Cat. No.**
0.5	[i] **DTCBDC105C**	0.5	[i] **DTCBDC205C**
1	**DTCBDC101C**	1	**DTCBDC201C**
2	**DTCBDC102C**	2	**DTCBDC202C**
4	**DTCBDC104C**	4	**DTCBDC204C**
6	**DTCBDC106C**	6	**DTCBDC206C**
10	**DTCBDC110C**	10	**DTCBDC210C**
16	**DTCBDC116C**	16	**DTCBDC216C**
20	**DTCBDC120C**	20	**DTCBDC220C**
25	**DTCBDC125C**	25	**DTCBDC225C**
32	**DTCBDC132C**	32	**DTCBDC232C**
40	**DTCBDC140C**	40	**DTCBDC240C**
50	**DTCBDC150C**	50	**DTCBDC250C**
63	**DTCBDC163C**	63	**DTCBDC263C**

For DC applications

Notes: **The line side is the 'OFF' or bottom side of the MCB, and connects to NC or CD chassis tee off's.**
[i] Available on indent only.

Short circuit capacity (kA)

AC/DC acc. to EN 60898

Poles	Max	Icn (kA)
1	125/250 DC	10/6
2	250/500 DC	10/6

Shock resistance (In X, Y, Z directions).

20 g with shock duration 10 ms (minimum 18 shocks).
40 g with shock duration 5 ms (minimum 18 shocks).
Half sinusoidal according to IEC 60068-2-27.

Vibration resistance (In X, Y, Z directions).

3 g in frequency range 10 to 55 Hz
(operating time at least 30 min).
According to IEC 60068-2-6.

Storage temperature

From -55 °C to +55 °C, according to IEC 88 part 2 - 1 (duration 96 hours).

Operating temperature

From -25 °C to +55 °C, according to VDE 0664 parts 1 and 2.

Miniature circuit breakers

Din-T DC series

6 kA (10-63 A) interrupting capacity 'B' curve

- Standard AS/NZS 60898
- Approval No. NSW 24265
- Current range 10-63 Amps, 4 pole
- DC voltage, 880 V
- Sealable and lockable handle
- DIN rail mounting
- Padlockable in OFF position
- Industrial applications

DTCBDC
DC applications

Operation

Din-T DC MCBs are equipped with a permanent magnet which aids arc extinguishing under fault conditions, making this range of MCBs suitable for DC voltages up to 880 V DC (4 poles in series). Polarity labelling must be respected due to permanent magnet in the MCB.

Curve type: C (5 - 10 I_n)

Four pole

Amps	Cat. No.
10	**DTCBDC410B**
16	**DTCBDC416B**
20	**DTCBDC420B**
25	[i] **DTCBDC425B**
32	[i] **DTCBDC432B**
40	[i] **DTCBDC440B**
63	**DTCBDC463B**

For DC applications

Short circuit capacity (kA)

AC/DC acc. to EN 60898

Poles	V Max	Icn (kA)
4	880 DC	6

Shock resistance (In X, Y, Z directions).

20 g with shock duration 10 ms (minimum 18 shocks).
40 g with shock duration 5 ms (minimum 18 shocks).
Half sinusoidal according to IEC 60068-2-27.

Vibration resistance (In X, Y, Z directions).

3 g in frequency range 10 to 55 Hz
(operating time at least 30 min).
According to IEC 60068-2-6.

Storage temperature

From -55 °C to +55 °C, according to IEC 88 part 2 - 1 (duration 96 hours).

Operating temperature

From -25 °C to +55 °C, according to VDE 0664 parts 1 and 2.

Accessories	Page
Shunt trip	1 - 28, 1 - 29
Auxiliary/alarm	1 - 32 to 35
Padlockable bracket	1 - 45
Terminals	1 - 44, 1 - 45
Enclosures	Section 2

Technical data	Page
Technical data	Section 3
Tripping characteristics	3 - 6, 3 - 8
Dimensions	3 - 24

Notes: [i] Available on indent only.

Miniature circuit breakers

Din-T10 series 10 kA MCB

- Standard AS/NZS 60898 [1])
- Approval No. N17481
- Current range 0.5 - 63 Amps 1, 2, 3 and 4 pole
- Sealable and lockable handle
- Modular design
- Available in curve type B, C and D
- Mounts on NC or CD chassis

DTCB10
1 pole

1 pole 1 module

In (A)	B – Curve 3-5 In Cat. No.	C – Curve [1]) 5-10 In Cat. No.	D – Curve 10-20 In Cat. No.
0.5	-	DTCB10105C	[i] DTCB10105D
1	-	DTCB10101C	DTCB10101D
2	-	DTCB10102C	DTCB10102D
3	-	DTCB10103C	-
4	-	DTCB10104C	DTCB10104D
6	DTCB10106B	DTCB10106C	DTCB10106D
10	DTCB10110B	DTCB10110C	DTCB10110D
13	[i] DTCB10113B	[i] DTCB10113C	[i] DTCB10113D
16	DTCB10116B	DTCB10116C	DTCB10116D
20	DTCB10120B	DTCB10120C	DTCB10120D
25	DTCB10125B	DTCB10125C	DTCB10125D
32	DTCB10132B	DTCB10132C	DTCB10132D
40	DTCB10140B	DTCB10140C	DTCB10140D
50	[i] DTCB10150B	DTCB10150C	DTCB10150D
63	DTCB10163B	DTCB10163C	DTCB10163D

2 pole 2 modules

0.5	-	[i] DTCB10205C	[i] DTCB10205D
1	-	DTCB10201C	DTCB10201D
2	-	DTCB10202C	DTCB10202D
4	-	DTCB10204C	DTCB10204D
6	DTCB10206B	DTCB10206C	DTCB10206D
10	DTCB10210B	DTCB10210C	DTCB10210D
13	[i] DTCB10213B	[i] DTCB10213C	[i] DTCB10213D
16	DTCB10216B	DTCB10216C	DTCB10216D
20	DTCB10220B	DTCB10220C	DTCB10220D
25	DTCB10225B	DTCB10225C	DTCB10225D
32	DTCB10232B	DTCB10232C	DTCB10232D
40	DTCB10240B	DTCB10240C	DTCB10240D
50	[i] DTCB10250B	DTCB10250C	DTCB10250D
63	[i] DTCB10263B	DTCB10263C	DTCB10263D

Notes: [1]) A range of UL standard MCBs is available on indent. (ref DTCBUL10_ _ _ C).
[2]) 2 pole MCB connected in series.
The line side is the "OFF" (bottom) side of the MCB, and connects to NC or CD chassis tee-offs.
[i] Available on indent only.

Short circuit capacity 10 kA

In (A)	0.5 - 63
1 P	240 V AC
2 P	240/415 V AC
3 P	240/415 V AC
4 P	240/415 V AC

Use at DC

	1 P	2 P [2])
Short circuit	25 kA	30 kA
Max voltage	48 V DC	110 V DC

Accessories

Technical data

Miniature circuit breakers

Din-T10 series 10 kA MCB (cont.)

3 pole 3 modules

In (A)	B – Curve 3-5 In Cat. No.	C – Curve 5-10 In Cat. No.	D – Curve 10-20 In Cat. No.
0.5	–	DTCB10305C	i DTCB10305D
1	–	DTCB10301C	i DTCB10301D
2	–	DTCB10302C	i DTCB10302D
4	–	DTCB10304C	DTCB10304D
6	i DTCB10306B	DTCB10306C	DTCB10306D
10	DTCB10310B	DTCB10310C	DTCB10310D
13	i DTCB10313B	i DTCB10313C	i DTCB10313D
16	DTCB10316B	DTCB10316C	DTCB10316D
20	DTCB10320B	DTCB10320C	DTCB10320D
25	DTCB10325B	DTCB10325C	DTCB10325D
32	DTCB10332B	DTCB10332C	DTCB10332D
40	DTCB10340B	DTCB10340C	DTCB10340D
50	i DTCB10350B	DTCB10350C	DTCB10350D
63	DTCB10363B	DTCB10363C	DTCB10363D

4 pole 4 modules [1])

6	i DTCB10406B	DTCB10406C	i DTCB10406D
10	i DTCB10410B	DTCB10410C	i DTCB10410D
13	i DTCB10413B	i DTCB10413C	i DTCB10413D
16	i DTCB10416B	DTCB10416C	i DTCB10416D
20	i DTCB10420B	DTCB10420C	DTCB10420D
25	i DTCB10425B	DTCB10425C	DTCB10425D
32	i DTCB10432B	DTCB10432C	DTCB10432D
40	i DTCB10440B	DTCB10440C	i DTCB10440D
50	i DTCB10450B	DTCB10450C	i DTCB10450D
63	i DTCB10463B	DTCB10463C	i DTCB10463D

Accessories	Page
Add-on RCD	1 - 28 to 1 - 29
Shunt trip	1 - 36 to 1 - 38
UVT	1 - 39 to 1 - 40
Auxiliary/alarm	1 - 32 to 1 - 35
Padlock bracket	1 - 45
Link bars and terminals	1 - 44 to 1 - 45
Enclosures	Section 2
Busbar chassis	2 - 52

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Technical data	Section 3
Tripping characteristics	3 - 6, 3 - 8
Dimensions	3 - 24

Notes: [1]) All poles include overcurrent and short circuit protection.
i Available on indent only.

Miniature circuit breakers

Din-T10H series

10 kA (80-125 A) interrupting capacity, C Curve

7.5 kA (80-125 A) interrupting capacity, D Curve

- Standard AS/NZS 60947-2
- Short circuit breaking capacity – 10 kA / 7.5 kA
- Current range 80-125 Amps 1, 2, 3 and 4 pole
- Module width = 27 mm
- Suits NCH or CDH hybrid type chassis
- Industrial applications

DINT10H
1 pole type

Din-T 10H with terminal cover

10 kA 1 pole 1.5 module

In (A)	C – Curve 5-10 In Cat. No.	In (A)	D – Curve 10-20 In Cat. No.
80	DIN-T10H180C	80	[i] DIN-T10H180D
100	DIN-T10H1100C	100	[i] DIN-T10H1100D
125	DIN-T10H1125C	125	DIN-T10H1125D

10 kA 2 pole 3 modules

80	DIN-T10H280C	80	[i] DIN-T10H280D
100	DIN-T10H2100C	100	[i] DIN-T10H2100D
125	DIN-T10H2125C	125	[i] DIN-T10H2125D

10 kA 3 pole 4.5 modules

80	DIN-T10H380C	80	DIN-T10H380D
100	DIN-T10H3100C	100	DIN-T10H3100D
125	DIN-T10H3125C	125	DIN-T10H3125D

10 kA 4 pole 6 modules

80	[i] DIN-T10H480C	80	[i] DIN-T10H480D
100	DIN-T10H4100C	100	[i] DIN-T10H4100D
125	[i] DIN-T10H4125C	125	[i] DIN-T10H4125D

Accessories [2])

		Cat. No.
Terminal cover		DIN-T10HTC
Shunt trips	110 - 415 V AC / 110 - 125 V DC	DIN-TSHT110415U
	24 - 60 V AC / 24 - 48 V DC	DIN-TSHT2460U
Auxiliary switch	H & H/S	DINT10HHS
One auxiliary switch plus selectable alarm or auxiliary switch		

Notes: [1]) Poles in series.
The LINE-side is the OFF or bottom of the MCB and connects to NCH or CDH chassis tee-offs.
[2]) Side mounting Din-T 6, 10, 15 accessories will not fit Din-T 10H. Refer above for compatible accessories.
[i] Available on indent only.

Short circuit capacity
Icu 10,000 Amps Ics 10,000 Amps

In (A)	80-125
1 P	240 V AC
2 P	240/415 V AC
3 P	240/415 V AC
4 P	240/415 V AC

Use at DC

	2 P [1])	4 P [1])
Short circuit	10000 A	10000 A
Max voltage	125 V DC	250 V DC

Accessories

Technical data

Miniature circuit breakers

Din-T15 series 15 kA, 20 kA, 25 kA MCBs

- Standards AS/NZS 60947-2
- Current range 6-63 Amp 1, 2, 3 and 4 pole
- Sealable and lockable handle
- Modular design
- Mounts on NC or CD chassis
- Industrial applications

DTCB15
1 pole

1 pole 1 module [1])

In (A)	Icu (kA)	C - Curve 5 - 10 In
6	25	DTCB15106C
10	25	DTCB15110C
13	25	i DTCB15113C
16	25	DTCB15116C
20	25	DTCB15120C
25	25	DTCB15125C
32	20	DTCB15132C
40	20	DTCB15140C
50	15	DTCB15150C
63	15	DTCB15163C

2 pole 2 modules [1])

In (A)	Icu (kA)	C - Curve 5 - 10 In
6	25	i DTCB15206C
10	25	DTCB15210C
13	25	i DTCB15213C
16	25	DTCB15216C
20	25	DTCB15220C
25	25	i DTCB15225C
32	20	i DTCB15232C
40	20	i DTCB15240C
50	15	i DTCB15250C
63	15	i DTCB15263C

3 pole 3 modules [1])

6	25	DTCB15306C
10	25	DTCB15310C
13	25	i DTCB15313C
16	25	DTCB15316C
20	25	DTCB15320C
25	25	DTCB15325C
32	20	DTCB15332C
40	20	DTCB15340C
50	15	DTCB15350C
63	15	DTCB15363C

4 pole 4 modules [1]) [2])

6	25	i DTCB15406C
10	25	i DTCB15410C
13	25	i DTCB15413C
16	25	i DTCB15416C
20	25	i DTCB15420C
25	25	i DTCB15425C
32	20	i DTCB15432C
40	20	i DTCB15440C
50	15	i DTCB15450C
63	15	i DTCB15463C

In (A)	6 - 63
1 P	240 V AC
2 P	240/415 V AC
3 P	240/415 V AC
4 P	240/415 V AC

Shock resistance (in x, y, z direction)

20 g with shock duration of 10 ms (minimum 18 shocks)
40 g with shock duration of 5 ms (minimum 18 shocks)

Vibration resistance (in x, y, z direction)

3 g in frequency range 10 to 55 Hz (operating time at least 30 mins) according to IEC 60068-2-6

Storage temperature

from -55 °C to +55 °C according to VDE 0664 parts 1 and 2

Operating temperature

from -25 °C to +55 °C according to VDE 0664 Parts 1 and 2.

Use at 400 Hz

At 400 Hz the magnetic tripping current is approximately 50 % higher than at AC 50/60 Hz

Notes: [1]) Refer Section 3 for kA ratings at 240/415 V. The above ratings are at 415 V AC.
[2]) All poles include overcurrent and short circuit protection.
i Available on indent only.

The LINE-side is the OFF or bottom of the MCB and connects to CD chassis tee-offs.

Accessories	Page
Add-on RCD	1 - 28 to 1 - 29
Shunt trip	1 - 36 to 1 - 38
UVT	1 - 39 to 1 - 40
Auxiliary/alarm	1 - 32 to 1 - 35
Padlock bracket	1 - 45
Link bars and terminals	1 - 44 to 1 - 45
Enclosures	Section 2
Busbar chassis	2 - 52

Technical data	Page
Technical data	Section 3
Tripping characteristics	3 - 6, 3 - 8
Dimensions	3 - 24

Miniature circuit breakers

Din-T6 Easy fit MCB's & RCCB

1 pole

Tool-free connection

- Standard AS/NZS 60898
- Approval No. NSW24022
- Current range 6-63 Amps 1 and 3 pole
- C curve
- Cable clamping technology
- Line side - plug in or screw connection
- Load side - screw-less cable connection up to 20 A
- Sealable and lockable handle
- Padlock-able in OFF position

C Curve (5-10 In) Single Pole (18 mm)

In (A)	Cat. No.
6	[i] DTCB-E6-1-06-C
10	DTCB-E6-1-10-C
16	DTCB-E6-1-16-C
20	DTCB-E6-1-20-C
25	DTCB-E6-1-25-C
32	DTCB-E6-1-32-C
40	[i] DTCB-E6-1-40-C
50	[i] DTCB-E6-1-50-C
63	DTCB-E6-1-63-C

C Curve (5-10 In) Single Pole (36 mm)

In (A)	Cat. No.
2	[i] DTCB-E6-3-06-C
4	[i] DTCB-E6-3-10-C
6	[i] DTCB-E6-3-16-C
10	[i] DTCB-E6-3-20-C
16	[i] DTCB-E6-3-25-C
20	[i] DTCB-E6-3-32-C
25	[i] DTCB-E6-3-40-C
32	[i] DTCB-E6-3-50-C
40	[i] DTCB-E6-3-63-C

- Standard AS/NZS 61008
- Current range 40 - 63 Amps
- 2 pole and 4 pole configurations
- 30 mA sensitivity
- Cable clamping technology
- Line side - screw terminal
- Load side - screw terminals or plug in busbar comb

2 pole RCCB

In (A)	Trip sens	Amp rating	Voltage	Cat. No.
2P (1P + N)	30 mA	40 A	240 V	DSRCD-E-2-40-30
		63 A	240 V	[i] DSRCD-E-2-63-30
4P (3P + N)	30 mA	40 A	240/ 415 V	[i] DSRCD-E-4-40-30
		63 A	240/ 415 V	[i] DSRCD-E-4-63-30

Notes: [i] Available on indent only.

Miniature circuit breakers

Din-Safe safety switches (RCCB)

- Standard AS/NZS 61008
- Approval No. N17482
- Accepts Din-T aux/alm switches
- Current ratings 40, 63, 80, 100 and 125 Amps
- For use in single phase or 3 phase protection
- Handle sealable and padlockable
- DIN rail mount

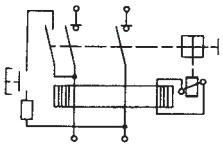
High Immunity Type

No. poles	Trip Sens.	Amp Rating	Voltage	Cat No.
2P (1P+N)	30 mA	40 A	240 V	DSRCD-2-40-30 [1]
		63 A	240 V	DSRCD-2-63-30 [1]
		80 A	240 V	DSRCD-2-80-30 [1]
	100 mA	40 A	240 V	[i] DSRCD-2-40-100 [1]
		80 A	240 V	DSRCD-2-80-100 [1]
	300 mA	40 A	240 V	DSRCD-2-40-300 [1]
		80 A	240 V	[i] DSRCD-2-80-300 [1]
4P (3P+N)	30 mA	40 A	415 V	DSRCD-4-40-30 [1]
		63 A	415 V	DSRCD-4-63-30 [1]
		80 A	415 V	[i] DSRCD-4-80-30 [1]
		100 A	415 V	DSRCD-4-100-30 [1]
	100 mA	40 A	415 V	DSRCD-4-40-100 [1]
		63 A	415 V	DSRCD-4-63-100 [1]
		80 A	415 V	DSRCD-4-80-100 [1]
		100 A	415 V	DSRCD-4-100-100
	300 mA	40 A	415 V	DSRCD-4-40-300
		100 A	415 V	DSRCD-4-100-300
	500 mA	100 A	415 V	[i] DSRCD-4-100-500
High Immunity type (type AI)				
2P (1P+N)	30 mA	40 A	240 V	DSRCD-2-40-30AI
		63 A	240 V	[i] DSRCD-2-63-30AI
4P (3P+N)	30 mA	40 A	415 V	DSRCD-4-40-30AI
		63 A	415 V	DSRCD-4-63-30AI
Selective type (type S)				
2P (1P+N)	100 mA	63 A	240 V	DSRCD-2-63-100S
	300 mA	63 A	240 V	DSRCD-2-63-300S
4P (3P+N)	100 mA	63 A	415 V	[i] DSRCD-4-63-100S
		100 A	415 V	DSRCD-4-100-100S
	300 mA	63 A	415 V	DSRCD-4-63-300S
		100 A	415 V	DSRCD-4-100-300S
Type B				
4P (3P+N)	30 mA	63 A	415 V	DSRCD-4-63-30B
	100 mA	63 A	415 V	DSRCD-4-63-100B
	300 mA	100 A	415 V	DSRCD-4-100-300B
	500 mA	125 A	415 V	DSRCD-4-125-500B

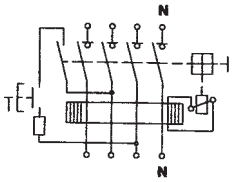
Characteristics

- Type AC tripping characteristics: IEC 61008. [2]
- IΔn: 30 mA, 100 mA, 300 mA and 500 mA.
- High immunity to transient currents.
- Box terminal – capacity 25 mm² to 35 mm².
- Captive terminal screws with cross and slot head.
- Profile as per Din-T MCB.

Connection diagram 2 pole



Connection diagram 4 pole



Note: The two centre poles must always be connected to the circuit for the test button function.

Test button

The test button allows the possibility of testing the functioning of the earth-leakage detection system and tripping mechanism of the safety switch.

It is recommended that the test button be operated once a month to check the correct functioning of the safety switch.

DSRCD 3P + N

Accessories	Page
Auxiliary/Alarm	1 - 32
Padlock bracket	1 - 45
Link bars and terminals	1 - 44 to 1 - 45
Enclosures	Section 2

Technical data	Page
Tripping characteristics	Section 3
Dimensions	3 - 47
Tech data	Section 3

Notes: [1] Insert 'A' at the end of catalouge number for type A RCD e.g. DSRCD-2-40-30 A
[2] Some type "A" RCD's are stocked. Refer NHP if required.
30 mA tripping characteristics 0.5 x IΔn = no tripping, 1 x IΔn = T ≤300 mS, 2 x IΔn = T ≤150 mS, 5 x IΔn = T ≤40 mS,
[i] Available on indent only.

Miniature circuit breakers

Din-Safe single pole width residual current circuit breaker (RCBO) 6 kA

Same dimensions as a standard MCB

- Standards AS/NZS 61009
- Approval No. NSW 24576
- One module wide (18 mm)
- Short circuit, overcurrent and earth leakage protection
- Short circuit protection, 6 kA
- Sensitivity 30 mA
- Dual DIN clip
- DIN rail mount
- Suits NC or CD chassis
- Type 'AC' residual current device
- 240 V AC

Trip sensitivity	Amp rating (A)	Cat. No. [2]
30 mA	6	**DSRCBS0630C**
	10	**DSRCBS1030C**
	16	**DSRCBS1630C**
	20	**DSRCBS2030C**
	25	**DSRCBS2530C**
	32	**DSRCBS3230C**

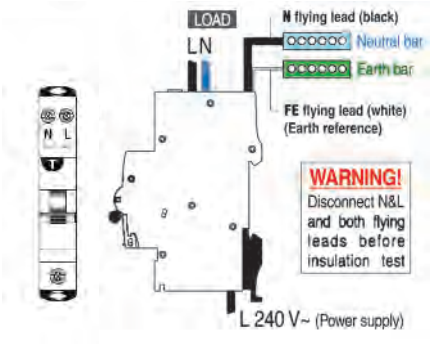
Accessories

Description	Cat. No.
Auxiliary, change-over contact 5 A [1]	**DSRCBSAX**
Auxiliary/Alarm - selectable changeover contact	**DSRCBSAXAL**

Application

The Din-Safe single pole width residual current circuit breaker will fit the standard Din-T chassis for use in NHP panelboards. The design makes it possible to provide an MCB complete with earth leakage protection in an 18 mm wide module, which allows a greater number of devices to be fitted into a distribution board.

Connection diagram

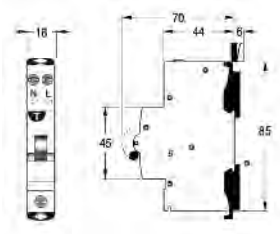


Operation

This unit combines the overload and short circuit protection of an MCB with earth leakage protection of an RCD. The unit occupies one, sub- circuit (one pole) of the distribution board and provides single phase protection against overload, short circuit and earth leakage current.

- The MCB element provides thermal and magnetic tripping protection which is rated to 6 kA prospective fault current.
- The RCD element of the device provides core-balance detection of the difference between the active and neutral currents and amplification to provide high sensitivity. The rated residual operating current (IΔn) is 30 mA.
- The white earth reference cable, in case of loss of supply neutral, ensures the device will continue to provide earth leakage protection and will operate normally upon detection of an earth leakage current.

Dimensions (mm)



Accessories	Page
Padlock bracket	1 - 43
Link bars and terminals	1 - 42 to 1 - 43
Enclosures	Section 2

Technical data	Page
Tripping characteristics	Section 3
Technical data / wiring	Section 3

Notes: [1] Neutral not switched.
B curve available.
[2] Add A to end of Part No. for 'type A' e.g. DSRCBS2030CA
30 mA tripping characteristics: 0.5 x IΔn = no tripping, 1 x IΔn = T ≤300 mS
2 x IΔn = T ≤150 mS, 5 x IΔn = T ≤40 mS
Nuisance tripping may be experienced in VFD and motor starting applications refer NHP.

Miniature circuit breakers

Din-Safe single pole width residual current circuit breaker (RCBO) 10 kA

- Standards AS/NZS 61009
- Approval N17482
- One module wide (18 mm)
- Short circuit, overcurrent and earth leakage protection
- Short circuit protection, 10 kA
- Sensitivity 30 mA, 10 mA
- DIN rail mount
- Suits NC or CD chassis
- Type 'A' residual current device
- 240 V AC

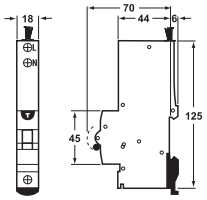
Trip sensitivity	Amp rating (A)	Cat. No [1][2]
10 mA	6	i DSRCBH0610A
	10	DSRCBH1010A
	16	DSRCBH1610A
	20	DSRCBH2010A
	25	i DSRCBH2510A
	32	i DSRCBH3210A
	40	i DSRCBH4010A
30 mA	6	DSRCBH0630A
	10	DSRCBH1030A
	16	DSRCBH1630A
	20	DSRCBH2030A
	25	DSRCBH2530A
	32	DSRCBH3230A
	40	DSRCBH4030A

Operation

This unit combines the overload and short circuit protection of an MCB with earth leakage protection of an RCD. The unit occupies one, sub- circuit (one pole) of the distribution board and provides single phase protection against overload, short circuit and earth leakage current.

- The MCB element provides thermal and magnetic tripping protection which is rated to 6 kA prospective fault current.
- The RCD element of the device provides core-balance detection of the difference between the active and neutral currents and amplification to provide high sensitivity. The rated residual operating current (IΔn) is 30 mA.
- The white earth reference cable, in case of loss of supply neutral, ensures the device will continue to provide earth leakage protection and will operate normally upon detection of an earth leakage current.

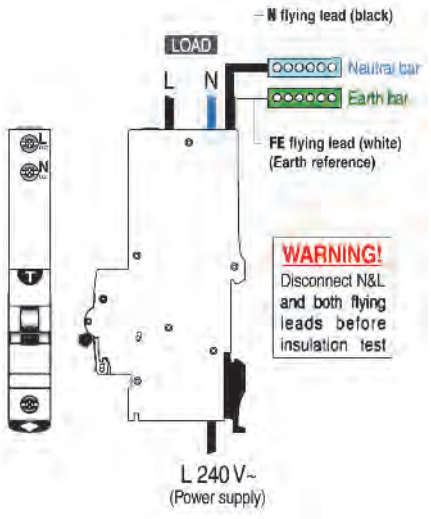
Dimensions (mm)



Application

The Din-Safe single pole width residual current circuit breaker will fit the standard Din-T chassis for use in NHP panelboards. The design makes it possible to provide an MCB complete with earth leakage protection in an 18 mm wide module, which allows a greater number of devices to be fitted into a distribution board.

Connection diagram



Accessories	Page
Padlock bracket	1 - 45
Link bars and terminals	1 - 44 to 1 - 45
Enclosures	Section 2

Technical data	Page
Tripping characteristics	Section 3
Technical data / wiring	Section 3

Notes: [1] Neutral not switched.
[2] Will not accept Din-T side mounting accessories.
30 mA tripping characteristics: 0.5 x IΔn = no tripping, 1 x IΔn = T ≤300 mS
2 x IΔn = T ≤150 mS, 5 x IΔn = T ≤40 mS
Nuisance tripping may be experienced in VFD and motor starting applications refer NHP.
i Available on indent only.

Miniature circuit breakers
Din-Safe MCBs (RCBO)

- Standard AS/NZS 61009
- Approval N17482
- 10 kA
- Short circuit, overcurrent and earth leakage protection
- Handle sealable and padlockable
- DIN Rail mounting
- 110/240 V AC
- 2 pole (1 P+N)

DIN-Safe MCB with neutral pigtail suits standard 3 phase chassis

DIN-Safe MCB standard terminal configuration

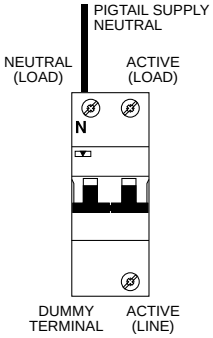
Din-Safe MCB

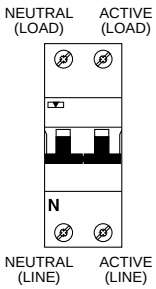
Trip sensitivity	Amp rating	RCD type	Cat. No [2] [3]
10 mA	6	AC	DSRCB0610A
	10	AC	DSRCB1010A
	16	AC	DSRCB1610A
	20	AC	DSRCB2010A
30 mA	6	AC	DSRCB0630
	10	AC	DSRCB1030
	16	AC	DSRCB1630
	20	AC	DSRCB2030
	25	AC	DSRCB2530
	32	AC	DSRCB3230
	40	AC	DSRCB4030
100 mA	10	AC	DSRCB10100
	16	AC	DSRCB16100
	20	AC	DSRCB20100
30 mA	6	A	DSRCB0630A
	10	A	DSRCB1030A
	16	A	DSRCB1630A
	20	A	DSRCB2030A
	25	A	DSRCB2530A
	32	A	DSRCB3230A
	40	A	DSRCB4030A

Din-Safe MCB with pigtail

Trip sensitivity	Amp rating	RCD type	Cat. No [1] [4]
30 mA	6	AC	DSRCB0630P
	10	AC	DSRCB1030P
	16	AC	DSRCB1630P
	20	AC	DSRCB2030P
	25	AC	DSRCB2530P
	32	AC	DSRCB3230P
	40	AC	DSRCB4030P

Terminal configuration





Application

Din-Safe MCB is a combined MCB/RCD providing thermal overload, short circuit and earth leakage protection in the one integral unit.
Din-Safe MCBs are suitable for use in residential, commercial and light industrial applications.

Accessories	Page
Shunt trip	1 - 36 to 38
Auxiliary/Alarm	1 - 32 to 35
Padlock bracket	1 - 45
Link bars and terminals	1 - 44, 1 - 45
Enclosures	Section 2

Technical data	Page
Tripping characteristics	Section 3
Dimensions	3 - 47
Technical data	Section 3

Notes: [1] Unprotected neutral, not switched.
[2] Unprotected neutral, switched.
[3] Fits Din-T chassis (special configuration) refer NHP.
[4] Suit standard NC or CD chassis.
Terminal capacity 25 mm²
[i] Available on indent only.

MCB LOCKING SOLUTIONS - LockDIN ™

The miniature circuit breaker locking solution for Tersaki DIN-T circuit breakers

PD-LOCKDIN-MCB

The first comprehensive system for safe and secure locking of DIN miniature circuit breakers (MCBs)

- Designed specifically for the mining industry
- Easy to install and retrofit to existing Concept•Premier and Concept•TOUGH panelboards
- Can be used with Terasaki RCBOs
- Accepts 2.5 - 6.5 mm padlocks, hasps and scissor arrangements
- Can only be used with the NHP Terasaki DIN-T range
- Can be used with 1, 2 and 3 pole Terasaki MCBs

TERASAKI
Innovators in Protection Technology

Miniature circuit breakers

Din-Safe-M add-on earth leakage modules

The Din-Safe-M package contains all the necessary parts to combine the earth leakage module and the Din-T MCB to form a combination MCB/RCD.

All parts required to complete this unit are supplied – including protection caps, clips and assembly instruction sheet.

Din-Safe-M module and MCB combination offer the following functions:

- Protection against earth leakage faults thus protecting against:
  - indirect contact
  - direct contact
  - fire
- Trip Sensitivities (I△n):
  - 30 mA
  - 100 mA
  - 300 mA
- Short circuit protection.
- Overload protection.

DSRCM

Operation

The combined Din-T MCB/Din-Safe-M earth leakage module has two operating toggles which indicate the reason for the trip:

– When an overload or short circuit occurs the Din-T MCB will operate. In this case the Din-Safe-M toggle will remain in the ON position.

– If an earth leakage occurs both toggles will move to the OFF position. In order to reset the MCB the Din-Safe-M unit must be reset first.

– In both instances – if the cause of the trip operation has not been rectified, a trip operation will occur as soon as the MCB is turned to the ON position. The trip free mechanism of the MCB ensures that a successful trip operation takes place even when the toggle is held in the ON position.

DSRCM + DTCB10 MCB

Test button

The built-in test facility simulates an earth fault ensuring correct operation of MCB + RCD components.

Testing is recommended monthly.

Fitting of Din-T auxiliary and alarm switches or Din-T shunt are not affected and will function as normal.

Miniature circuit breakers

Din-Safe-M add-on earth leakage modules

- Standard AS/NZS 3190
- Approval No. N11974
- Offers protection against overcurrent, earth leakage and short circuit faults when added to Din-T MCB
- Test button
- Indication of trip position
- Current ratings 32 and 63 amps

DSRCM

Din-Safe-M modules to suit Din-T6, 10 and 15 [5])

Sensitivity (mA)	MCB rating (A) [3])	No. of Poles [1])	Width Mods [2])	Dim. [4])	Cat. No.
30	32	1 P+N	2	A	DSRCM-32-30-1PN
		3 P+N	2	B	DSRCM-32-30-3PN
100	32	1 P+N	2	A	DSRCM-32-100-1PN
		3 P+N	2	B	DSRCM-32-100-3PN
300	32	1 P+N	2	A	DSRCM-32-300-1PN
		3 P+N	2	B	DSRCM-32-300-3PN
30	63	1 P+N	2	A	DSRCM-63-30-1PN
		3 P+N	3	C	DSRCM-63-30-3PN
		3 P	3	D	DSRCM-63-30-3P
100	63	1 P+N	2	A	DSRCM-63-100-1PN
		3 P+N	3	C	DSRCM-63-100-3PN
		3 P	3	D	DSRCM-63-100-3P
300	63	1 P+N	2	A	DSRCM-63-300-1PN
		3 P+N	3	C	DSRCM-63-300-3PN
		3 P	3	D	[i] DSRCM-63-300-3P

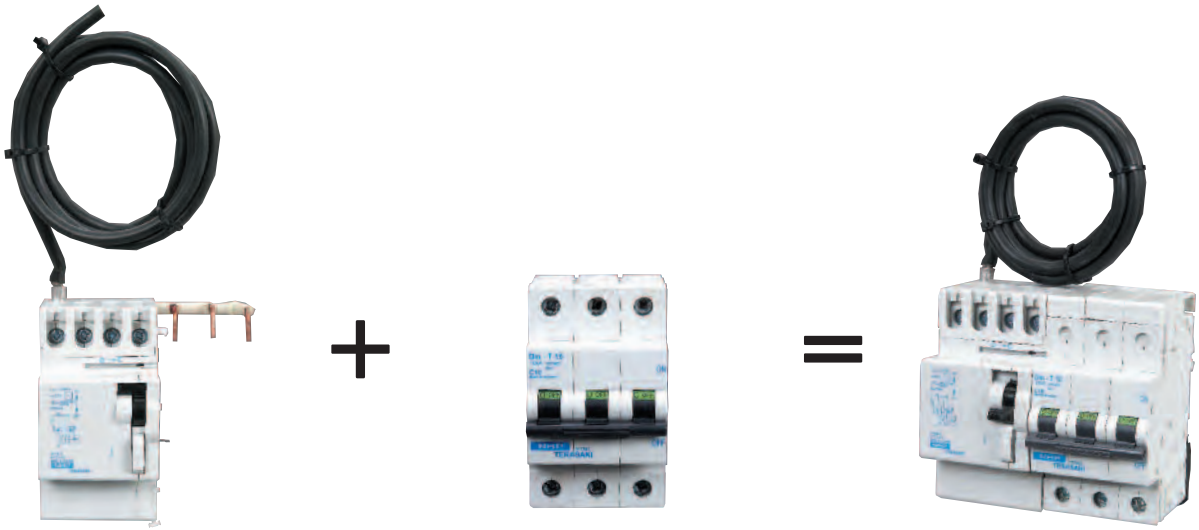
Technical data

Model	Voltage (V)
1 P + N	240/415 V AC
3 P + N	415 V AC
3 P	415 V AC

Terminal capacity

In (A)	(mm^2)
up to 32	16
63	25

Technical data	Page
Tripping characteristics	Section 3
Technical data	Section 3
Dimensions	3 - 47



DSRCM + DTCB10 = After fitting

Notes:
[1]) 1 P+N and 3 P+N type supply neutral is connected by 'pigtail' cable.
[2]) Dimensions of Din-Safe-M unit only; add MCB dimensions for total installed width.
[3]) "MCB rating" refers to the max. MCB size the module can be fitted to.
[4]) A, B, C, D refers to dimensional diagrams refer page 3 - 47.
[5]) Not suitable for Din-T 10H.
[i] Available on indent only.

Miniature circuit breakers

Din-TMS main switches 63 – 100 amps

- AS/NZS 60947-3
- Double break contacts
- Dual function terminals – busbar and cable
- Padlockable handle
- Handle sealable: On and Off position
- Terminal protection degree IP 20
- Used as main switch (isolator) in loadcentres and distribution boards
- Suits NC or CD type chassis

Main switch range 63 & 80 amp, side mounts direct to CD Din-T chassis. 63 - 100 A to NC Din-T chassis. All accept side mount auxiliary switch

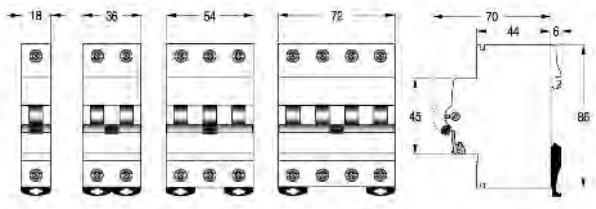
DINTMS 3 pole

Rating In (A)	No. of Poles	No. of Modules	Contacts	Cat. No. [1])
63	1	1		DINTMS631
	2	2		DINTMS632
	3	3		DINTMS633
80	1	1		DINTMS801
	2	2		DINTMS802
	3	3		DINTMS803
100	1	1		DINTMS1001
	2	2		DINTMS1002
	3	3		DINTMS1003

DINTMS 1 pole

Technical data

Nominal rated current	63-80-100 A
Usable as mains disconnect switch	yes
Nominal breaking capacity at 415 V, cos ø = 0.95	3 x I_n
Nominal breaking capacity at 415 V, cos ø = 0.65	3 x I_n
Nominal voltage single pole devices	240 / 415 V
Nominal voltage multipole devices	240 / 415 V
Maximum allowed current during less than 1 s.	2 kA
Mechanical service life (complete on-off-cycle)	>20000
Electrical service life, cos ø = 0.95, U_n and I_n	>1500
Short-circuit resistance with upfront fuses	16 kA (nominal)
Short-circuit resistance without upfront fuses	7 kA (peak)
Protection degree	IP 20
Screws	Pozidrive 2
Terminal capacity: min.	1 x 6 mm²
max.	1 x 50 mm²
Making capacity 1.05 x 4, cos ø0.65	3 x Ie



Accessories	Page
Auxiliary contacts	1 - 32 to 35
Padlock attachment	1 - 45

Notes: [1]) DINTMS Main switches will accept side mounting auxiliary switches only. Front mounting and terminal devices can also be fitted.

Din-T MCB accessories

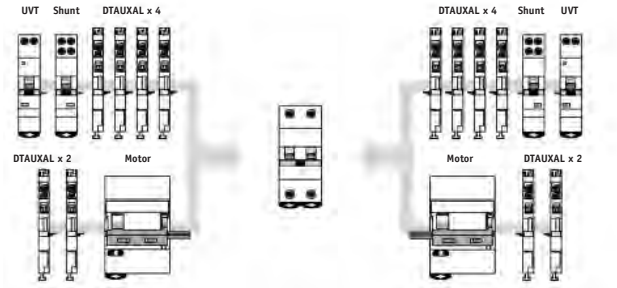
Mounting of add-on devices on MCBs, RCCBs, RCBOs and isolating switches

Type	Description	Din-T6	Din-T10	Din-T10H	Din-T15	Din-T DC	DSRCD all types	DSRCM	DINTMS	Change-over switch
DTAUXAL	Signal or auxiliary contact	L - R	L - R	–	L - R	L - R	R	R	L - R	L - R
DTAUXALG	Signal or auxiliary contact, gold contact	L - R	L - R	–	L - R	L - R	R	R	L - R	L - R
DINT10HHS	Signal or auxiliary + auxiliary contact	–	–	R	–	–	–	–	–	R
DTPBS	Panelboard switch	L - R	L - R	–	L - R	L - R	R	–	–	–
DINTSHT	Shunt trip	–	–	L	–	–	–	–	–	–
DTSHT	Shunt trip	L - R	L - R	–	L - R	L - R	R	R	–	–
DTUVT	Undervoltage release	L - R	L - R	–	L - R	L - R	R	R	–	–
DTMD	Motor operator	L - R	L - R	–	L - R	L - R	R	R	–	–

L = Left mounting **R** = Right mounting

Miniature circuit breakers [1])

Din-T 6, 10, 15, DC, E6
(Not for Din-T10H)

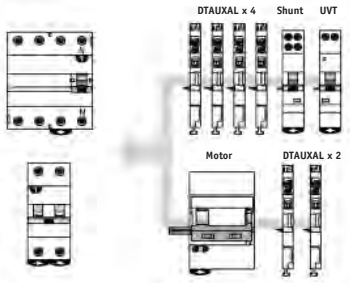


Residual current circuit breakers (RCCB)

Din-Safe safety switches (DSRCD)

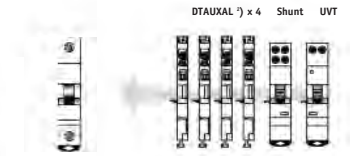
Residual current circuit breakers (RCBO) with overcurrent protection

Din-Safe (DSRCB)



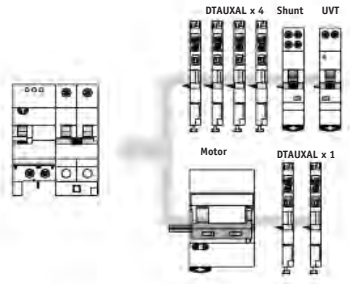
Residual current circuit breakers (RCBO) with overcurrent protection

Din-Safe (DSRCBS)



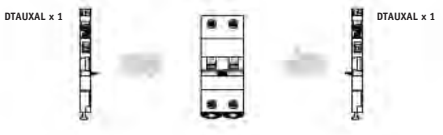
Miniature circuit breakers with add-on earth leakage module

Din-Safe-M (DSRCM)



Isolating switches

Din-T (DINTMS)



Notes: [1]) For Din-T10H accessories refer Din-T10H 1 - 20.
[2]) First auxilary must be DSRCBSAX type.
DSRCBH - single pole RCD/MCB will not accept side mounted accessories.
DINTMS - Main switches will accept side mounting auxiliary contacts only.

Miniature circuit breakers

Din-T auxiliary contacts for MCBs

DTAUXAL
alarm/auxiliary switch

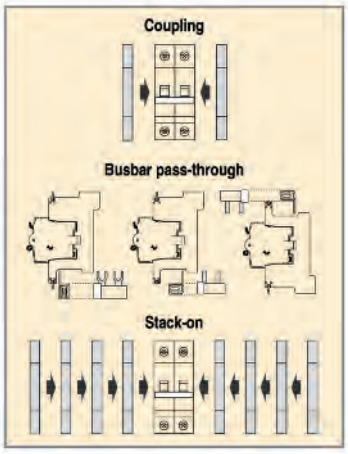
Auxiliary fitted to
an MCB

- Auxiliary contacts are supplied as a kit for fitting to MCBs
- Field fittable. Stack up to 4 units on left or right side
- Suitable for Din-T6, 10, 15 MCBs (not Din-T10H)
- Din-T auxiliary contacts indicate main contact position of the associated main device
- Includes busbar cavity for chassis mounting
- Current rating 5 A
- Version with gold contacts available for very low current < 200 mA and voltage < 24 V applications

Field convertible left or right side mounting, auxiliary or alarm functions selection all in one

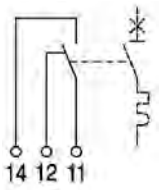
Ordering Details [1])

Contact function	Contact	No. of modules wide	Cat. No. [1])
H or S	Silver	0.5	DTAUXAL
H or S	Gold	0.5	DTAUXALG



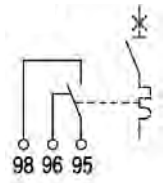
Function H (Aux)

The function H (changeover contact) is intended to provide signalisation of the real status of the associated main device (ON/OFF).



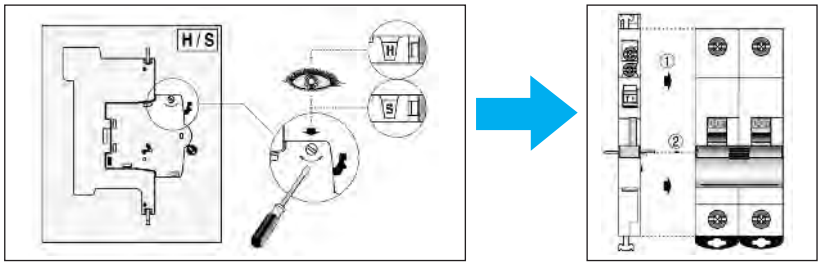
Function S (Alarm)

The function S (changeover contact) is intended to provide signalisation of the real status of the associated main device in case it releases automatically only. The contacts do not change position during manual operation.

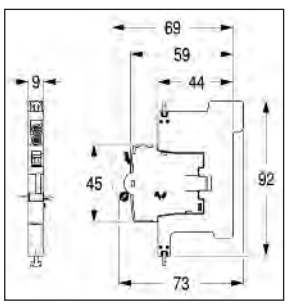


How to change the function S or H

Can be easily done before coupling it to the main device. Use a screwdriver to rotate the screw placed at the left-hand side of the auxiliary. An indication of the function appears in the window located in the upper shoulder.



Auxiliary contacts - series DTAUXAL/G



Notes: [1]) Refer 1 - 21 for auxiliaries to suit Din-T10H.
Refer 1 - 24 for auxiliaries to suit DSRCBS.
H = Auxiliary switch - indicates MCB status ON or OFF.
S = Alarm switch - indicates tripped position.

Miniature circuit breakers

Din-T auxiliary contacts for MCBs

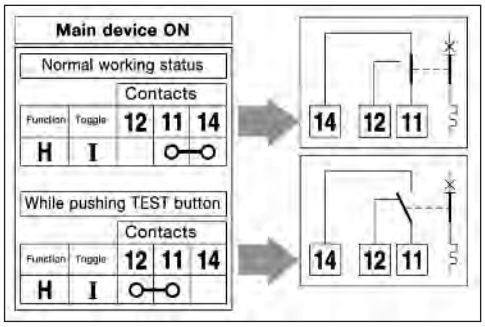
Display contacts

Contacts					(Standard) DTAUXAL Silver	(Micro current) DTAUXALG Gold
Maximum current	AC 14	240 V		A	5	5
	DC 12	60 V		A	1	1
		48 V	⎓	A	2	2
		24 V	⎓	A	4	4
Minimum application voltage		AC/DC		V	24	12
Minimum application current		AC		mA	10	2
		DC		mA	200	25
Short-circuit resistance						
Protected by fuses 6 A gG				A	1000	1000
Protected by MCB Din-T 6				A	1000	1000
Electrical endurance		(operations)		ops	10000	10000
Terminal capacity		rigid cable		mm^2	1 - 2.5	1 - 2.5
		flexible		mm^2	0.75 - 2.5	0.75 - 2.5
Terminal capacity for 2 rigid cables				mm^2	2 x 1.5	2 x 1.5
Torque				Nm	2	2

Function (H) auxiliary

When function H has been selected it is possible to know the real contact position of the associated device.

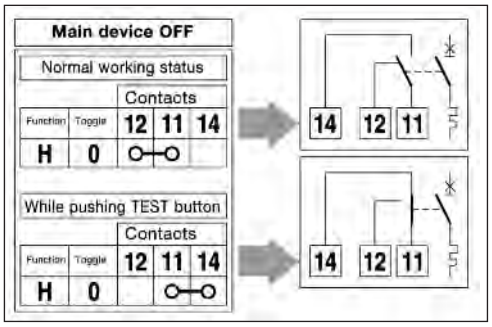
MCB ON



While both devices are in the ON position there is continuity between terminals 11-14. By pressing the display contact test button, the continuity changes over to terminals 11-12.

When released, the contacts changeover to the previous position 11-14.

MCB OFF



While both devices are in the OFF position there is continuity between terminals 11-12. By pressing the display contact test button, the continuity changes over to terminals 11-14.

When released, the contacts changeover to the previous position 11-12.

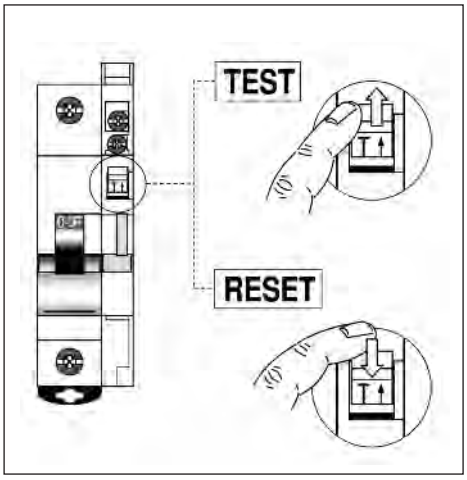
Miniature circuit breakers

Din-T auxiliary contacts for MCBs

Function S (Alarm)

The function S has been selected it as possible to know if the associated device has been tripped or not. Device will not switch when associated device is manually operated.

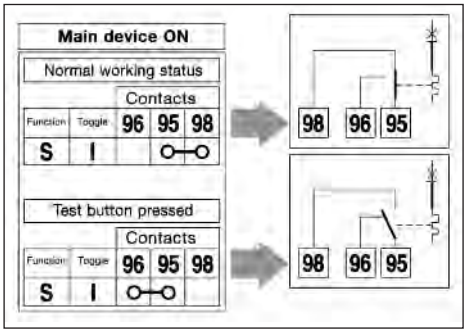
Test and reset function



Test function
Allows testing of the control circuit by moving the test button up or down, without affecting the electrical status (ON/OFF) of the main device.

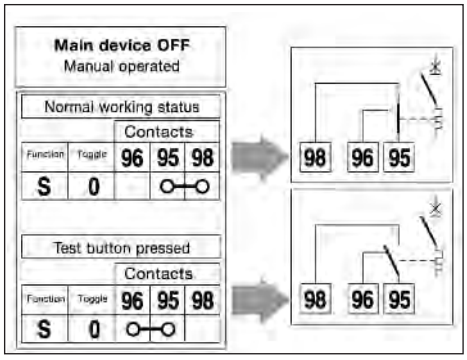
Reset function
If the main device electrically operates (due to overload, short-circuit or earth fault current), the changeover contact switches: a red line appears on the front of the test/reset button (visible indication of electrical fault in the installation). The changeover contact can be reset by pushing the test button down without changing the electrical status (ON/OFF) of the main device.

While both devices are in the ON position there is continuity between terminals 95-98. By pressing the display contact test button, the continuity changes over to terminals 95-96. When released, the contacts changeover to the previous position, 95-98.



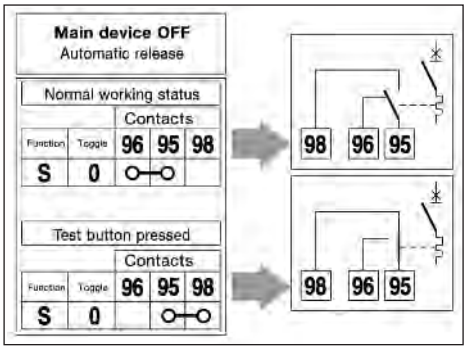
Manual operation

The contact position of the display contact test button has not changed. There is continuity between terminals 95-98. When pressing the display contact test button, the continuity switches over to terminals 95-96. When released, the contacts changeover to the previous position 95-98.



Automatic release

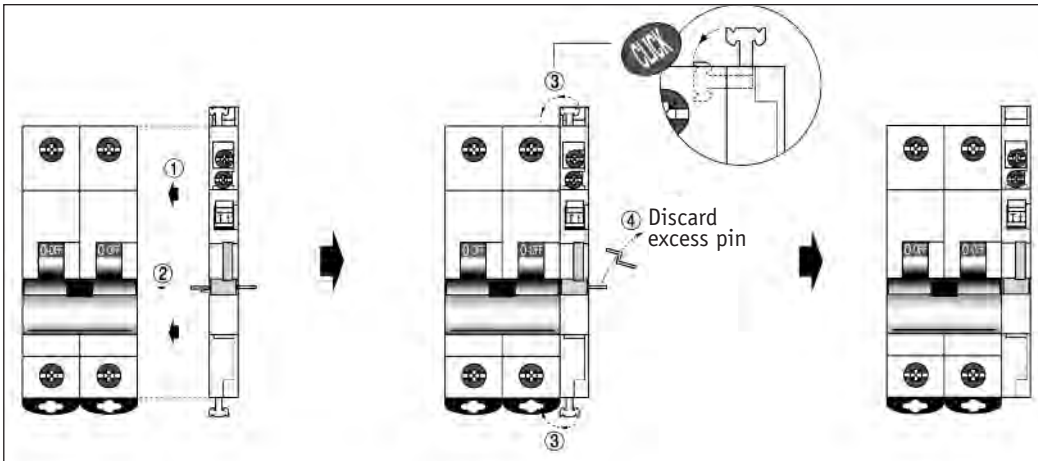
The contact position of the display contact test/reset button has changed. There is continuity between terminals 95-96. When the display contact reset button is operated the continuity switches over to terminals 95-98, and remains in that position even when the reset button is released.



Miniature circuit breakers

Din-T auxiliary contacts for MCBs

The display contact DTAUXAL/G can easily be coupled to the right or left-hand side of the main device. [1])
The display contacts are delivered as standard for coupling to the *right-hand side* of the main device.



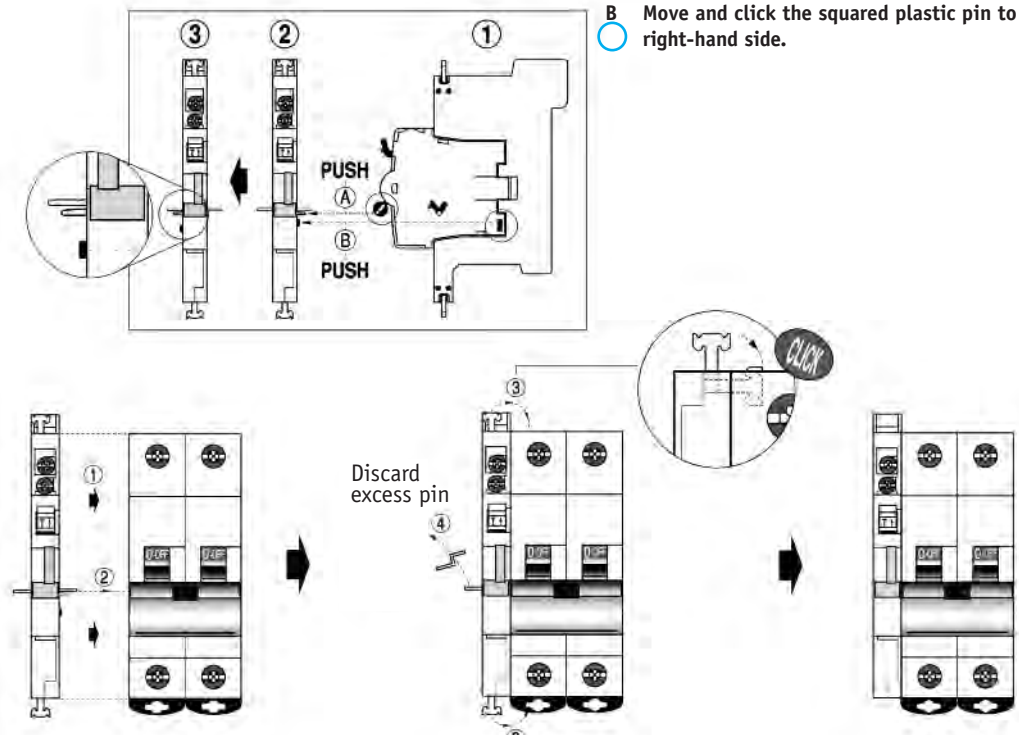
Attach the display contact to the main device, with both toggles in the OFF position.

Click the two coupling parts into position

Coupling to the *left-hand side* of any device can be easily done by following the instructions below.

A Move the metal pin on the toggle to the right-hand side.

B Move and click the squared plastic pin to right-hand side.



Attach the display contact to the main device, with both toggles in the OFF position.

Click the two coupling parts into position

Note: [1]) DTAUXAL type contact fits to right side only on 2 P RCBO and 2/4 P RCCB.

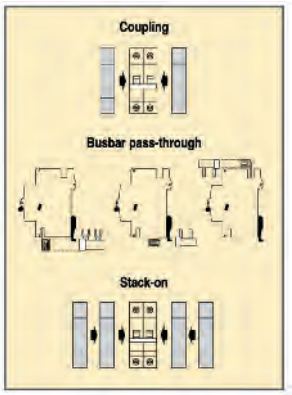
Miniature circuit breakers

Din-T shunt trip DTSHT

DTSHT
Shunt trip device

- Coupled to left or right side of MCB
- Modular width–18 mm
- Busbar cavity both ends
- Field assembly
- Continuously rated
- Terminals for remote indication
- Suits Din-T6, 10, 15, DC, E6

Voltage (V)	Coil Impedance	Cat. No. [1])
110 to 415 V AC	290 ohm	**DTSHT110415V**
110 to 125 V DC	290 ohm	
24 to 60 V AC	24 ohm	**DTSHT2460V**
24 to 48 V DC	24 ohm	



Operation

The Din-T shunt trip makes it possible to remotely switch off the MCB to which it is coupled by energising the terminals of the shunt trip.

An inbuilt contact in series with the coil prevents burn out if voltage remains – manual resetting of the MCB is required.

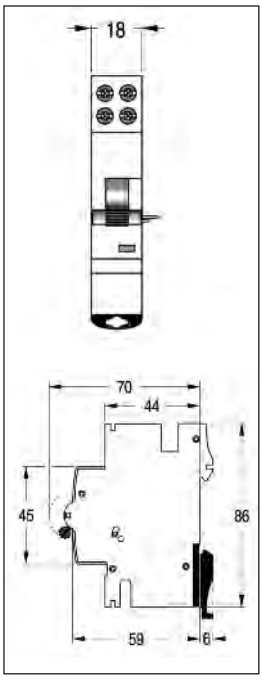
Application

- Emergency stop
- Isolation of socket outlets (see connection diagrams)

Technical data

			110 - 415 V type	24 - 60 V type
Nominal voltage AC		V	110 to 415	24 to 60
Nominal voltage DC		V	110 to 125	24 to 48
Minimum voltage AC / DC		V	0.85 U_n	0.85 U_n
Closing current	110 V	A	0.3	–
	240 V	A	0.6	–
	415 V	A	1	–
	48 V	A	–	2
	24 V	A	–	1
Operating time	110 V	ms	10	–
	240 V	ms	4	–
	415 V	ms	2	–
	48 V	ms	–	10
	24 V	ms	–	4
Coil impedance		Ω	290	24
Electrical endurance (operations)			2000	2000
Terminal capacity	rigid cable	mm^2	1 - 2.5	1 - 2.5
	flexible cable	mm^2	0.75 - 2.5	0.75 - 2.5
Terminal capacity for 2 rigid cables		mm^2	2 x 1.5	2 x 1.5
Torque		Nm	2	2

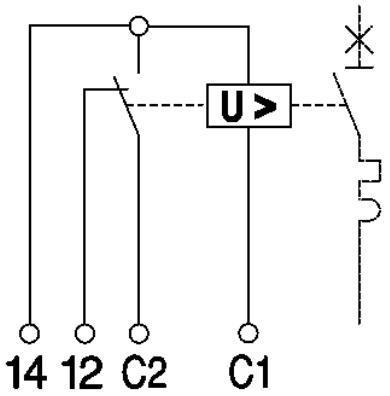
Shunt trip DTSHT



Notes: [1]) Shunt trip will fit to either right or left side of Din-T6, Din-T10 or Din-T15. (Right side only of RCCB and 2P RCBO).
Refer page 1 - 20 for shunts to suit Din-T10H.

Din-T MCB accessories Technical data
Shunt trip DTSHT

The DTSHT allows you to switch off any MCB, RCCB or RCBO by means of pushbuttons or any other automatic management processors. A built-in contact in series with the coil prevents overheating if the voltage remains. A built-in contact provides the status of the device (open/closed).



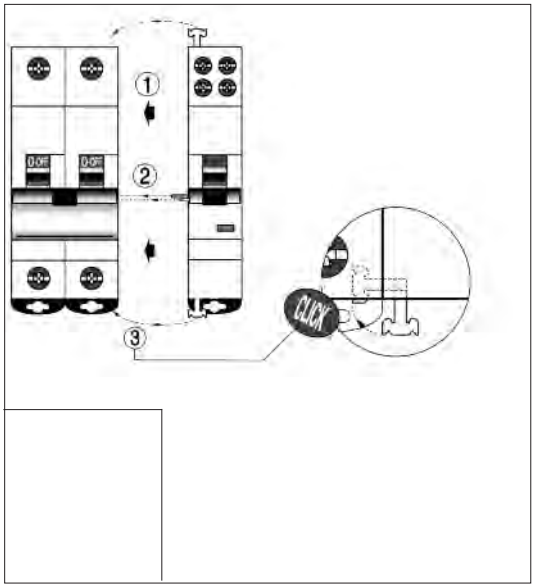
Connection

To energise shunt trip apply power to terminals C1 & C2. For optional indication connect lamps to terminals 12 & 14.

How to couple to the main device

The shunt trip can easily be coupled either to the right or left-hand side of the main device (see fig. 1 and 2). The shunt trip DTSHT is supplied as standard to be coupled on the right-hand side of the main device (see fig. 1).

Application examples



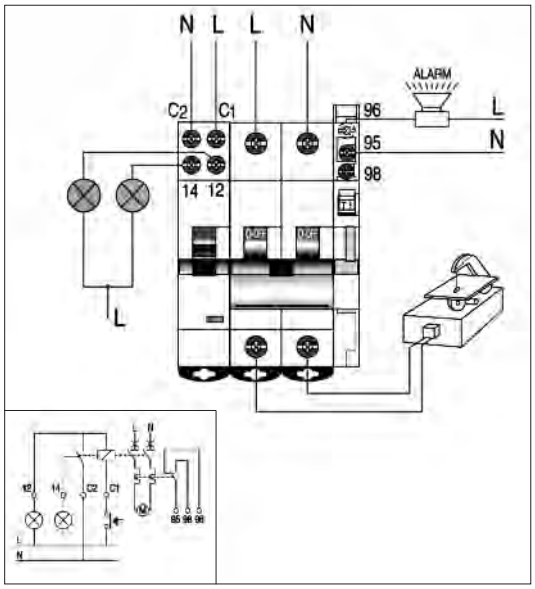
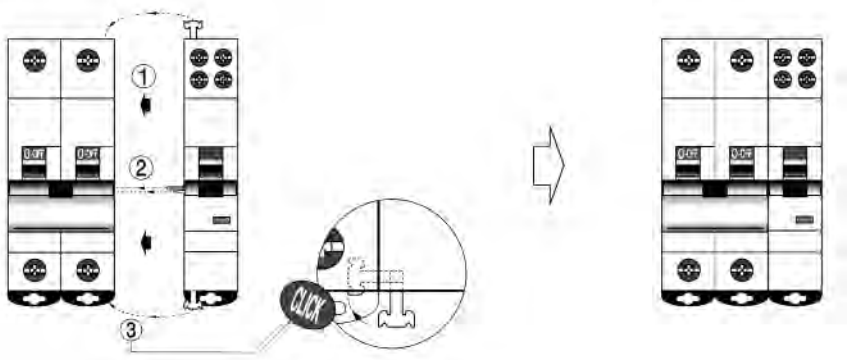


fig. 1 To couple on the right-hand side.

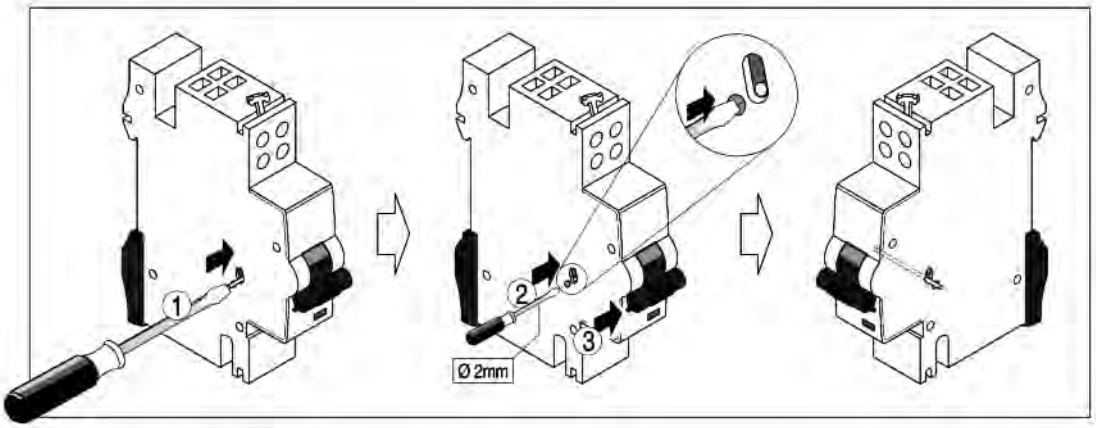


Place the shunt trip next to the main device with both toggles in the OFF position.

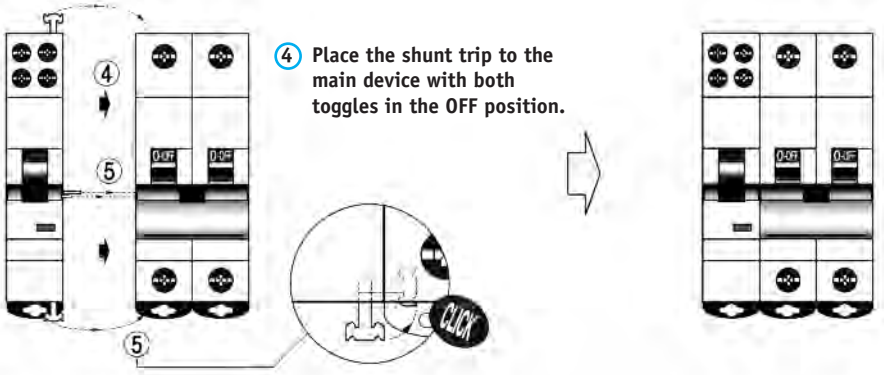
Lock the coupling clips at the top, bottom and rear into position.

Din-T MCB accessories Technical data
Shunt trip DTSHT

Fig. 2 To couple on the left-hand side: can be easily achieved by following instructions below.

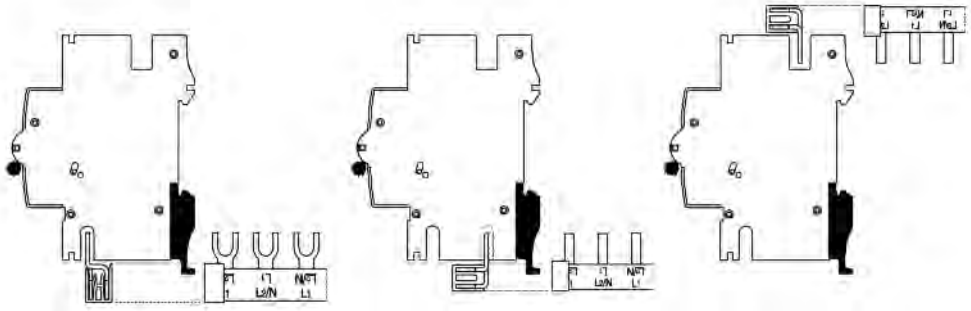


1. **Push the tripping pin to the right-hand side with a screwdriver**
2. **Insert a screwdriver Ø 2 mm into the hole and push until the pin appears on the right-hand side.**
3. **Push the toggle pin to the right.**



4. **Place the shunt trip to the main device with both toggles in the OFF position.**
5. **Lock the coupling clips at the top, bottom and rear into position.**

Busbar connection: the shunt trip DTSHT enables the use of PIN or FORK type busbars at the bottom terminals as well as the use of the PIN type busbars at the top terminals.



Miniature circuit breakers

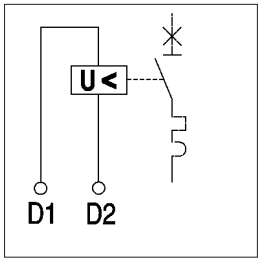
Din-T undervoltage trip

DTUVT
Undervoltage trip device

- Suitable for Din-T6, 10, 15 (Not Din-T10H)
- Operating threshold 50 % of nominal voltage
- Time delay adjustable 0 - 300 ms
- Coupled to left or right side of MCB
- One module width (18 mm)
- Busbar cavity both ends

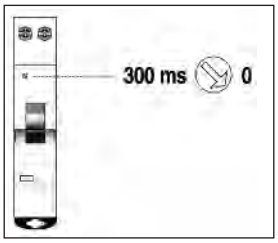
Rated voltage	Din-T6, 10, 15 Amp rating (kA)	Cat. No.
230 - 240 V AC	6, 10, 15	DTUVT240VAC
12 V AC/DC	6, 10, 15	[i] DTUVT12VDC
24 V AC/DC	6, 10, 15	DTUVT24VDC
48 V AC/DC	6, 10, 15	DTUVT48VDC

The DTUVT releases the main MCB, RCCB, RCBO or modular switch when the supply voltage drops below 0.5 x Un. Time delay adjustment up to 300 ms. The DTUVT can be switched on, once the voltage rises above 0.8 x Un 1).



Technical data [1])

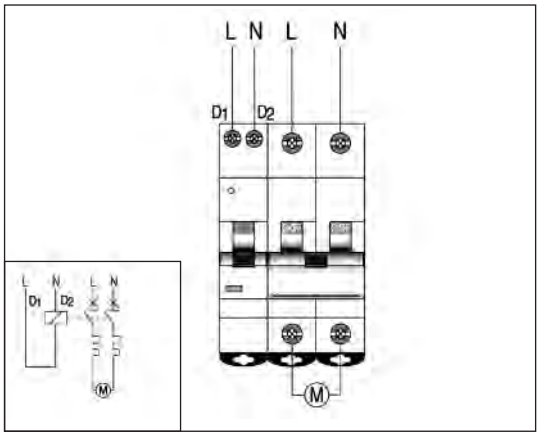
			DTUVT 12 V	DTUVT 24 V	DTUVT 48 V	DTUVT 230 V
Nominal voltage AC/DC		V	12	24	48	230
Tripping voltage		V	0.5 Un (±10%)	0.5 Un (±10%)	0.5 Un (±10%)	0.5 Un (±10%)
Tripping time		ms	0-300	0-300	0-300	0-300
Power consumption		VA	3	3	3	3
Frequency Hz		Hz	50-60	50-60	50-60	50-60
Electrical endurance		ops	2000	2000	2000	2000
Terminal capacity	rigid cable	mm²	1-2.5	1-2.5	1-2.5	1-2.5
	flexible cable	mm²	0.75-2.5	0.75-2.5	0.75-2.5	0.75-2.5
Terminal capacity for 2 rigid cables		mm²	2 x 1.5	2 x 1.5	2 x 1.5	2 x 1.5
Torque		Nm	2	2	2	2



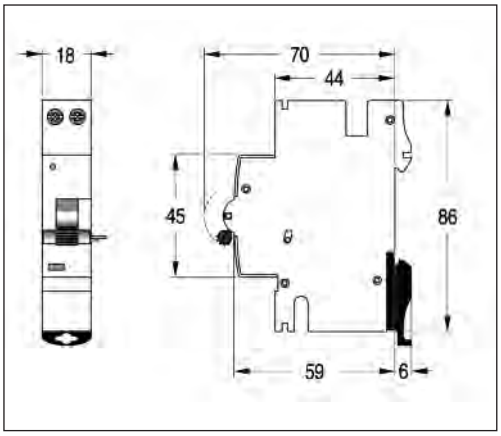
Time delay selector

In order to avoid nuisance tripping due to fluctuation of the power supply, it is possible to delay the tripping time of the UVT from 0 up to 300 ms.

Application examples



Undervoltage release DTUVT



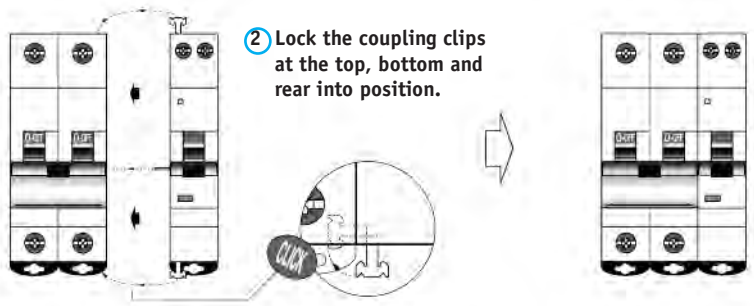
Notes: [1]) Not suitable for Din-T10H MCBs.
[i] Available on indent only.

Din-T MCB accessories Technical data
Undervoltage release DTUVT

How to couple to the main device

The undervoltage release can easily be coupled to the right or left-hand side of the main device. (see fig. 1 and fig. 2 this page and next). The undervoltage release is supplied as standard to be coupled to the right-hand side of the main device (see fig. 1).

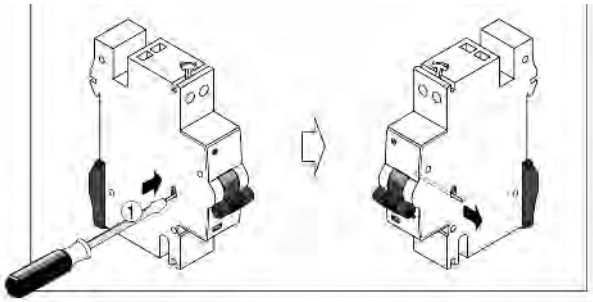
Fig. 1 To couple on the right-hand side.



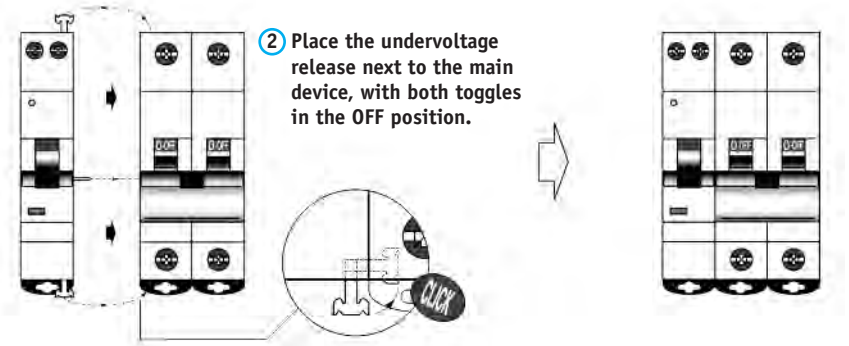
(2) Lock the coupling clips at the top, bottom and rear into position.

(1) Place the undervoltage release to the main device, with both toggles in the OFF position.

Fig. 2 To couple on the left-hand side: can be easily achieved by following instructions below.



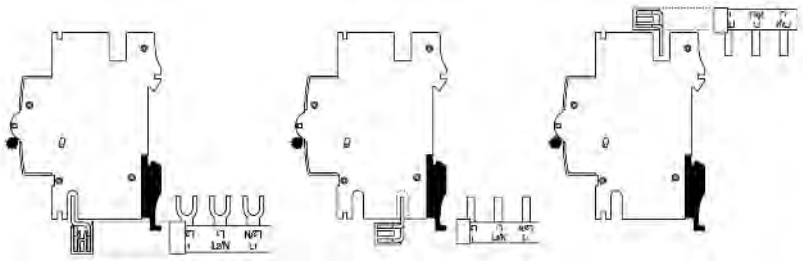
(1) With the help of a screwdriver, push both tripping pin and toggle pin to the right-hand side.



(2) Place the undervoltage release next to the main device, with both toggles in the OFF position.

(3) Lock the coupling clips at the top, bottom and rear into position.

Busbar connection: the undervoltage release allows the use of PIN or FORK type busbars at the bottom terminals as well as the use of the PIN type busbars at the top terminals.

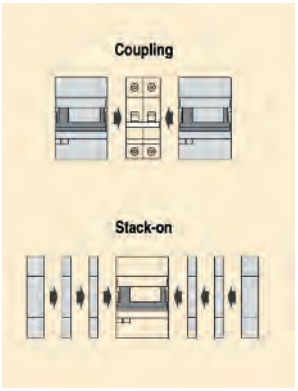


Miniature circuit breakers

Din-T motor operator DTMD

DTMD motor operator

- Suits Din 6, 10, 15, DC and E6
- Manual operation is possible
- Field fittable, left or right mounting
- Manual and electrical reset
- Motor must be reset before tripped MCB/RCD can be closed
- Impulse to switch on <50 ms
- Inbuilt auxiliary/alarm contacts
- Padlockable in OFF position
- Silent operation
- Stack on left or right side up to 4 auxiliary contacts
- Can operate as a stand-alone device switching accessories only



Rated voltage	Cat. No.
230 – 240 V AC	DTMD240VAC

Operation

The motor operator allows remote opening or closing of attached MCBs and RCDs. Control of the DTMD can be achieved by means of pushbutton, switch, relay or building management system etc. Suitable for coupling to left or right side of the following Din-T devices:

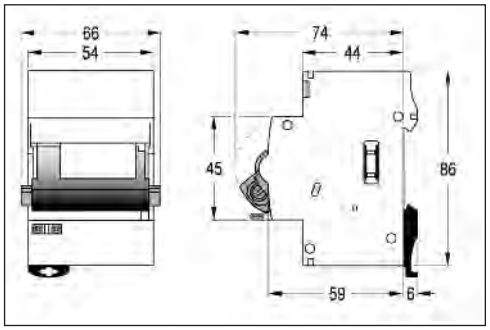
- 1, 2 and 3 pole Din-T6, 10 and 15 MCBs
- 2 and 4 pole Din-Safe safety switches (Fits to right side only on 2 P RCBO and 2/4 P RCCB)
- 2 pole Din-Safe-MCBs (combined MCB/ RCD)
- Not suitable for Din-T10H MCBs

Application

Centralised control and protection of circuits in commercial and industrial installations:

- general purpose light and power distribution
- control of heating cooling and ventilation equipment
- pumping stations and telecommunications

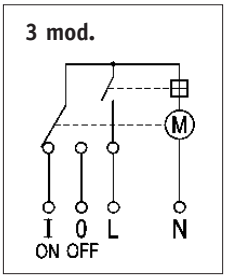
Dimensions (mm)



Technical data

Nominal voltage AC		V	230 ± 10 %
Frequency		Hz	50
Power consumption		VA	35
Closing time		ms	<500
Opening time		ms	<200
Impulse time to open		ms	>50
Impulse time to close		ms	>50
Working temperature		˚C	-25 up to +55
Electrical life		Ops	10,000
Terminal capacity	rigid cable	mm^2	1 - 2.5
	flexible cable	mm^2	0.75 - 2.5
Terminal capacity for 2	rigid cables	mm^2	2 x 1.5
Torque		Nm	2

Width	54 mm (motor only)
Protection degree of terminals	IP 20
Sealing handle prevents	
in 0 position	closing manually or electrically the breaker
in position 1	setting out of service
Automatic stop feature built-in	power consumption only when closing or opening the MCB electrically
Current I_n	0.13 A
Time between successive opening & closing	minimum 1 sec
Time of successive closing of MCB contacts	0.3 sec
Weight	(g) 380



Din-T MCB accessories Technical data
Motor operator DTMD

The motor operator has a safety reset function which prevents it closing after the main device has tripped due to a fault in the installation (earth leakage, overcurrent, short-circuit).
To switch on the main device after tripping it is necessary to first give the motor operator an open signal, then the motor can be operated normally to switch ON.

How to couple to the main device

The motor operator DTMD can be easily coupled either to the right or the left-hand side of the main device. See fig. 1 (and fig. 2 next page).

1 **Place the motor operator next to the main device with both toggles in the OFF position.**

2 **Lock the plastic and metal coupling clips at the top, bottom and rear into position.**

3 **Remove the metal pin on the right hand side of the motor operator**

4 **Push the motor operator toggle over the main device toggle (maximum 1.5 modules).**

Application examples

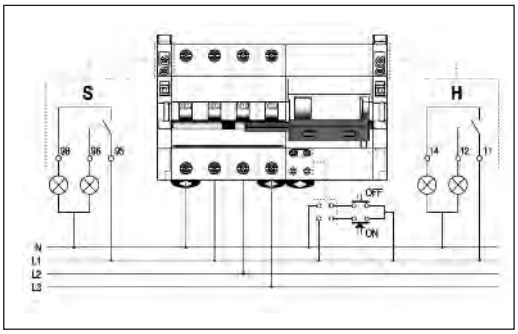
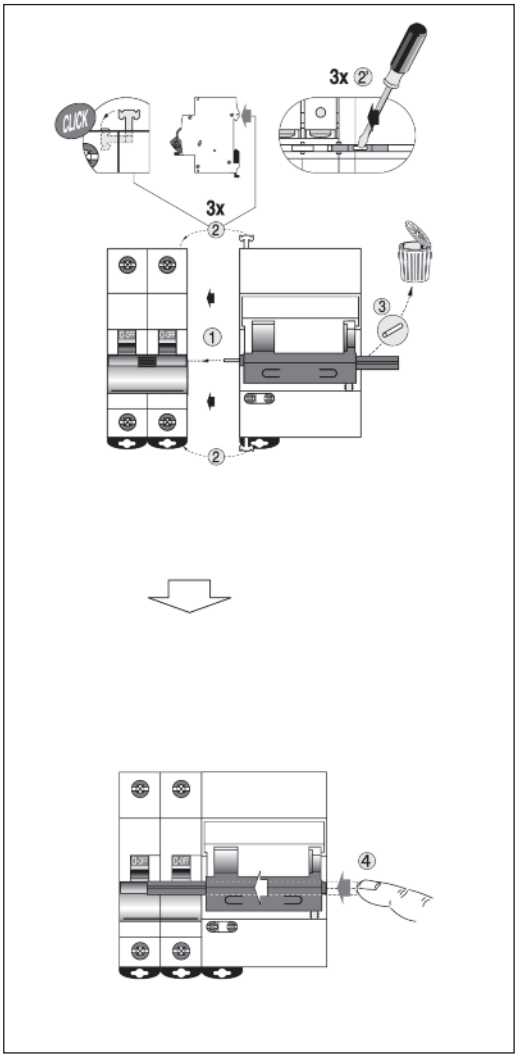


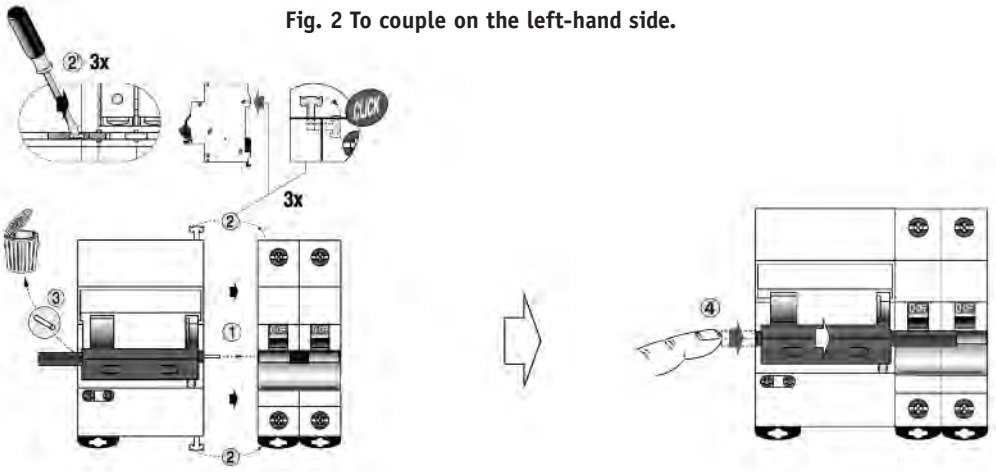
Fig. 1 To couple on the right-hand side.



Din-T MCB accessories Technical data

Motor operator DTMD

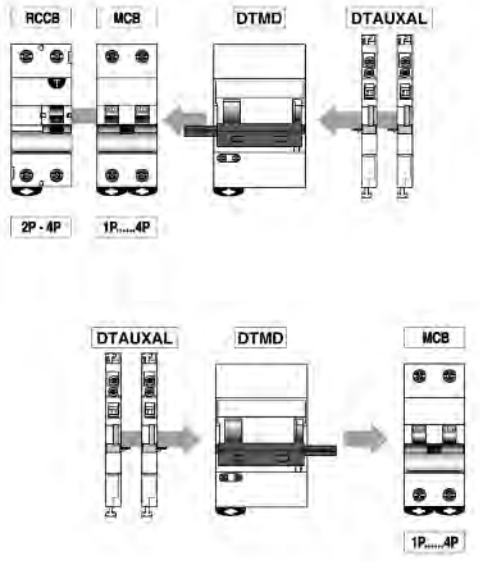
Fig. 2 To couple on the left-hand side.



1. **Place the motor operator next to the main device with both toggles in the OFF position.**
2. **Lock the plastic and metal coupling clips at the top, bottom and rear into position.**
3. **Remove the metal pin on the left hand side of the motor operator.**
4. **Push the motor operator toggle over the main device toggle (maximum 1.5 modules).**

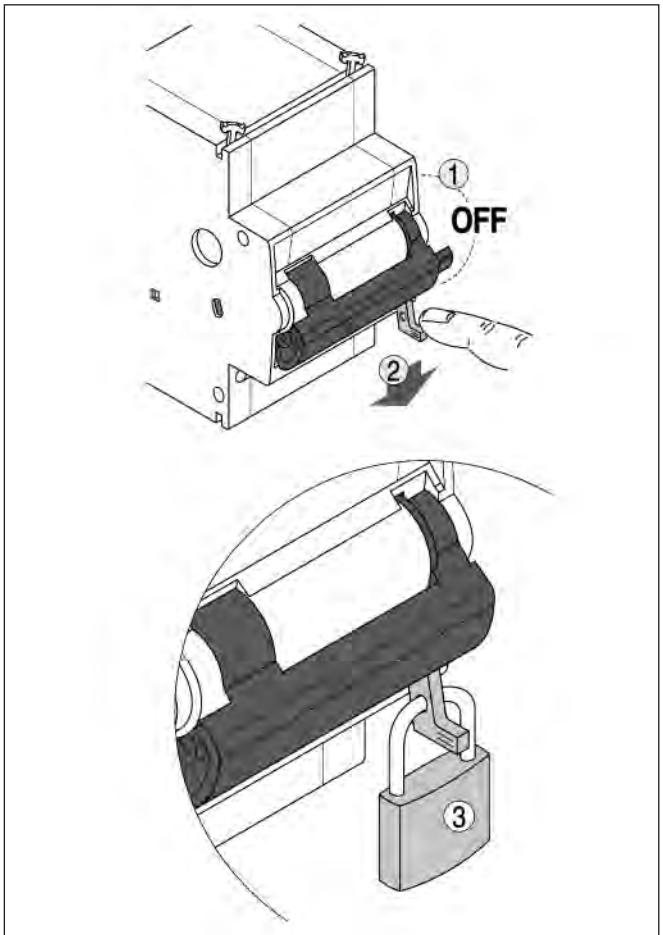
Add-on devices

Add-on devices can be added either on the left or right-hand side of the motor operator according to the following configuration.



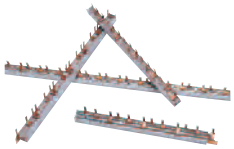
Padlocking

The motor operator can be locked in the OFF position by means of a safety-sealing handle, which can be secured with one padlock.



Miniature circuit breakers

ICL busbars – busbar combs



ICL123

No. of Poles	1 Phase [1] Cat. No.	3 Phase Cat. No.
8 Way	IBC108P	-
12 Way	IBC112P	ICL123
15 Way	IBC115P	ICL153
18 Way	IBC118P	ICL183
21 Way	IBC121P	ICL213
55 Way	IBC155P	-
57 Way	-	ICL573

Pin type busbar

No. of Poles	Cat. No.
IP+N 6 way pin type busbar comb	ICL62
IP+N 10 way pin type busbar comb	ICL102
IP+N 56 way pin type busbar comb	ICL562
3P+Aux 56 way pin type busbar comb	ICL563A [2]
3P+N 56 way pin type busbar comb	ICL564

ICL573F

Fork type busbar

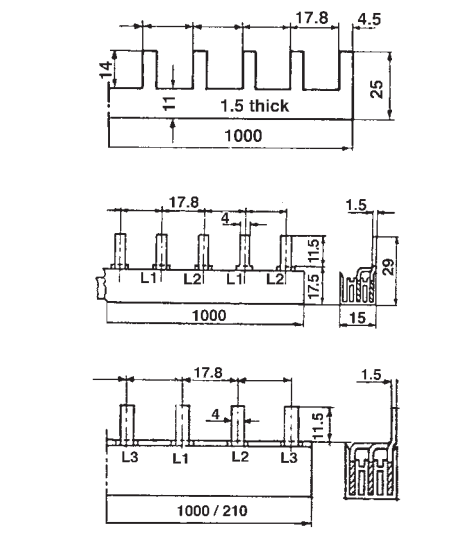
No. of Poles	Cat. No.
56 way 1 phase fork type busbar comb	ICL561F
57 way 3 phase fork type busbar comb	ICL573F

End caps

No. of Poles	Cat. No.
1P end cap to suit IBC style buscomb	IBCEC1
2P and 3P end cap to suit ICL style buscomb	ICLEC23 [3]
3P+N end cap to suit ICL style buscomb	ICLEC4 [3]

ICLTOC
T-off cap (strip of 5)
(Refer page 1 - 45)

Dimensions (mm)



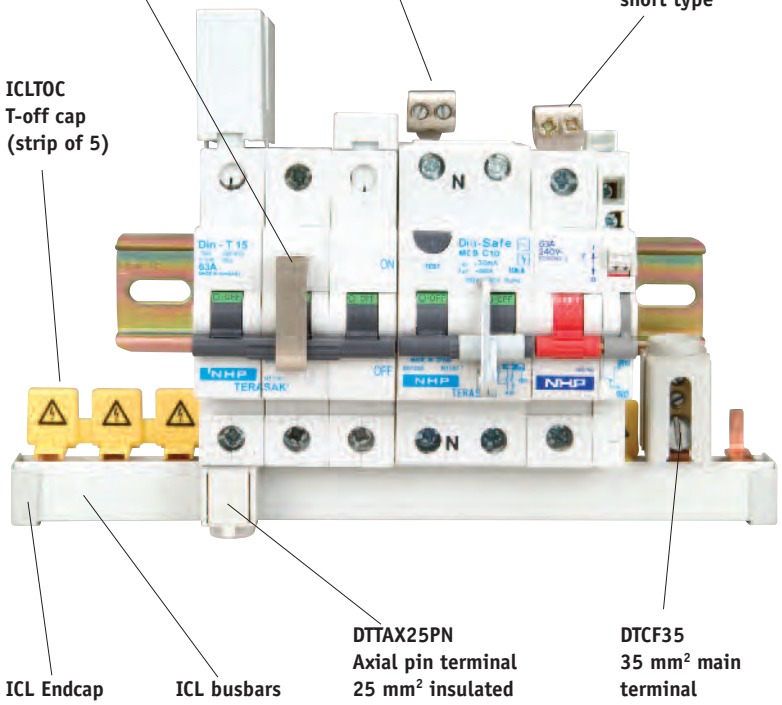
Technical data

Material of busbar	SF-CU
Insulation Material	Plastic material, high temperature resistant, self-extinguishing
Disruptive strength	DIN 53481/11.2 (36 kV/mm)
Short circuit strength	≤ 25 kA 0.1 sec (100 A fuse backup) 50 kA ⊏ 250 A gl
Climatic stability	according to DIN 40046 resp. IEC 68-2
Leakage current	IEC 112/VDE 0303/1 (600 V)
PGroup Isolation	according to VDE 0110, Group C: 380 V AC, 480 V AC
Regulations for terminal material	Din 57606/VDE 0606 Connecting material DIN
Current rating	80 A end fed 130 A center fed

Notes:
[1] IBC busbar combs come complete with endcaps
[2] 16 x 3 MCB connections and 16 x 9 mm spaces (AUXs)
[3] ICL end caps do not suit IBC busbar combs

Miniature circuit breakers

Accessories to suit Din-T MCBs




DTSP


MCB + DCLD6
captive padlock


M22IVS


DTTC 35


DTTLT35LPN


DTTLT35PN


DTTLT35SP


DTTAX16PN3


DTTAX25SP
DTTAX25PN


DTLD


DTCF35


ICLTOC
T-off cap (strip of 5)


DTPF

Accessories

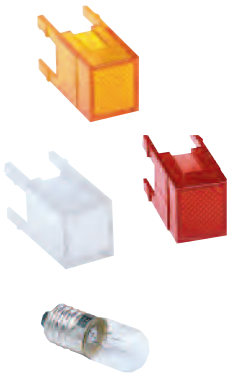
Description	Cat. No.
Lateral pin terminal 35 mm² (short type)	DTTLT35PN
Lateral pin terminal 35 mm² (long type)	DTTLT35LPN
Din-T lock dog Non-captive	DTLD
Din-T lock dog captive (1 - 4 pole) [1])	DCLD6
Din-T lock clip to suit DIN-T10H	DTLDH
Lateral spade terminal 35 mm² (short type)	DTTLT35SP
Axial spade terminal 25 mm² (insulated)	DTTAX25SP
Axial pin terminal 25 mm² (insulated)	DTTAX25PN
Axial pin terminal 50 mm² (insulated)	DTTAX50PN
35 mm² main terminals	DTCF35
185 mm² main terminal	NEB185
Pole filler	DTPF
1/2 Module spacer (9mm wide)	DTSP
End cap (strip offs) (T-off cap)	ICLTOC
Din-T terminal cover 5 mm	DTTC5
Din-T terminal cover 35 mm	DTTC35
ICL busbars	Refer pg 1 - 44
ICL end cap	Refer pg 1 - 44
Panelboard switch	DTPBS
3 way neutral link suit RCCB	DTTAX16PN3
Holder DIN profile suits 22.5 mm devices	M22IVS

Notes: [1]) Suitable for padlock HASP size 4.5 to 6.5 mm. Refer NHP for other new options.

Miniature circuit breakers

Din-T pushbuttons and pilot lights

- Modular size
- DIN rail mounting
- Terminal protection IP 20
- Contacts 16 amp rating @ 250 V AC



DTPL & DTPB Pushbuttons and indicating lights

DTPB Pushbutton

Pushbuttons

Contacts		Cat. No.
1 x (N/O + N/C)		DTPB11
1 x N/O + LAMP		DTPB10L [1])

Accessories

Lamp 24 V [3])	85 mA filament	DTPLL24
Lamp 240 V	2.2 mA neon	DTPLL240
Lens	red	DTPLLRD
	green	DTPLLGR
	orange	DTPLLOR
	transparent	DTPLLCL

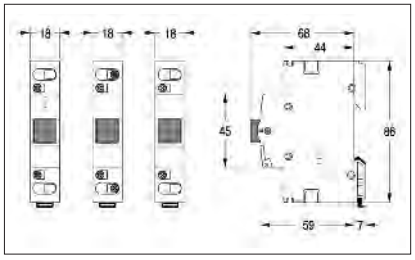
Pilot light

Lamp holder		DTPLB [2])

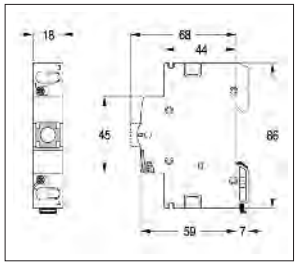
Technical data

Nominal rated current	Pushbuttons 16 A
Usable as mains diconnect switch	no
Nominal breaking capacity at 415 V, cos φ = 0.95	–
Nominal breaking capacity at 415 V, cos φ = 0.65	–
Nominal voltage single pole devices	240 V
Nominal voltage multi-pole devices	–
Maximum allowed current during less that 1 s	–
Mechanical service life (complete on-off-cycle)	> 20000
Electrical service life, cos φ = 0.95, U_n and I_n	> 20000
Short-circuit resistance with upfront fuses	4.5 kA (nominal)
Short-circuit resistance without upfront fuses	3 kA (nominal)
Protection degree	IP 20
Screws	Pozidrive 1
Terminal capacity: min	1 x 1.5 mm²
max	1 x 10 mm²

Pushbutton (DTPB)



Indicator lamp/Pilot light (DTPL)



Notes: [1]) Order lens separately. 240 V lamp built-in and cannot be changed.
[2]) Order lens and lamp separately.
[3]) Other voltages available on request. Lamp type "E10" ES.
Order lamp and lens separately.

Miniature circuit breakers

Din-T modular changeover switch DTCS

- Standard IEC 60669-1
- Complies with IEC 408 isolating duty - has double break contacts
- Terminal protection IP 20
- Handle sealable and lockable in ON or OFF position
- Captive terminal screws with cross head

DTCS
Changeover switch

Changeover switch (without OFF) I - II

I_n (A)	No. of Poles	No. of Modules	Connection	Cat. No.
32	1	1		**DTCS3212**
32	2	1		**DTCS3222**

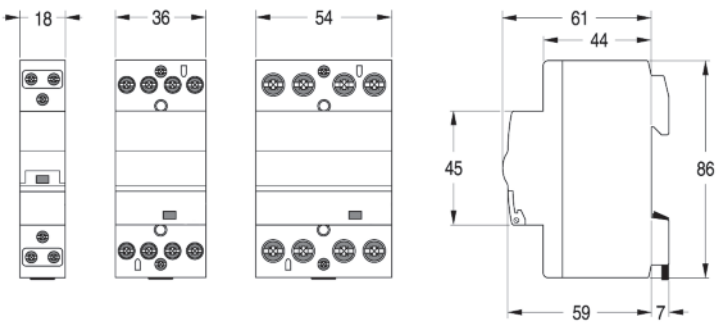
Changeover switch (with OFF) I-O-II

32	1	1		**DTCS3213**
32	2	1		**DTCS3223**

Technical data

Nominal rated current		**32 A**	
Usable as mains disconnect switch		no	
Nominal breaking capacity at 415 V, cos φ = 0.95		1.25 x I_n	
Nominal breaking capacity at 415 V, cos φ = 0.65		–	
Nominal voltage single pole devices		240 V	
Nominal voltage multi-pole devices		415 V	
Maximum allowed current during less that 1 s		–	
Mechanical service life (complete on-off-cycle)		> 20000	
Electrical service life, cos φ = 0.95, U_n and I_n		> 20000	> 5000
Short-circuit resistance with upfront fuses		4.5 kA (nominal)	
Short-circuit resistance without upfront fuses		3 kA (nominal)	
Protection degree		IP 20	
Screws		Pozidrive 1	
Terminal capacity:	min.	1 x 1.5 mm²	
	max.	1 x 10 mm²	

Dimensions (mm)



Miniature circuit breakers

LOCK DIN™

- Captive locking
- Suits Din-T 6,10, 15 MCB
- Suits 1P RCBO (DSRCBH)
- Suits 2P RCBO (DSRCB)
- Suits Din-T 10H MCB
- Padlock 2 mm - 6.5 mm

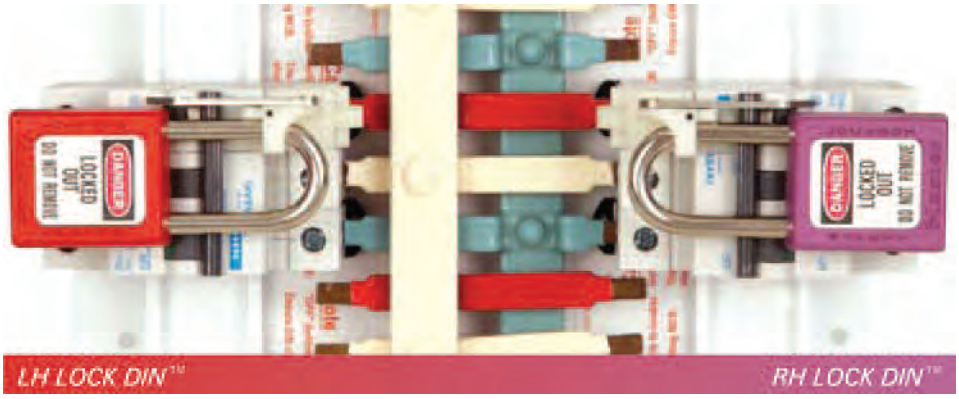
The LOCK DIN™ is a system that has been designed for safe and secure captive locking of Terasaki DIN-T MCBs. Three years of development has led to the new unique design unlike anything else available on the market.

Product overview

The system is designed to be used in conjunction with NHP's Concept Premier and Concept Tough Panelboards. If a switchboard is being specifically designed to accommodate the new LOCK DIN™, then extra depth is required between the door and escutcheon to accommodate the padlocks used. The LOCK DIN™ is designed to be clipped onto the line side of the MCB. This requires the line terminal screw to be tightened before installation. The escutcheon cut out needs to be increased by 16 mm over the line terminal to allow for the extended profile of the MCB with the LOCK DIN™ fitted. When the necessary accessories are added, LOCK DIN™ becomes a complete system designed for safety.

	Description	Cat. No.
Locking devices	LH locking assembly for MCBs and single pole RCBOs (DSRCBH)	DTLLA
	RH locking assembly for MCBs and single pole RCBOs (DSRCBH)	DTLLARH
	LH locking assembly for 2 pole RCBOs	DTLLAB
	RH locking assembly for 2P RCBOs	DTLLABRH
	12 pack LH locking assembly for MCBs and single pole RCBOs (DSRCBH)	DTLLABULK
	12 pack RH locking assembly for MCBs and single pole RCBOs (DSRCBH)	DTLLARHBULK
	Locking assembley for Din-T 10H MCB + 2 blanks	DTLLA10H

	Description	Cat. No.
Pole fillers & blanking devices	12 pack locking blank for MCBs, single pole RCBOs and 9 mm aux	DTLLB
	Locking blank for DSRCM (add on RCCB), 3 pole MCBs	DTLCM
	Dummy MCB (for total touch protection)	DTLDM
	12 pack pole filler (extended length to suit 63 mm cutout)	DTLPF



Miniature circuit breakers

LOCK DIN™

	Description	Cat. No.
Escutcheons and labels	Concept Premier escutcheon size 1 24 way to suit LOCKDIN	CPPES100DTL
	Concept Premier escutcheon size 2 48 way to suit LOCKDIN	CPPES200DTL
	Concept Premier escutcheon size 3 60 way to suit LOCKDIN	CPPES300DTL
	Concept Premier escutcheon size 4 84 way to suit LOCKDIN	CPPES400DTL
	Concept Premier escutcheon size 5 96 way to suit LOCKDIN	CPPES500DTL
	Concept Tough escutcheon size 2 48 way to suit LOCKDIN	CTES248RDCOLD
	Concept Tough escutcheon size 3 96 way to suit LOCKDIN	CTES396RDCOLD
	Centre escutcheon label 1-48	LABLE148DT
	Centre escutcheon label 49-96	LABLE4996DT

DTLLA LockDin

Extended profile (Fig. C)

MCB in ON position. Non lockable

MCB in OFF position. Can be locked

1 x DTLLA

1 x DTLCM

2 x DTLLB

DTLDM dummy module

DTLLB locking blanks

DTLCM locking blank

DTLLAB LockDin (RCBO)

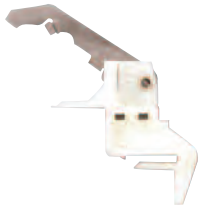
Miniature circuit breakers

LOCK DIN™

DTLLA - Lockdog (patent pending)
Installation Instructions for DIN-T MCBs only

The DTL-LA lockdog assembly is designed to be used in conjunction with special lockdog escutcheons. It accepts locks from 3 mm to 6.5 mm in thickness.

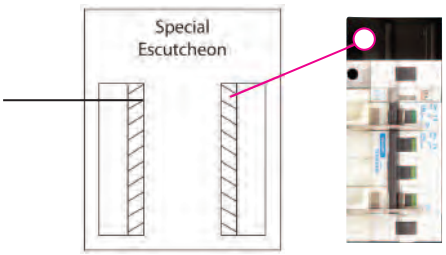
1. The DTLLA (right) snaps on tightly to the line side of the MCB or RCBO to form a captive Lockdog arrangement.
2. Note: tighten line terminal before inserting Lockdog.



3. The DTLLA correctly fitted onto the line side of the MCB with a typical padlock fitted.

4. Example of how the Lockdog is correctly fitted with an escutcheon.

16 mm extra has been cut out from the escutcheon to accommodate the Lockdog and accessories.



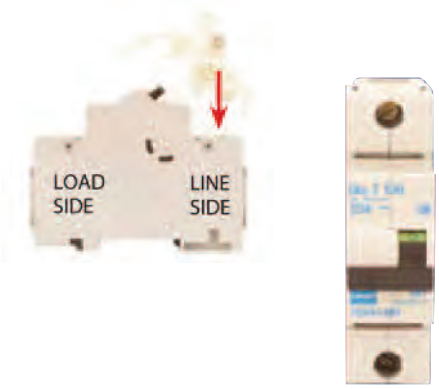
Notes: Special cutout of escutcheon will be needed for the Lockdog to fit - contact your NHP representative.

Miniature circuit breakers

LOCK DIN™

The DTL-LA10H Lockdog assembly is designed to be used in conjunction with special Lockdog escutcheons.
Note: Tighten Line terminal before inserting Lockdog

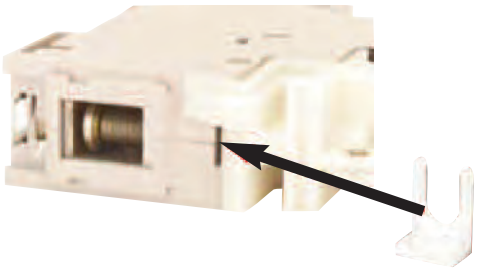
STEP 1. The DTLLA10H is designed to be mounted on the line terminal of any DINT-10H MCB.



STEP 2. The image shows the DTLLA10H fitted to the line side of the MCB.

A DINT-10H MCB showing line and load side terminals

STEP 3. The DTLLA10H comes with a small tab that is designed to secure the locking device to the MCB in a captive arrangement. It should be inserted into the small slot next to the line terminal of the MCB.



FINISH. Once the tab is in place, the installation of the DTLLA10H is complete.

Miniature circuit breakers

Din-T Meter isolator

Meter Isolator - LockDIN™

The Lockable Meter Isolator from NHP utilises the captive locking system known as LockDIN™. LockDIN™ has been designed for safe and secure captive locking of Terasaki Din-T MCBs. When you combine LockDIN™ with a sealable enclosure and Terasaki MCB, you have a complete system suitable for meter isolation and supply capacity /service protection. [1])

DTPC Complete kits include: enclosure, MCB and LockDIN™

No. of poles	Amps	kA	Curve	Cat. No.
Enclosure type - DTPC (2 pole)				
1 pole	63 A	6 kA	C	DTPC2LDCB
			D	DTPC2LDCBV
Enclosure type - DTPC (4 pole)				
3 pole	63 A	6 kA	C	DTPC4LDCB
		10 kA	D	DTPC4LDCBV

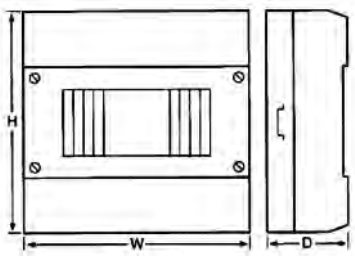
ILC Complete kits include: enclosure, MCB and LockDIN™

No. of poles	Amps	kA	Curve	Cat. No.
Enclosure type - ILC (4 pole)				
1 pole	63 A	6 kA	C	ILC4SLDCB1P
			D	ILC4SLDCB1PD
	80-125 A	10 kA	C	ILC4SLDCB__1P [2])
			D	ILC4SLDCB__1PD [2])
3 pole	63 A	6 kA	C	ILC4SLDCB3P
		10 kA	D	ILC4SLDCB3PD
	80-125 A	10 kA	C	ILC4SLDCB__3P [2])
			D	ILC4SLDCB__3PD [2])

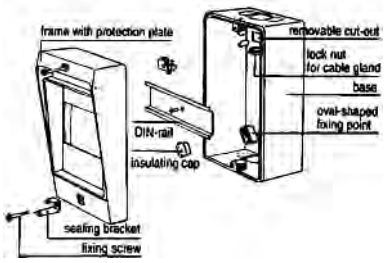
Enclosures only, to suit meter isolator

To suit	Enclosure type	Cat. No.
1 P MCB ≤63 A	DTPC (2 pole)	DTPC2LD
1-3 P MCB ≤63 A	DTPC (4 pole)	DTPC4LD
1-3 P MCB ≤63 A	ILC (4 pole)	ILC4SLD
1-3 P MCB 80-125 A	ILC (4 pole)	ILC4SLD10H
2 P RCBO 6-40 A	DTPC (2 pole)	DTPC2LDRCBO

DTPC enclosure



ILC enclosure



Dimensions (mm)

No. of poles	Height	Width	Depth
2 pole	139	51	61
4 pole	139	88	61

Dimensions (mm)

No. of poles	Height	Width	Depth
4 pole	175	90	100

Notes: [1]) As the service and installations rules vary from region to region please consult these to check suitability.
[2]) Insert 80, 100 or 125 for required amps rating.

Miniature circuit breakers

Din-T contactors DTC

DTC
4 pole contactor

- Standard AS/NZS 60947-4-1
- Voltage 240/415 V AC
- Silent operated magnetic drive
- Integrated surge suppression
- Switch position indicator
- Increased switching capacity and endurance
- DIN rail mount

Application

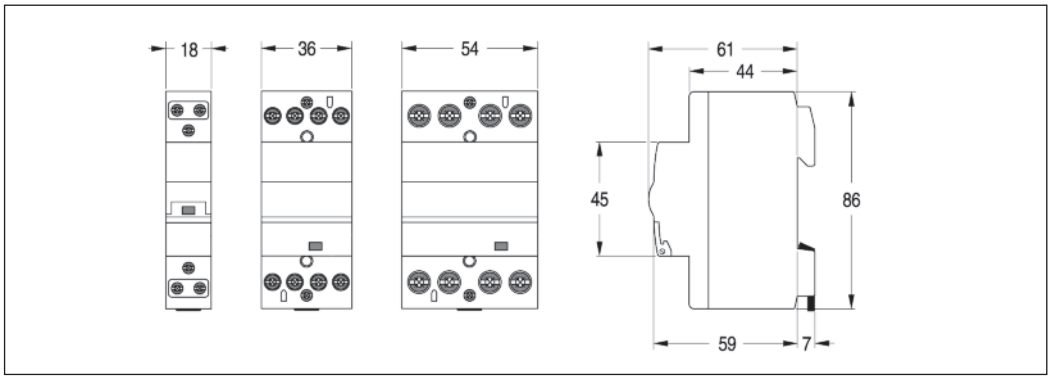
Din-T contactors are electromagnetically operated load-break devices, mainly used to control single or multi-phase high power loads while the control itself can be low power. Applications include switching and control of lighting equipment, heating, ventilation, pumps, heat pumps, and other equipment.

Features

The 20 A type has an AC magnetic system, 24, 40 and 63 A types have a DC magnetic drive and therefore are silently operated. An integrated diode rectifier allows AC or DC voltage connection.
The integrated varistor protects the coil against lightning and over-voltage up to 5 kV. The contactors can be combined with PLCs. Surge suppression is not necessary, the magnetic system is shielded for radio interference. The switch position of the contacts is visible through a flag in position on the front.

Modules (18mm)	No. of contacts	Current Amps (Ith)	Coil volts	Cat. No. [1]
1	2 N/O	20	24 AC	**DTC202024**
1	2 N/O	20	240 AC	**DTC2020240**
1	2 N/C	20	240 AC	**DTC2002240**
1	1 N/O + 1 N/C	20	240 AC	**DTC2011240**
2	4 N/O	24	240 AC/DC	**DTC2440240**
2	4 N/C	24	240 AC/DC	**DTC2404240**
2	4 N/O	24	12 AC/DC	**DTC244012**
2	4 N/O	24	24 AC/DC	[i] **DTC244024**
3	4 N/O	40	24 AC/DC	[i] **DTC404024**
3	4 N/O	40	240 AC/DC	**DTC4040240**
3	4 N/O	63	24 AC/DC	[i] **DTC634024**
3	4 N/O	63	240 AC/DC	**DTC6340240**

Dimensions



Notes: [1] 1 N/O – 1 N/C AND 2 N/O auxiliary contacts are available. Refer NHP.
"Day & Night" contactors. Contact NHP.
[i] Available on indent only.

Miniature circuit breakers
Din-T contactors DTC

Type		DTC20...	DTC24...	DTC40...	DTC63...
Contact configuration		1 N/O - 1 N/C or 2 N/C	4 N/O or 4 N/C	4 N/O	
AC 1/ AC 7a Switching of heaters					
Rated operational current Ie [1])		20 A	24 A	40 A	63 A
Rated output AC 1	240 V 1 ø	4 kW	5.3 kW	8.7 kW	13.3 kW
	415 V 3 ø	-	16 kW	26 kW	40 kW
AC 3/AC 7b Switching of motors					
Rated operational current Ie [1]) (AC 3)		9 A	9 A 6 A	22 A	30 A
Rated output AC 3	240 V 1 ø	1.3 kW	1.3 kW	3.7 kW	5 kW
	415 V 3 ø	-	4 kW	11 kW	15 kW
AC 5a Switching of electric discharge lamp controls (fluorescent lamps uncompensated)					
Rated operational current Ie [1])		8 A	10 A	30 A	44 A
AC 5b Switching of incandescent lamps					
Rated operational current Ie [1])		6 A	7 A	15 A	22 A

Switching of DC (with N/O contacts)

	Rated operating voltage U_e	DC 1 (L/R < 1ms) [2])			DC 3 (L/R < 2ms) [2])		
		1 pole	2 pole	3 pole	1 pole	2 pole	3 pole
DC 24	24 V DC	24.0 A	24.0 A	24.0 A	16.0 A	24.0 A	24.0 A
	220 V DC	0.9 A	4.5 A	13.0 A	0.2 A	1.0 A	4.0 A
DC 40	24 V DC	40.0 A	40.0 A	40.0 A	19.0 A	40.0 A	40.0 A
	220 V DC	1.0 A	5.0 A	15.0 A	0.3 A	1.1 A	4.5 A
DC 63	24 V DC	50.0 A	63.0 A	63.0 A	21.0 A	44.0 A	63.0 A
	220 V DC	1.1 A	5.5 A	17.0 A	0.3 A	1.2 A	5.0 A

Switching of DC (with N/C contacts)

	Rated operating voltage U_e	DC 1 (L/R < 1ms) [2])			DC 3 (L/R < 2ms) [2])		
		1 pole	2 pole	3 pole	1 pole	2 pole	3 pole
DC 24	24 V DC	14.5 A	24.0 A	24.0 A	6.3 A	11.0 A	19.0 A
	220 V DC	0.2 A	1.4 A	3.8 A	0.1 A	0.6 A	1.6 A

Characteristics of the magnet system

Type		DTC20	DTC24	DTC40	DTC63
Control voltage range		0.85 ... 110 % x Un			
Rated consumption of magnetic coil at Uc = 240 V	Pull-in	8 VA	4 VA	5 VA	65 VA
		5 W	4 W	5 W	65 W
	Holding	3.2 VA	4 VA	5 VA	4.2 VA
		1.2 W	4 W	5 W	4.2 W
Switching-on delay		9 - 12 ms	< 40 ms	< 40 ms	< 40 ms
Switching-off delay		10 - 12 ms	< 40 ms	< 40 ms	< 40 ms
Definite switching-off between		20 to 75 % Uc		10 to 75 % Uc	
Ohmic loss per current path at Ith and AC 1		1 W	1.5 W	3 W	6 W
Connections	Main leads	1 x 10 mm² / 2 x 4 mm²		1 x 25 mm² / 2 x 10 mm²	
	Coil	1 x 4 mm² / 2 x 2.5 mm²			

Endurance and mechanical switching

Endurance	Mechanical	1 x 10^6	1 x 10^6	1 x 10^6	1 x 10^6
	Electrical at AC 1/AC 7a	150 000	150 000	150 000	150 000
	at AC 3/AC 7b	150 000	500 000	170 000	240 000
Maximum switching	AC 1/ AC 7a	300 operations/h			
	AC 3/ AC 7b	600 operations/h			
Rated operating frequency		50 or 60 Hz	DC, 40 up to 450 Hz		
Switching-on capacity	Cos ø 0.65 at 380 - 400 V 3 ø	-	90 A	220 A	300 A
Ieff (IEC 60947-4-1)	Cos ø 0.95 at 220 - 230 V 1 ø	100 A	-	-	-
Switching-off capacity	Cos ø 0.65 at 380 - 400 V 3 ø	-	72 A	176 A	240 A
Ieff (IEC 60947-4-1)	Cos ø 0.95 at 220 - 230 V 1 ø	80 A	-	-	-
Short time circuit max. 10 s at ambient temp of < 40°C in free air, from cold start		76 A	68 A	176 A	240 A

Notes: [1]) When parallel switching of 2 current paths the rated current Ie will be multiplied by 1.6. [2]) 2 & 3 poles connected in series. If several contactors are mounted beside each other and the operating time is greater than one hour, leave a 1/2 module distance between every 3rd contactor. (not applicable for ambient temperatures <40 °C and for type DTC20)

Miniature circuit breakers
Din-T contactors DTC

Switching for lamp load

Lamp type	Lamp Data		Permitted number of lamps per phase (230 V, 50 Hz) for contactor type				Capacitor
	watt	In (A)	DTC 20	DTC 24	DTC 40	DTC 63	(µF)
Incandescent lamps	60	0.26	21	25	54	83	
	100	0.43	13	15	32	50	
	200	0.87	7	7	16	25	
	300	1.3	4	5	11	16	
	500	2.17	3	3	6	10	
	1000	4.35	1	1	3	5	
Fluorescent lamps	**Uncompensated and series compensation**						
	15	0.35	25	30	100	155	
	20	0.37	22	26	85	140	
	40	0.43	17	20	65	105	
	42	0.54	13	16	52	85	
	65	0.67	10	12	40	60	
	115	1.5	4	5	18	28	
	140	1.5	4	5	18	28	
	Two lamp circuit						
	2 x 20	2 x 0.13	2 x 22	2 x 26	2 x 85	2 x 140	
	2 x 40	2 x 0.22	2 x 17	2 x 20	2 x 65	2 x 105	
	2 x 42	2 x 0.24	2 x 13	2 x 16	2 x 52	2 x 85	
	2 x 65	2 x 0.34	2 x 10	2 x 12	2 x 40	2 x 60	
	2 x 115	2 x 0.65	2 x 4	2 x 5	2 x 18	2 x 28	
	2 x 140	2 x 0.75	2 x 4	2 x 5	2 x 18	2 x 28	
	Parallel compensation						
	15	0.11	6	8	15	67	4.5
	20	0.13	5	7	14	60	5
	40	0.22	6	8	15	67	4.5
	42	0.24	4	6	12	50	6
	65	0.34	4	5	10	43	7
	115	0.65	1	2	4	17	18
	140	0.75	1	2	4	17	18

Miniature circuit breakers

Din-T contactors DTC

Switching for lamp load cont.

Lamp type	Lamp Data		Permitted number of lamps per phase (230 V, 50 Hz) for contactor type				Capacitor
	watt	In (A)	DTC 20	DTC 24	DTC 40	DTC 63	(µF)
High presure mercury	Uncompensated						
vapor lamps e.g.	50	0.61	12	14	36	50	
HQL, HPL	80	0.8	7	10	27	38	
	125	1.5	5	7	19	26	
	250	2.15	3	4	10	14	
	400	3.25	1	2	7	10	
	700	5.4	-	1	4	6	
	100	7.5	-	1	3	4	
	2000/400 V	8	-	1	3	4	
	Parallel compensation						
	50	0.28	4	5	10	43	7
	80	0.41	3	4	8	37	8
	125	0.65	2	3	6	26	10
	250	1.22	1	2	3	15	18
	400	1.62	-	1	3	10	25
	700	3.45	-	-	1	5	45
	1000	4.8	-	-	1	4	60
	2000/400 V	5.45	-	1	2	2	35
Lamps with	Permitted number of electropower supply units per phase						
electronic power	1 x 18		15	24	55	76	
supply units	2 x 18		8	18	34	48	
	1 x 36		12	16	34	47	
	2 x 36		7	11	20	29	
	1 x 58		11	14	32	46	
	2 x 58		6	8	17	24	

Miniature circuit breakers

Din-T contactors DTC

Switching for lamp load cont.

Lamp type	Lamp Data		Permitted number of lamps per phase (230 V, 50 Hz) for contactor type				Capacitor
	watt	In (A)	DTC 20	DTC 24	DTC 40	DTC 63	(µF)
low presure sodium	Uncompensated						
vapor lamps	35	1.5	5	8	22	30	
	55	1.5	5	8	22	30	
	90	2.4	3	5	13	19	
	135	3.5	2	3	10	13	
	150	3.3	2	3	10	14	
	180	3.3	2	3	10	14	
	200	2.3	3	5	14	20	
	Parallel compensation						
	35	0.31	-	1	4	15	20
	55	0.42	-	1	4	15	20
	90	0.63	-	1	3	10	30
	135	0.96	-	-	2	7	45
	150	1	-	-	2	8	40
	180	1.16	-	-	2	8	40
	200	1.32	-	1	3	12	25
high pressure	Uncompensated						
sodium vapor lamps	150	1.8	-	4	15	20	
	250	3	-	3	9	15	
	330	3.7	-	2	8	10	
	400	4.7	-	1	6	8	
	1000	10.3	-	-	3	4	
	Parallel compensated						
	150	0.83	-	1	3	15	20
	250	1.5	-	1	2	9	33
	330	2	-	-	2	7	40
	400	2.4	-	-	1	6	48
	1000	6.3	-	-	-	2	106

Transformer data	Permitted number of lamps per phase (230 V, 50 Hz) for contactor type			
watt				
Transformers for	20	40	52	110	174
halogen low voltage	50	20	24	50	80
lamps	75	13	16	35	54
	100	10	12	27	43
	150	7	9	19	29
	200	5	6	14	23
	300	3	4	9	14

Miniature circuit breakers
Din-T contactors DTC

Endurance

In general, the guaranteed number of operations at nominal load in AC 1 is called the electrical service life. The Din-T contactors all have an electrical service life of 150000 operations
(Note: 1 cycle = N/O → N/C → N/O = 2 operations).

However, if the load of the contactor is less than its nominal load, the erosion of the contacts will be less and as a consequence, the electrical service life will increase.

The graphs in figure 8 show the relation between the number of operations and the maximum load allowed to obtain this life expectancy.

fig. 8A
Endurance curve
(Operations vs. switching-off current)
AC 1/400 V 3 for 24, 40, 63 A types
AC 1/230 V 1 for 20 A type

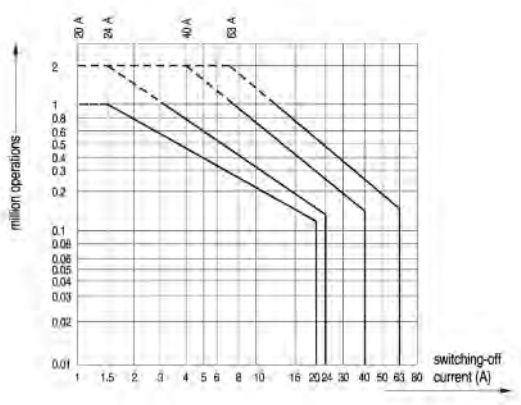
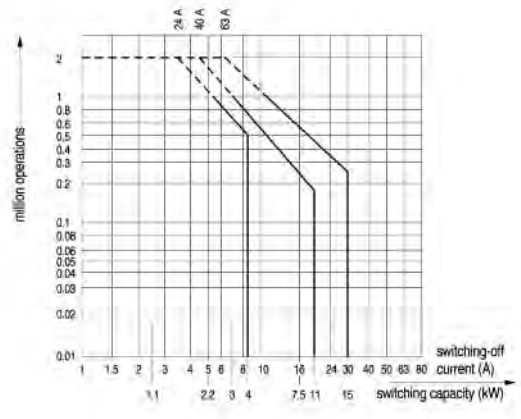


fig. 8B
Endurance curve
(Operations vs. switching-off current [kW])
AC 3/400 V 3 for 24, 40, 63 A types
AC 3/230 V 1 for 20 A type



Example

An electrical heater (4.4 kW, 230 V, single phase) is used for 200 days per year. On average, the thermostat switches 50 times a day on and off (= 100 operations).

The total number of operations per year is 20000 (200 days x 100 operations/day).

The current this heater draws is roughly 20 A.

In this case,

- a 20 A contactor will operate for 7.5 years (150000 / 20000),
- a 24 A contactor will operate for 9 years (180000 / 20000),
- a 40 A contactor will operate for 15 years (300000 / 20000),
- a 63 A contactor will operate for 27 years (540000 / 20000).

General remarks

- Using contactors at low voltage, and especially when several devices can be operated simultaneously, ultimate care should be taken to the correct dimensioning of the step-down transformer.
- When several adjacent contactors are continuously energised (1 hour and more), the heat dissipation could influence the correct operation in a negative way. If several contactors are mounted beside each other and the operating time is greater than 1 hour, leave a ½ module distance between every 3rd contactor. (Not applicable for ambient temperature lower than 40 °C or for 20 A types).

Features

- Contactors all have a silent operation and therefore are preferably equipped with a DC-coil.
- An internal bridge rectifier allows the contactor to be used on AC (from 40 to 450 Hz) as well as on DC (except for the 20 A contactor).
- The capacity of the load-terminals is from 1.5 to 10 mm².
- The capacity of the control-terminals is from 0.5 to 4 mm².
- The contactors are equipped with a flag which indicates the position of the coil (contacts).
- The protection-degree of the contactor is IP 20.
- The devices are modular and DIN-rail mountable.
- Auxiliary contacts as well as spacers for heat dissipation are available.
- The power-supply voltage is allowed to vary in the range of 106 % x Un ... 80 % x Un without influencing the correct operation of the device.
- Day-Night contactors are available; these contactors have a 0 - Auto - 1 switch for manual operation. This switch cannot be blocked in the 1 - position.

Miniature circuit breakers

Din-T hour run counter DTHR

DTHR
Hour run counter

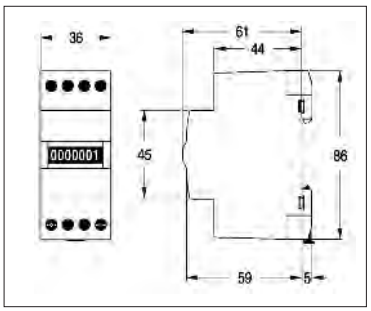
- Two module width
- DIN rail mounting
- With synchronous motor drive
- Permanent visual display, non resettable
- Electromechanical device

Function

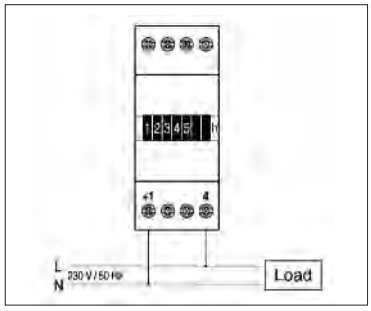
The Din-T hour run counter indicates the number of hours an appliance has been working as an aid to scheduling and performing maintenance.

Description	Cat. No.
Din-T hour run counter	**DTHR [1])**

Dimensions (mm)



Connection schematic



Technical data

Rated voltage	(V AC/Hz)	220-240/50
Consumption	(mA)	10
Counter capacity	(Hours)	99,999.99
Terminal protection degree		IP 20
Terminal capacity	(mm^2)	1 x 2.5 or 2 x 1.5
Ambient temperature	(°C)	- 10 to +55

Note: [1]) Reset is not possible.

Miniature circuit breakers

Din-T impulse switches DTIS

DTIS
Impulse switch

- Standard IEC 60669-2-2
- Visible indication of contact position
- Manual or electrical operation
- Terminal protection IP 20
- Terminal screws are captive with groove and cross head
- 16 amp 240 V AC contact rating
- 32 amp unit option

Function

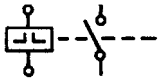
Impulse switches are electromechanically or electronically controlled switches used to control single - or multi-phase medium-power loads while the control itself can be (very) low power. The device switches between 2 stable positions, each time a (brief) impulse energises its control circuit.

Applications

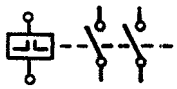
Mainly used for the switching of lighting and heating equipment and/or to obtain a simplified wiring in case the load needs to be controlled at reduced voltage and/or from more than 4 different places.

Besides the normal operation through electrically energising the coil, manual operation is possible at all times. The switch position of the impulse switch is visible through an indicator flag.

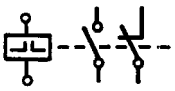
With 1 x N/O contact

Diagram	Coil voltage	Module	Cat. No. [1]
	12 V AC	1	[i] DTIS1012VAC
	24 V AC	1	[i] DTIS1024VAC
	48 V AC	1	[i] DTIS1048VAC
	240 V AC	1	[i] DTIS10240VAC
	12 V DC	1	DTIS1012VDC
	24 V DC	1	[i] DTIS1024VDC

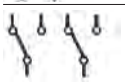
With 2 x N/O contacts

Diagram	Coil voltage	Module	Cat. No. [1]
	12 V AC	1	[i] DTIS2012VAC
	24 V AC	1	[i] DTIS2024VAC
	48 V AC	1	[i] DTIS2048VAC
	240 V AC	1	DTIS20240VAC
	12 V DC	1	[i] DTIS2012VDC
	24 V DC	1	[i] DTIS2024VDC

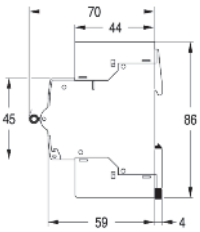
With 1 x N/O + 1 x N/C contacts

Diagram	Coil voltage	Module	Cat. No. [1]
	12 V AC	1	[i] DTIS1112VAC
	24 V AC	1	[i] DTIS1124VAC
	48 V AC	1	[i] DTIS1148VAC
	240 V AC	1	DTIS11240VAC
	12 V DC	1	[i] DTIS1112VDC
	24 V DC	1	[i] DTIS1124VDC

Add on power contact

Diagram	Coil Voltage	No. of poles	No. of mods.	Cat. No. [1]
	2	1	16 A	DTIS2NO
	2	1	16 A	DTIS2CO

Dimensions (mm)



Notes: [1] When stacking in rows ensure adequate ventilation. Insert spacer (DTSP) every second device when continuously energised.
[i] Available on indent only.

Miniature circuit breakers
Din-T impulse switches DTIS

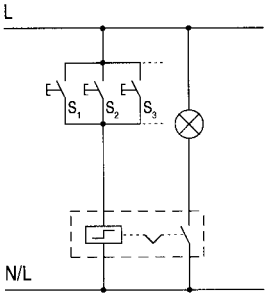
Technical data

In accordance with IEC 60669-2-2 contacts/load circuit

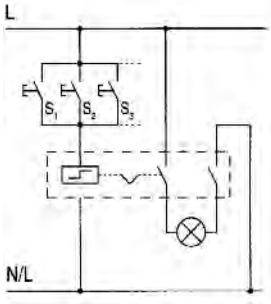
Rated switching capacity	**16 A**
Contacts	
Contact spacing / material	3 mm/$AgSnO_2$
Spacing between control and load circuit	> 6 mm
Isolation voltage contact/contact	400 V
Isolation voltage contact/magnetic system	400 V
Switching capacity	16 A/250 V; 10 A/400 V
Incandescent lamp load	10 A (2300 W)
Fluorescent lamp load, lead-lag circuit	16 A (3500 W)
Fluorescent lamp load, inductive or capacitive	10 A (1300 W)
Fluorescent lamp load, parallel compensated	4 A (500 W)
Electronic ballast load	10 A (2300 W); $I_{ON} \leq$ 140 A/10 ms
Inductive load, cos φ = 0.6 at 230 V	10 A (1300 W)
DC switching capacity	100 W
Minimum contact load	6 V / 50 mA
Maximum switching frequency	1000 / h
Mechanical service life	> 10^6
Electrical service life, cos φ = 1 [1])	> 10^5
Electrical service life, cos φ = 0.6 [1])	> 2 x 10^4
Electrical service life, 1000 W incandescent lamp [3])	> 10^5
Screws	Pozidrive 1
Terminal capacity: min	1 x 0.5 mm^2
max	1 x 6 mm^2 or 2 x 2.5 mm^2
Magnetic control system	
Control voltage range	0.9 … 1.1 x Un
Relative duty at rated voltage 1 & 2 pole / 3 & 4 pole	100 % / 60 %
Maximum continuous time of coil excitation	100 % for 1 & 2 poles, 1 h for 4 poles
Minimum duration of command impulse / pause	50 ms / -
Operating temperature range [2])	- 5 … + 50 °C
Maximum load of illuminated pushbuttons	
- Without parallel compensating capacitor	5 mA
- With 1 µ F / 250 V capacitor parallel to coil	10 mA
- With 2.2 µ F / 250 V capacitor parallel to coil	15 mA
Maximum coil power loss at Un and In	7 W for 1 pole, 10 for 2 poles, 20 for 4 poles
Maximum control line capacitance	0.06 µ F (= ± 200 m)
Screws	Pozidrive 1
Terminal capacity: min.	1 x 0.5 mm^2
max.	1 x 6 mm^2 or 2 x 2.5 mm^2

Notes:
[1]) Special care must be taken when connecting electromechanical impulse switches with central command. Terminals A1, B1 and C1 must be connected to the same voltage (i.e. live), whereas A2 must be connected to the opposite voltage (i.e. neutral). Incorrect connection i.e. different voltages on A1, B1 and C1 will destroy the central command circuit immediately after energising.
[2]) If several impulse switches are going to be permanently energised, please ensure that there is adequate ventilation in accordance with the power loss calculation. As a rule of thumb, use a ½ mod spacer every 2nd impulse switch when continuously energised.
[3]) Guaranteed at maximum switching frequency.

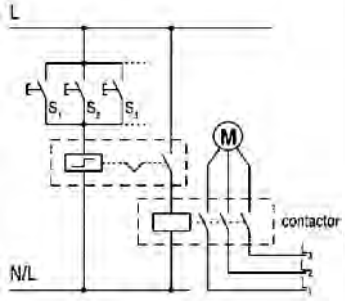
Applications - connection schemes



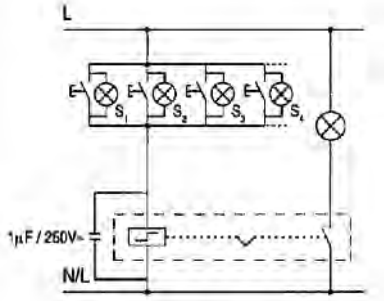
e.g. 1
One pole impulse switch activated by several non illuminated pushbuttons.



e.g. 2
Two pole impulse switch activated by several non illuminated pushbuttons.



e.g. 3
Direct on line motor starting from several locations via an impulse switch and a contactor.



e.g. 4
One pole impulse switch activated by several illuminated pushbuttons, with a total consumption of lamps being more than 5 mA.

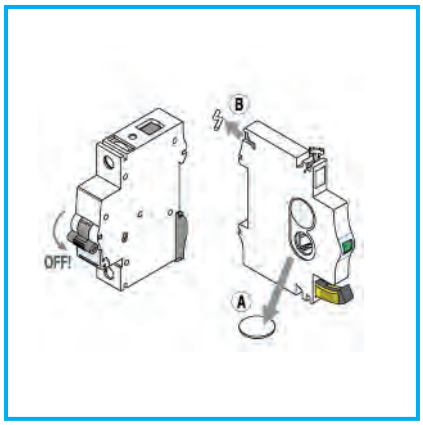
In this case connect a capacitor parallel to the coil.

Miniature circuit breakers

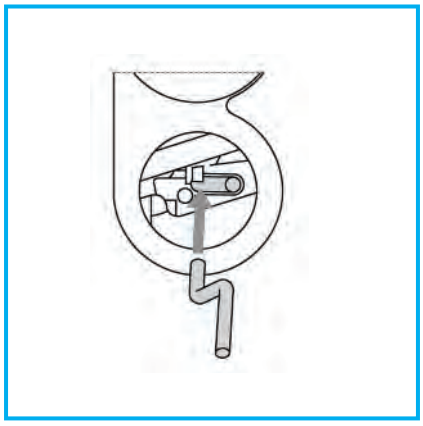
Panelboard switch (DTPBS)

The panelboard switch coupled to a main device is intended to switch off any 2 - 63 Amp MCB in case the front cover of the enclosure is removed. It is a mechanical safety device, which reduces the risk of electric shock in case of manipulation of the panelboard.
The panelboard switch can easily be coupled either to the right or the left-hand side of the main device, according to the following instructions.

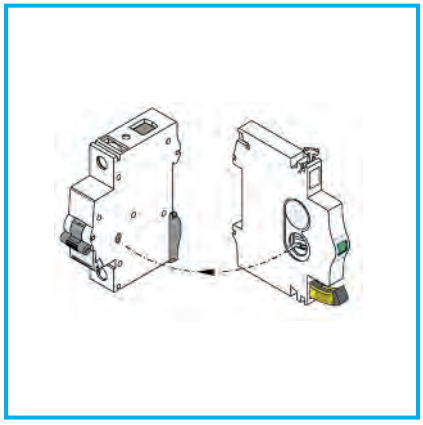
No. modules wide	Cat. No.
0.5 9 mm	DTPBS



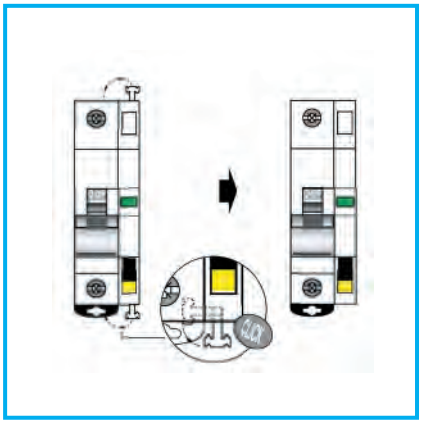
1. Ⓐ Remove the protective cover to gain access to the mechanism.
Ⓑ Remove the pin from its lodging.



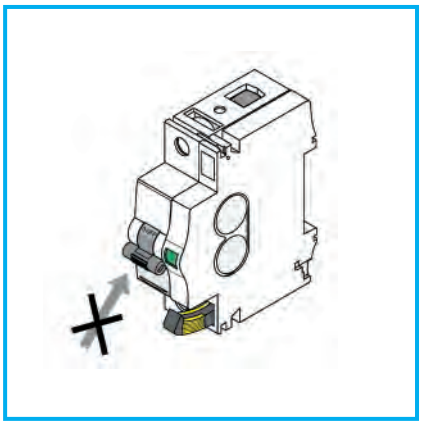
2. Place the pin into position.



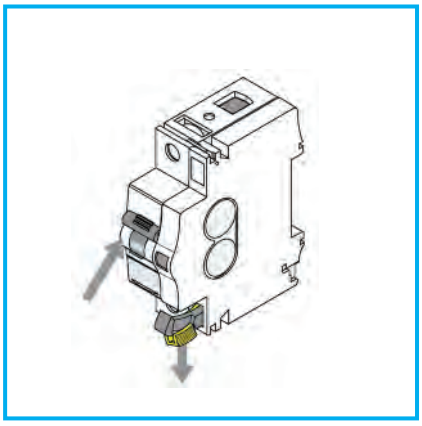
3. Place the panelboard switch to the main device with the toggle in the OFF position.



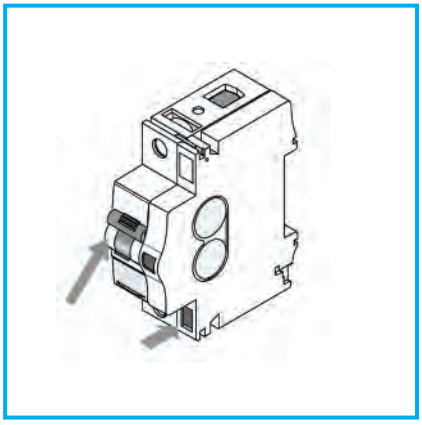
4. Click the two coupling parts into position.



5. The toggle of the main device can not be switched ON, if the button of the panelboard switch is not pressed by the enclosure front cover.



6. The main device can be switched ON without the need of placing the enclosure front cover into position, by pulling down the yellow part of the button.



7. The main device can be switched ON normally when the enclosure front cover is placed into the closed position.