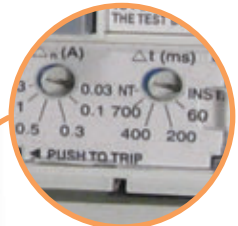




# Low voltage moulded case circuit breakers with residual current protection

## Main features and advantages

Breaking capacities as on MCCBs



Adjustable residual current tripping thresholds between 30mA and 3A. Adjustable time delay for residual current protection between 60ms and 700ms including INST (instantaneous) and NT (No Trip).



Type A: Tripping is ensured for residual sinusoidal AC in the presence of residual pulsating DC.



Voltage Presence LED Indicator and Trip Indicator (the yellow button pops up to indicate tripping due to residual current)



Test Button (to test the residual current detection and tripping system)



Dielectric test device plug (to allow dielectric testing with the EB2R closed - ON)



Adjustable overload protection  $I_R$  can be set between 63% and 100% of  $I_n$

**Undervoltage trip for EB2, ED2 800-1000AF - Time Delay**

Internal accessories can be mounted by customer	Code No.	Description	Poles	Packaging [pcs]
NA2 TD 800-1000AF AC230-240V	004672305	230-240V AC	3p, 4p	1/1
NA2 TD 800-1000AF AC380-415V	004672306	380-415V AC	3p, 4p	1/1
NA2 TD 800-1000AF AC440-450V	004672307	440-450V AC	3p, 4p	1/1
NA2 TD 800-1000AF DC24V	004672308	24V DC	3p, 4p	1/1
NA2 TD 800-1000AF DC115-120V	004672309	115-120V DC	3p, 4p	1/1

Important note: The shunt trip unit DA and undervoltage trip unit NA cannot be mounted in the same breaker

Time delay of 500ms

Time delay units are fitted to the outside of MCCBs

**Undervoltage trip for EB2, ED2 1250-1600AF - Time Delay**

Internal accessories can be mounted by customer	Code No.	Description	Poles	Packaging [pcs]
NA2 TD 1250-1600AF AC230-240V	004672390	230-240V AC	3p, 4p	1/1
NA2 TD 1250-1600AF AC380-415V	004672391	380-415V AC	3p, 4p	1/1
NA2 TD 1250-1600AF AC440-450V	004672392	440-450V AC	3p, 4p	1/1
NA2 TD 1250-1600AF DC24V	004672393	24V DC	3p, 4p	1/1
NA2 TD 1250-1600AF DC115-120V	004672394	115-120V DC	3p, 4p	1/1

Important note: The shunt trip unit DA and undervoltage trip unit NA cannot be mounted in the same breaker

Time delay of 500ms

Time delay units are fitted to the outside of MCCBs

**Auxiliary & Alarm switch for EB2, ED2 125-1600 AF**

Internal accessories can be mounted by customer	Code No.	Description	Poles	Packaging [pcs]
Auxiliary switch, PS2 125-1600AF	004671141	1 changeover contact	3p, 4p	1/1
Auxiliary switch, heavy duty PS2-NO 125-1600AF	004671142	1 contact, NO	3p, 4p	1/1
Auxiliary switch, heavy duty PS2-NC 125-1600AF	004671143	1 contact, NC	3p, 4p	1/1
Alarm switch SS2 125-1600AF	004671144	1 changeover contact	3p, 4p	1/1
Alarm switch, heavy duty SS2-NO 125-1600AF	004671145	1 contact, NO	3p, 4p	1/1
Alarm switch, heavy duty SS2-NC 125-1600AF	004671146	1 contact, NC	3p, 4p	1/1



SS2

**Shunt trip for EB2, ED2 125-1000A**

Internal accessories can be mounted by customer	Code No.	Description	Poles	Packaging [pcs]
DA2 125-1000AF AC200-240V	004671147	AC200-240V	3p, 4p	1/1
DA2 125-1000AF AC380-450V	004671148	AC380-450V	3p, 4p	1/1
DA2 125-1000AF DC24V	004671149	DC24V	3p, 4p	1/1
DA2 125-1000AF DC48V	004671150	DC48V	3p, 4p	1/1
DA2 125-1000AF DC100-120V	004671151	DC110-120V	3p, 4p	1/1
DA2 125-1000AF DC 200-240V	004671152	DC 200-240V	3p, 4p	1/1
DA2 125-1000AF DC 12V	004671159	12V DC	3p, 4p	1/1
DA2 125-1000AF AC 24V	004671189	24V AC	3p, 4p	1/1

Important note: The shunt trip unit DA and undervoltage trip unit NA cannot be mounted in the same breaker



DA2

**Shunt trip for EB2, ED2 1250 & 1600A**

Internal accessories can be mounted by customer	Code No.	Description	Poles	Packaging [pcs]
DA2 1250-1600AF AC200-240V	004671135	AC200-240V	3p, 4p	1/1
DA2 1250-1600AF AC380-450V	004671136	AC380-450V	3p, 4p	1/1
DA2 1250-1600AF DC24V	004671137	DC24V	3p, 4p	1/1
DA2 1250-1600AF DC48V	004671138	DC48V	3p, 4p	1/1
DA2 1250-1600AF DC100-120V	004671139	DC110-120V	3p, 4p	1/1
DA2 1250-1600AF DC 200-240V	004671140	DC 200-240V	3p, 4p	1/1
DA2 1250-1600AF AC 24V	004671190	24V AC	3p, 4p	1/1

Important note: The shunt trip unit DA and undervoltage trip unit NA cannot be mounted in the same breaker

Internal accessories – series EB2

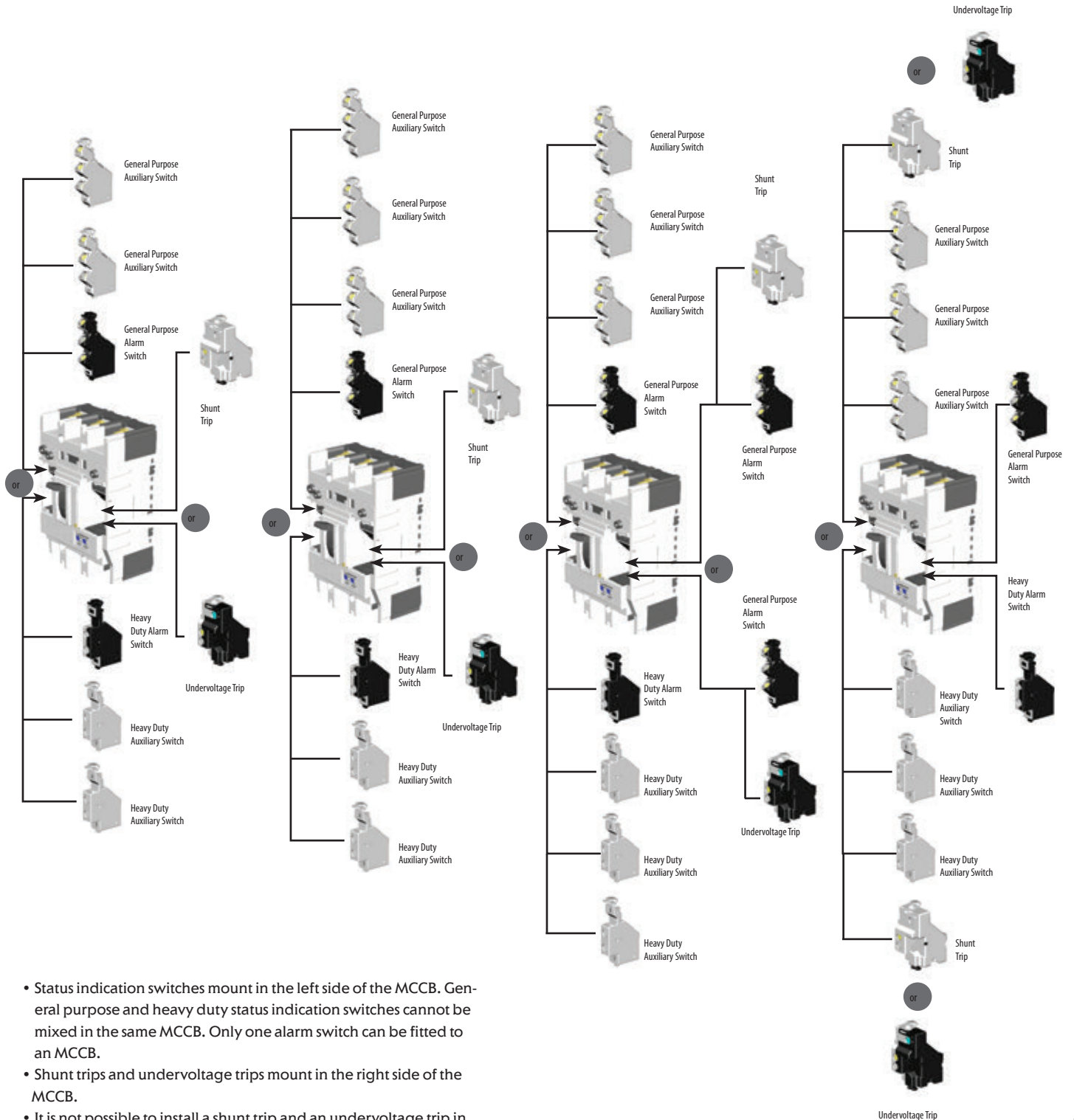
Ampere Frame size (A):

125, 160, 250

400, 630

800, 1000

1250, 1600

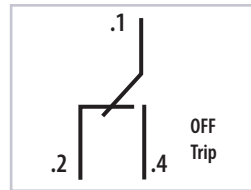


- Status indication switches mount in the left side of the MCCB. General purpose and heavy duty status indication switches cannot be mixed in the same MCCB. Only one alarm switch can be fitted to an MCCB.
- Shunt trips and undervoltage trips mount in the right side of the MCCB.
- It is not possible to install a shunt trip and an undervoltage trip in an MCCB as they occupy the same location. Undervoltage trips can provide remote tripping if necessary by wiring a normally closed contact or pushbutton in series with the protected supply.
- Undervoltage trips with time delays require an external time delay controller which clips to the side of the MCCB.

Internal accessories – series EB2



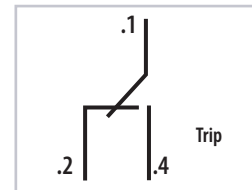
General Purpose Auxiliary Switch



Terminal Designations and Function of General Purpose Auxiliary Switch



General Purpose Alarm Switch



Terminal Designations and Function of General Purpose Alarm Switch

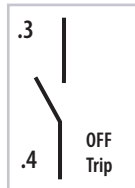
General purpose auxiliaries and alarm switch ratings

Volts (V)	AC Amperes (A)		Volts (V)	DC Amperes (A)		Minimum Load
	Resistive Load	Inductive Load		Resistive Load	Inductive Load	
440	-	-	250	-	-	100mA -> 15V DC.
240	3	2	125	0.4	0.05	
110	3	2	30	3	2	

Amperes (A)



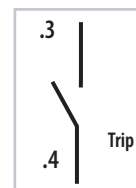
Heavy Duty Auxiliary Switch



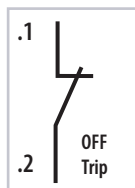
Terminal Designations and Function of Heavy Duty Auxiliary Switch NO contact



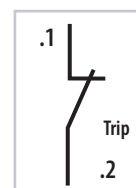
Heavy Duty Alarm Switch



Terminal Designations and Function of Heavy Duty Alarm Switch, NO contact



Terminal Designations and Function of Heavy Duty Auxiliary Switch, NC contact



Terminal Designations and Function of Heavy Duty Alarm Switch, NC contact

Ratings of Heavy Duty Auxiliary and Alarm switches

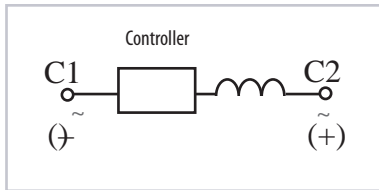
Volts (V)	AC Amperes (A)		Volts (V)	DC Amperes (A)	
	Resistive Load	Inductive Load		Resistive Load	Inductive Load
440	3	3	250	0.5	0.5
240	4	4	125	1	1
110	5	5	48	3	2.5
48	6	6	24	6	2.5



Shunt Trips

**Ratings of Shunt Trips**

Rated Voltage	Voltage AC		Voltage DC			
	200-240	380-450	24	48	100-120	200-240
Excitation Current (A)	0.014	0.0065	0.03	0.03	0.011	0.011



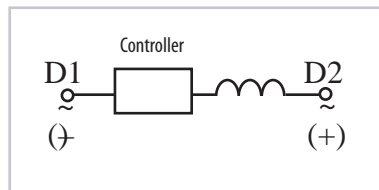
Terminal Designations of Shunt Trips



Undervoltage Trips

**Ratings of Undervoltage Trips**

Rated Voltage	Power supply capacity (VA)		Excitation current (mA)		
	Voltage AC		Voltage DC		
	200-240	380-450	24	100-120	200-240
Power Supply Capacity (A)	1.4	2.28	23	10	10



Terminal Designations of Undervoltage Trips