

SIEMENS

Sentron 3VT circuit breakers

Simply Smart: First choice for power distribution

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Sentron 3VT Molded Case Circuit-Breakers - 10-1600Amperes

With the standard line of 3VT molded-case circuit breakers (MCCB), Siemens offers an economic solution for the entire power range from 10 A to 1,600 A, providing a smart way to protect plants, transformers, generators and motors.

Efficient and optimised solution for infrastructure as well as in industrial low voltage power distribution requirements

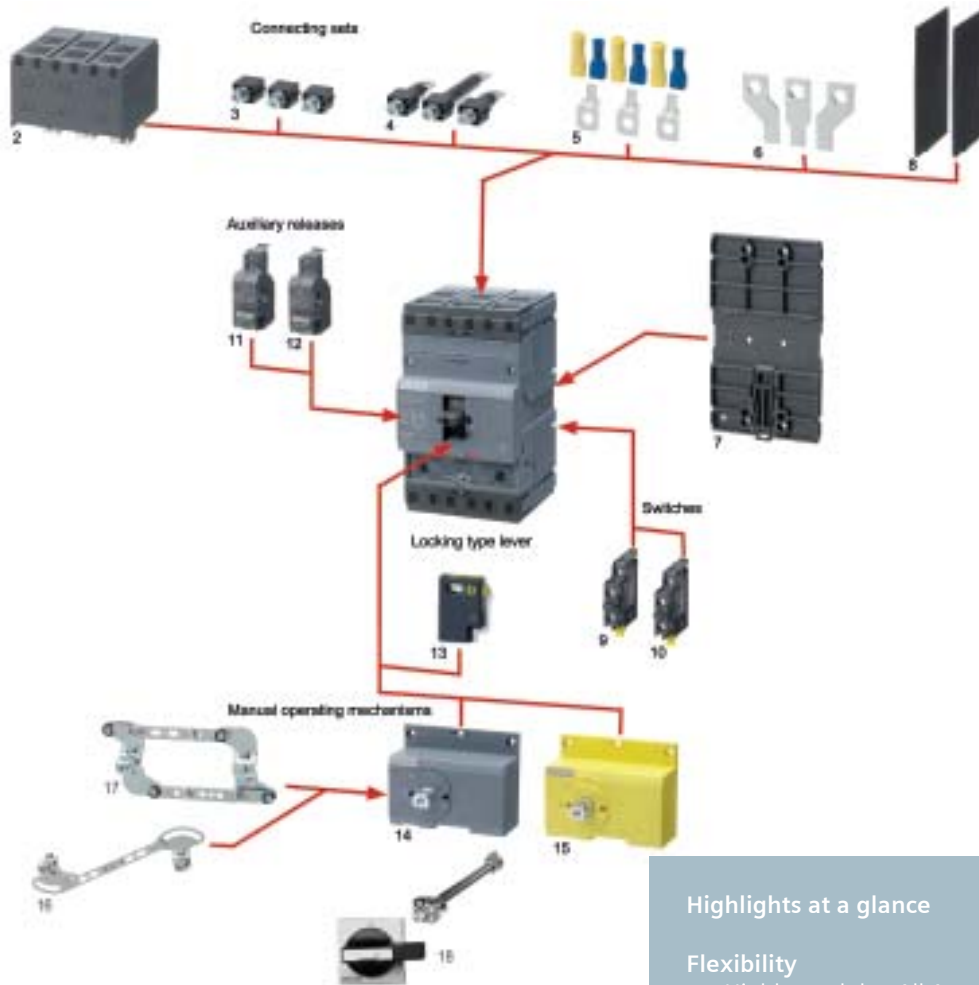


Highly efficient 3VT Circuit Breakers

Today, the economic success of industrial and infrastructure projects more than ever depends on the power supply – a key aspect for availability, performance and productivity, and a lever to boost overall economic efficiency. That's why choosing the right circuit breakers is so crucial to keep expenses down while, at the same time, optimize performance.

With the new 3VT circuit breakers, Siemens offers an economic solution for the entire power range from 10 A to 1,600 A – the smart solution to protect plants, capacitors, transformers, generators and motors. Both for infrastructure applications as well as in the area of industrial switchgear technology, 3VT circuit breakers

can be used as incoming and outgoing circuit breakers to distribute power in low-voltage switchgear. Available in several design variations, the modular circuit breakers are highly user-friendly, while also offering a high degree of safety and reliability.



1. 3VT1 circuit breaker
2. Circular conductor terminals with cover
3. Front connection
4. Rear connection
5. Auxiliary wiring terminals
6. Connecting busbars with increased pole spacing
7. Adapter to install on 35 mm DIN rail
8. Insulating barriers
9. Signaling switch
10. Auxiliary switch
11. Shunt trip unit
12. Undervoltage trip unit
13. Locking-type lever
14. Rotary mechanism
15. Rotary mechanism
16. Mechanical Interlocking
17. Mechanical parallel switching
18. Door mounted rotary handle

Highlights at a glance

Flexibility

- Highly modular. All Accessories are site mountable
- Available in 3- or 4-pole, fixed-mounted, plug-in or withdrawable design

Ease of use

- User-friendliness in planning, configuration, installation and operation
- Only a few components to cover the entire Spectrum from 16A to 1,600A

Safety and reliability

- Conforms to international standards and approvals
- Compatibility and safe coordination between products and systems
- Suitable for Isolation
- Current Limiting

3VT Moulded Case Circuit Breakers - compact, modular and safe up to 1,600 A

3VT moulded-case circuit breakers are an intelligent and cost-effective way to achieve high performance and availability. These 3VT circuit breakers feature a compact design to save space, thanks to the modularity of the circuit breakers ranging from 10 A to 1,600 A. You can choose either thermal-magnetic or microprocessor based trip units. In addition, the entire range has only three families of internal accessories. The result: maximum benefit, minimum expense.



Front operated Rotary Handle

Motorized operating Mechanism

MCCB Main Switching Unit

Microprocessor based Trip Units

Technical features

- Rated current range from 16 A to 1,600 A
- No De-rating up to 50°C
- Microprocessor based overcurrent trip units from 3VT2 onwards
- 3- and 4-pole versions
- Fixed-mounted, plug-in and draw-out versions
- Wide range of standard external accessories
- Conforms to the following standards: IEC 60947-1, IEC 60947-2, IEC 60947-3
- IS 13947-1, IS 13947-2, IS 13947-3
- Line-load reversible
- Special purpose trip unit for motor & generator protection
- Undervoltage & shunt trip coil with multiple voltage settings

Modular and site fittable trip unit: 3VT2 to 3VT5

- Wide range of microprocessor based trip units selectable as per application
- Trip units can be easily changed at site
- Adjustment range from 40% to 100% I_n
- A switch disconnecter block can be used in place of trip units as a switch disconnecter in MCCB design, and to have access to the complete range of MCCB accessories

Wide range of operating mechanisms:

- Rotary handles (front- or side-operated)
- Motor mechanism with or without cycle counter

3VT1..5 Current ranges of over-current releases and their possible setting

Frame Size	Rated Current I_n A	3VT1 (with fixed settings)		3VT1 (with adjustable settings)	
		Overload protection I_r A	Short Circuit protection I_i A	Overload protection I_r A	Short Circuit protection I_i A
3VT1	16			12,5 .. 16	160 .. 240
	20			16 .. 20	200 .. 300
	25			20 .. 25	250 .. 375
	32			25 .. 32	160 .. 320
	40	40	160	32 .. 40	200 .. 400
	50	50	200	40 .. 50	250 .. 500
	63	63	252	50 .. 63	315 .. 630
	80	80	320	63 .. 80	400 .. 800
	100	100	400	80 .. 100	500 .. 1000
	125	125	500	100 .. 125	625 .. 1250
160	160	640	125 .. 160	800 .. 1600	

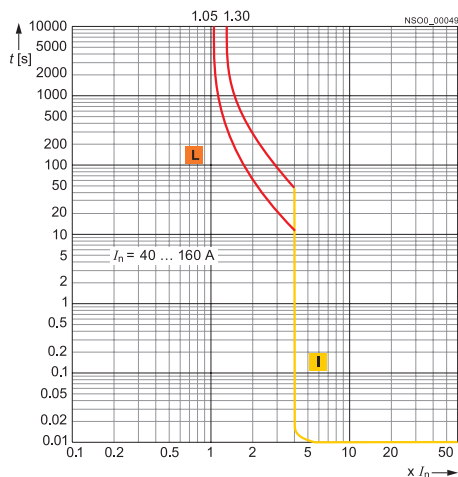
Frame Size	Rated Current I_n A	3VT2..5 (with fixed settings)		3VT2..5 (with adjustable settings)	
		Overload protection I_r A	Short Circuit protection I_i A	Overload protection I_r A	Short Circuit protection I_i A
3VT2	100			40 .. 100	4 & 8 x I_r
	160	160	640	63 .. 160	4 & 8 x I_r
	200	200	800		
	250	250	1000	100 .. 250	4 & 8 x I_r
3VT3	315	315	1260		
	400	400	1600	160 .. 400	4 & 12.5 x I_r
3VT4	630	630	2520	250 .. 630	4 & 12.5 x I_r
	800			315 .. 800	1.00 - 12kA
3VT5	1000			400 .. 1000	1.25 - 14kA
	1250			500 .. 1250	1.50 - 18kA
1600			630 .. 1600	2.00 - 20kA	

3VT1 Tripping characteristics

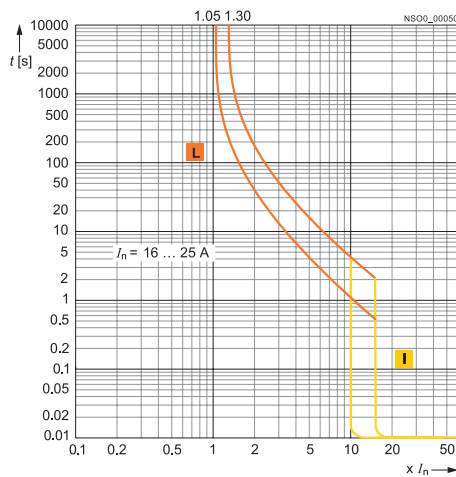
3VT1 circuit breakers with characteristic "L" have a fixed rated current value. The circuit breakers are with I_n values in a standardized current range from 40A to 160A Short-circuit releases are fixed at 4 x I_n .

3VT1 circuit breakers with characteristic "D" have the option of setting to a reduced current in a range of approximately 0.75 ... 1 I_n . The circuit breakers are with I_n values in a standardized current range from 16A to 160A. The short-circuit release is adjustable.

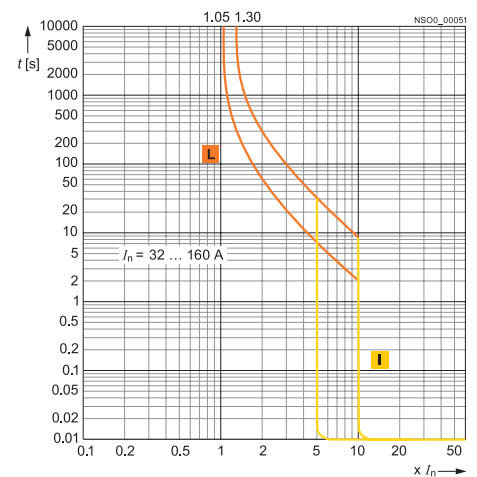
Characteristic „L“,
 $I_n = 40, 50, 63, 80, 100, 125, 160 A$



Characteristic „D“, $I_n = 16, 20, 25 A$



Characteristic „D“,
 $I_n = 32, 40, 50, 63, 80, 100, 125, 160 A$



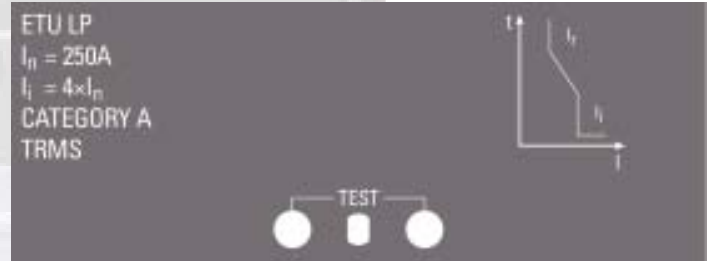
3VT2..5 Microprocessor based Trip Units

Overcurrent releases ETU LP - Lines

Protecting lines

The 3VT9...-6AB00 release is to be used with 3VT2..5 main switching units.

The release has a thermal memory. The rated currents of the releases are given by their type designations and correspond to a standardized series of currents. The short-circuit release is set at $4 \times I_n$. It is simple, because it does not require any adjustment. Therefore, it is intended for less complicated applications.

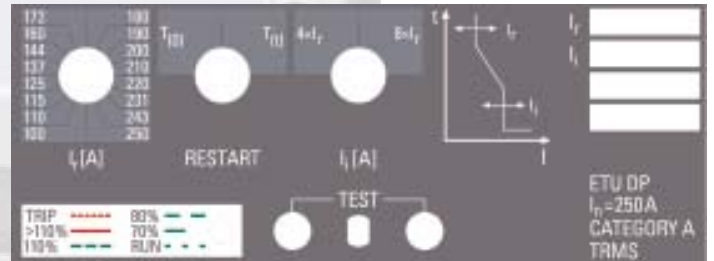


Overcurrent releases ETU DP - Distribution

Protecting lines and transformers

The 3VT9...-6AC00 release is to be used with 3VT2..5 main switching units.

Operation of the release is controlled by a microprocessor. The release is equipped with a thermal memory that can be disabled. After disabling the thermal memory, the thermal release remains active. The operational state 70% of I_r is signalled by an LED indicator that flashes green in a 1.5s interval. As the load grows, the blinking frequency increases. In case of a load larger than 110% of I_r , this LED will turn red and will begin to blink red just before tripping. The releases have tripping characteristics especially designed for practical purposes that provide for optimal exploitation of transformers up to $1.5 I_r$. The releases offer simple adjustment of the tripping characteristics.

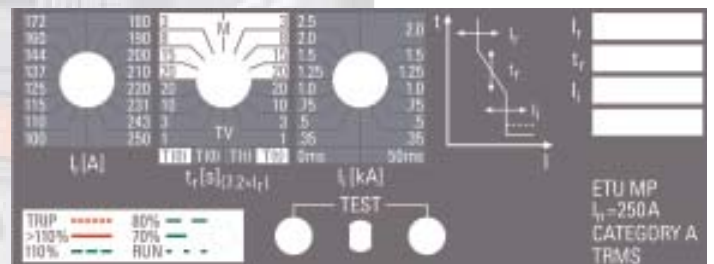


Overcurrent releases ETU MP - Motors

- Direct protection for motors and generators
- Possibility for protecting lines and transformers

The 3VT9...-6AP00 release is intended only for 3VT2..5 switching units.

The operation of the release is controlled by a microprocessor. The release is equipped with a thermal memory that can be disabled. After disabling the thermal memory, the thermal release remains active. When one or two phases fail (due to current greater than I_r in the remaining phases), in the M-characteristic mode, the switch will open with a 4 s delay. Another parameter for adjusting the release consists of the rated current and short-circuit tripping level. The time delay of the short-circuit release can be set to 0 or 50 ms. The operational state 70% of I_r is signalled by an LED indicator that flashes green in a 1.5 s interval. As the load grows, the blinking frequency increases. In case of a load larger than 110% of I_r , this LED will turn red and will begin to



blink red just before tripping. The releases have tripping characteristics especially designed for practical purposes that provide for optimal exploitation of transformers up to $1.5 I_r$. A total of 8 characteristics can be set on the release. Mode "M" provides 4 characteristics suitable for protecting motors and in mode "TV" are 4 characteristics for protecting transformers and lines. The shape of each characteristic can be changed using a selector switch.

RCD Module for 3VT1 (upto 160 A) MCCB

The RCD module is used along with the MCCB to provide protection to personnel & equipments from Earth leakage current due to insulation failures or due to direct contact.

Available in two version

- Fixed setting of 30mA
- Adjustable setting from 30mA to 3A with a time delay setting of 0-1sec

For more details please contact our sales office

Adjustable version is further equipped with:

- Test push-button
- Led indication for Alarm and trip
- Dielectric testing switch for electronic circuits (for dielectric test) to isolate the RCD electronic circuit during dielectric test (also available in fixed version)



Technical specifications

		3VT1	3VT2 N	3VT2 H	3VT3 N	3VT3 H	3VT4 H	3VT5 H
Frame size maximum rated current	A	160	250		630		1,000	1,600
Rated current I _n	A	16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160	100, 160, 200, 250		250, 315, 400, 500, 630		315, 630, 800, 1,000	630, 1,000, 1,250, 1,600
Rated insulation voltage U _i	V	690	690		690		690	690
Rated operational voltage U _e	V	max. 690 V AC	max. 690 V AC		max. 690 V AC		max. 690 V AC	max. 690 V AC
Number of poles		3/4	3/4		3/4		3	3
Rated Interrupting Capacity upto 415V/50Hz, I _{cu}	kA	25	36 65		36 65		65	55
Endurance	Opn cycles	20,000	30,000		20,000		10,000	10,000
Overcurrent release	Thermal-magnetic trip unit	•	–		–		–	–
	Microprocessor based trip unit	–	•		•		•	•
Outline Dimension	Width 3-pole	75 mm	105 mm		140 mm		210 mm	210 mm
	4-pole	100 mm	140 mm		185 mm		–	–
	Height	130 mm	225 mm		275 mm		494 mm	494 mm
	Depth	70 mm	117 mm		117 mm		157 mm	157 mm

Ordering Data

Sentron 3VT1 MCCB upto 160A for Line Protection *

Breaking capacity (I _{cu} , 415V AC, 50Hz)	Rated current (Amps)	Fixed Overload & Fixed Short Circuit Settings		Adjustable Overload & Adjustable Short Circuit Settings	
		3Pole	4Pole	3Pole	4Pole
25kA	16			3VT1701-2DC36-0AA0	3VT1701-2EC46-0AA0
	25			3VT1792-2DC36-0AA0	3VT1792-2EC46-0AA0
	32			3VT1703-2DC36-0AA0	3VT1703-2EC46-0AA0
	40	3VT1704-2DA36-0AA0	3VT1704-2EA46-0AA0	3VT1704-2DC36-0AA0	3VT1704-2EC46-0AA0
	63	3VT1706-2DA36-0AA0	3VT1706-2EA46-0AA0	3VT1706-2DC36-0AA0	3VT1706-2EC46-0AA0
	80	3VT1708-2DA36-0AA0	3VT1708-2EA46-0AA0	3VT1708-2DC36-0AA0	3VT1708-2EC46-0AA0
	100	3VT1710-2DA36-0AA0	3VT1710-2EA46-0AA0	3VT1710-2DC36-0AA0	3VT1710-2EC46-0AA0
	125	3VT1712-2DA36-0AA0	3VT1712-2EA46-0AA0	3VT1712-2DC36-0AA0	3VT1712-2EC46-0AA0
160	3VT1716-2DA36-0AA0	3VT1716-2EA46-0AA0	3VT1716-2DC36-0AA0	3VT1716-2EC46-0AA0	

* Please consult your nearest sales office for MCCBs suitable for Motor duty application.

Accessories for 3VT1

Description	3VT1
Door Operating mechanism	3VT9100-3HQ00
Spreaders	
Spreader links for 3pole	3VT9100-4ED30
Spreader links for 4Pole	3VT9100-4ED40
RCD Module	
RCD module with fixed setting - 30mA	3VT91165GA40
RCD module adjustable setting - 30mA-3A	3VT91165GB40
Accessories for RCD module	
Long bus bar connecting links - 4Pole	3VT9116-5GY42
Long bus bar connecting links - 3Pole	3VT9116-5GY32
Short bus bar connecting links - 4Pole	3VT9115-5GY41
Short bus bar connecting links - 3Pole	3VT9115-5GY31

Auxiliary & Alarm Switch	
Auxiliary Switch C/O Contact	3VT9100-2AB10
Alarm Switch C/O contact	3VT9100-2AH10
Shunt Release	
AC/DC 24/48V	3VT9100-1SC00
AC 100/230V, DC 110/220V	3VT9100-1SD00
AC 230/400V, DC	3VT9100-1SE00
Under Voltage Release	
AC230/400V, DC 220V	3VT9100-1UE00

Other accessories like Trip Units, Connection kits, Interlocking kits, Motorised mechanism, Plug-in & Draw-out assembly etc available on request

Ordering Data contd...



Sentron 3VT2 MCCB upto 250A

MCCB Main Switching Unit (w/o Trip Unit)

Breaking capacity (Icu, 415V AC, 50Hz)	Rated current A	Order No.
3Pole		
36kA	250	3VT2725-2AA36-0AA0
65kA	250	3VT2725-3AA36-0AA0
4Pole		
36kA	250	3VT2725-2AA46-0AA0
65kA	250	3VT2725-3AA46-0AA0

Microprocessor based Trip Unit (ETU)

(To be ordered along with the MCCB Main switching unit)

System Protection ETU LP, LI function Fixed O/L & Fixed S/C settings 3P / 4P		
	160	3VT9216-6AB00
	200	3VT9220-6AB00
	250	3VT9225-6AB00
System Protection ETU DP, LI function Adj O/L & Adj S/C Settings 3P / 4P		
	100	3VT9210-6AC00
	160	3VT9216-6AC00
	250	3VT9225-6AC00
Switch Disconnector Unit (w/o protection), 3P / 4P		
	250	3VT9225-6DT00


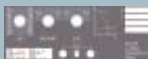
Sentron 3VT3 MCCB upto 630A

MCCB Main Switching Unit (w/o Trip Unit)

Breaking capacity (Icu, 415V AC, 50Hz)	Rated current A	Order No.
3Pole		
36kA	630	3VT3763-2AA36-0AA0
65kA	630	3VT3763-3AA36-0AA0
4Pole		
36kA	630	3VT3763-2AA46-0AA0
65kA	630	3VT3763-3AA46-0AA0

Microprocessor based Trip Unit (ETU)

(To be ordered along with the MCCB Main switching unit)

System Protection ETU LP, LI function Fixed O/L & Fixed S/C settings 3P / 4P		
	250	3VT9325-6AB00
	315	3VT9331-6AB00
	400	3VT9340-6AB00
	630	3VT9363-6AB00
System Protection ETU DP, LI function Adj O/L & Adj S/C Settings 3P / 4P		
	400	3VT9340-6AC00
	630	3VT9363-6AC00
Switch Disconnector Unit (w/o protection) 3P / 4P		
	630	3VT9363-6DT00

(Main Switching Unit & Trip Units supplied as separate Items & to be fitted at site for complete MCCB unit)

Accessories for 3VT2 & 3VT3

Description	3VT2	3VT3
Door Operating Mechanism		
Door Operating mechanism	3VT9300-3HQ00	3VT9300-3HQ00
Spreader Links		
Spreader links for 3pole	3VT92004EG30	3VT93004EG30
Spreader links for 4Pole	3VT92004EG400	3VT93004EG40

3VT2 & 3VT3	
Auxiliary & Alarm Switch	
NO	3VT9300-2AC10
NC	3VT9300-2AD10
1NO+1NC	3VT9300-2AF10
Shunt Release	
AC/DC 24/48V	3VT9300-1SC00
AC/DC 110V	3VT9300-1SD00
AC 230/400/500V, DC 220V	3VT9300-1SE00
UnderVoltage Release	
AC 230/400/500V, DC 220V	3VT9300-1UE00

Sentron 3VT4 MCCB upto 1000A & 3VT5 upto 1600A

3VT4..5 Main switching unit (w/o Trip Unit)

Breaking capacity (Icu, 415V AC, 50Hz)	Rated current A	Order No.
3VT4 / 3 pole / 65kA	1000	3VT4710-3AA30-0AA0
3VT5 / 3 pole / 55kA	1600	3VT5716-3AA30-0AA0

Microprocessor based Trip Unit (ETU)

(To be ordered along with the MCCB Main switching unit)

Adjustable O/L & Adjustable S/C Settings		
3VT4	800	3VT9480-6AC00
	1000	3VT9410-6AC00
3VT5	1250	3VT9512-6AC00
	1600	3VT9516-6AC00
Switch disconnector Unit (w/o protection)		
3VT4	1000	3VT9410-6DT00
3VT5	1600	3VT9516-6DT00

Accessories for 3VT4 & 3VT5

Door Operating Mechanism (3VT5)		3VT9500-3HQ00
Auxiliary / Alarm Switch	2NO+2NC	3VT9500-2AF10
Shunt Release	AC/DC 24V	3VT9500-1SF00
	AC/DC 110V	3VT9500-1SH00
	AC 230V, DC 220V	3VT9500-1SJ00
Unvoltage Release	AC 230V, DC 220V	3VT9500-1UJ00
	AC/DC 400V	3VT9500-1UK00
	AC/DC 500V	3VT9500-1UL00

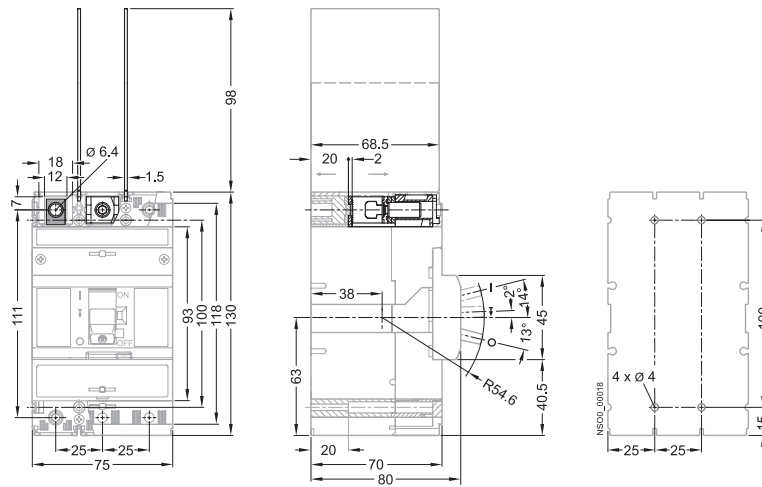
(Main Switching Unit & Trip Units supplied as separate items & to be fitted at site for complete MCCB unit)

Other accessories like Trip Units, Connection kits, Interlocking kits, Motorised mechanism, Plug-in & Draw-out assembly etc available on request

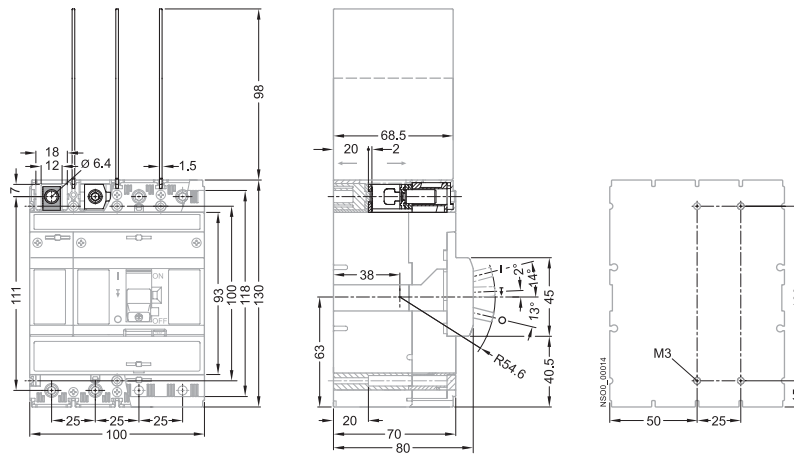
Dimension Drawings

3VT1 upto 160A, fixed mounted version

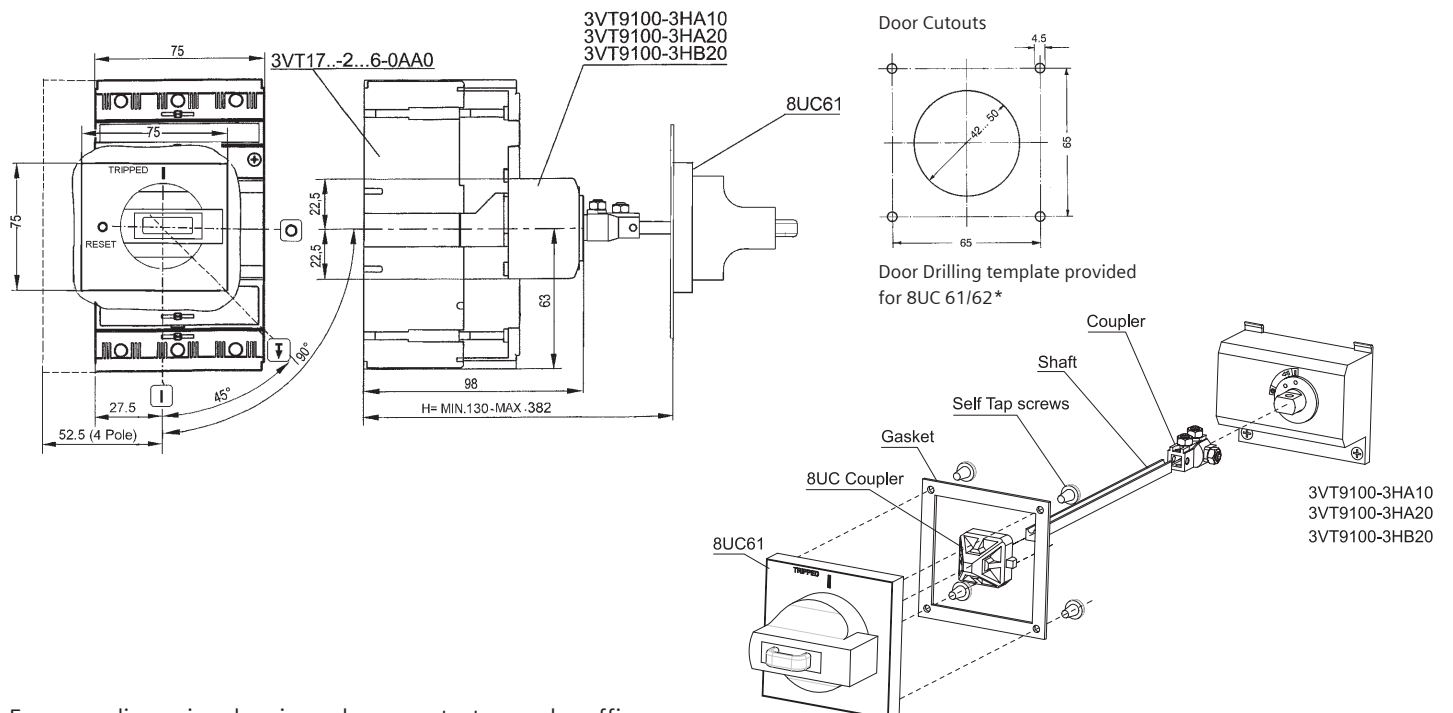
3-pole version



4-pole version



With door rotary handle

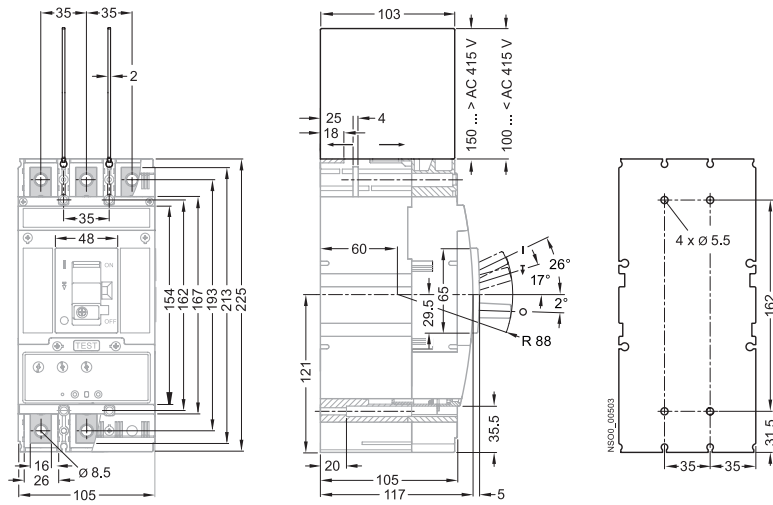


For more dimension drawings please contact our sales office

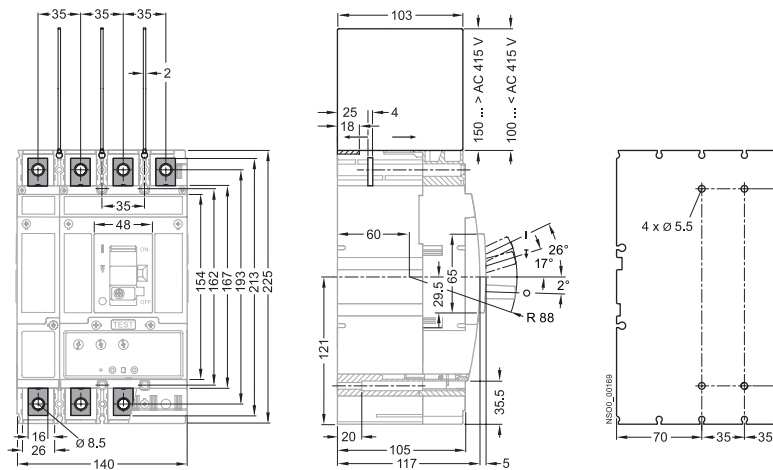
Dimension Drawings

3VT2 upto 250A, fixed mounted version

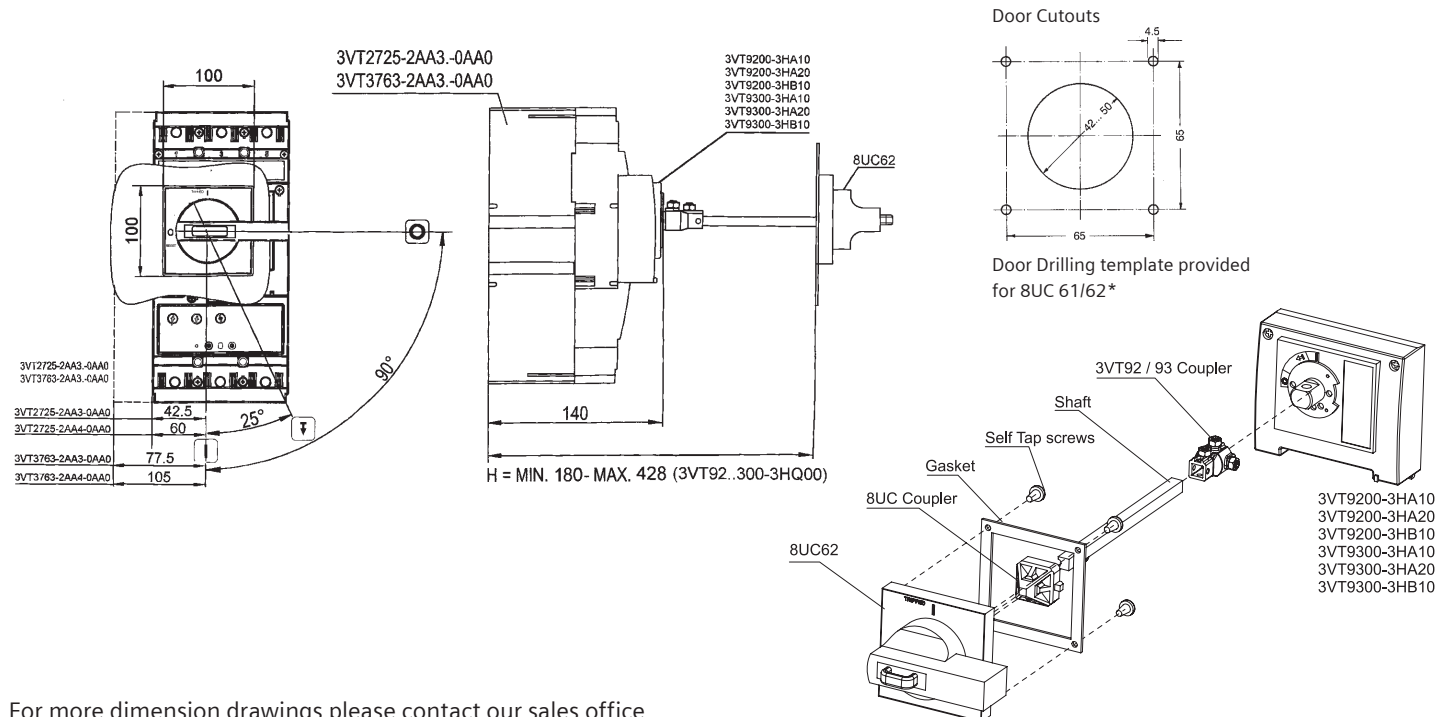
3-pole version



4-pole version



With door mounted rotary handle

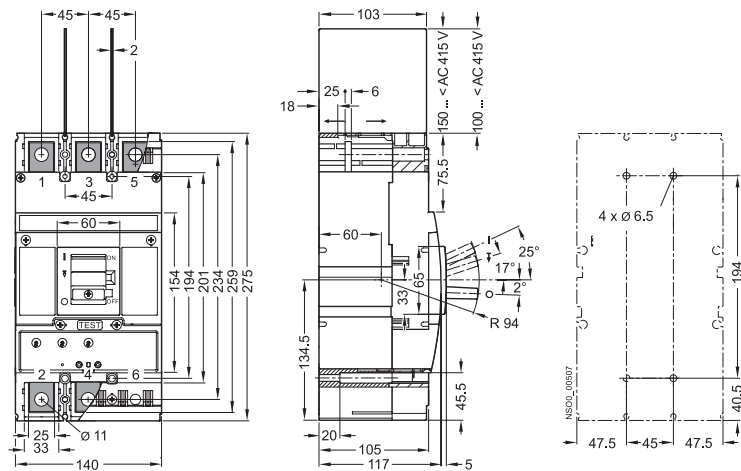


For more dimension drawings please contact our sales office

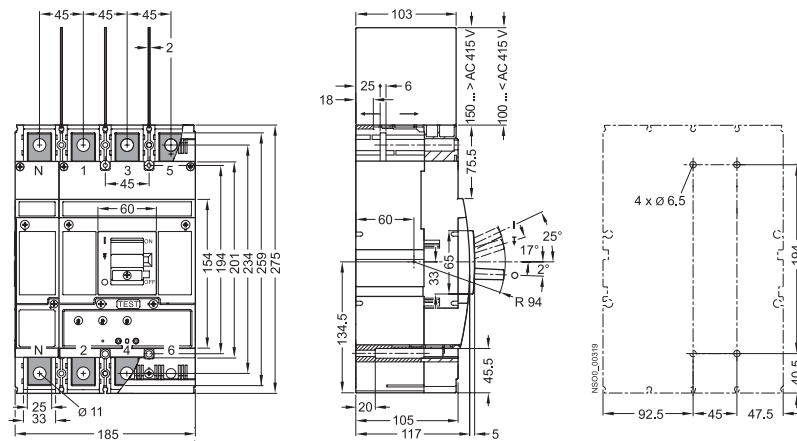
Dimension Drawings

3VT3 upto 630A, fixed mounted version

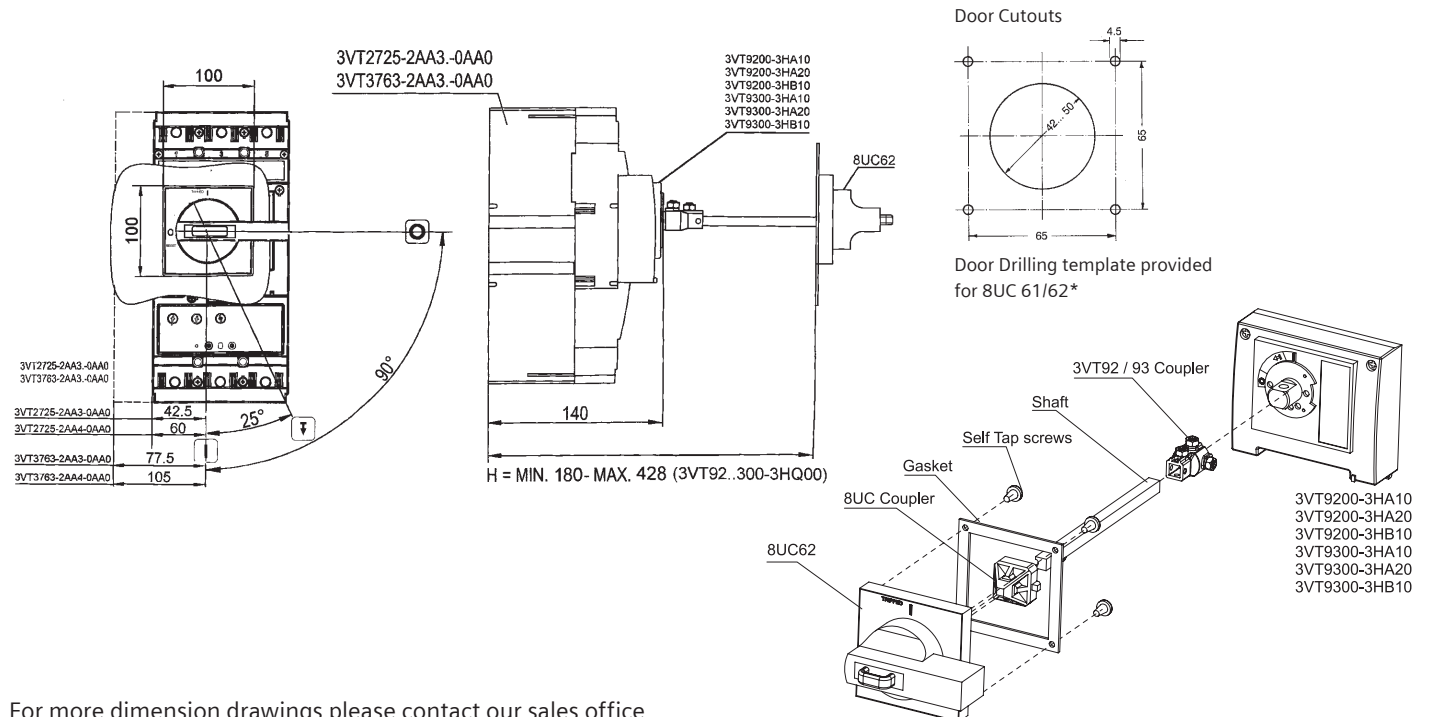
3-pole version



4-pole version



With door mounted rotary handle

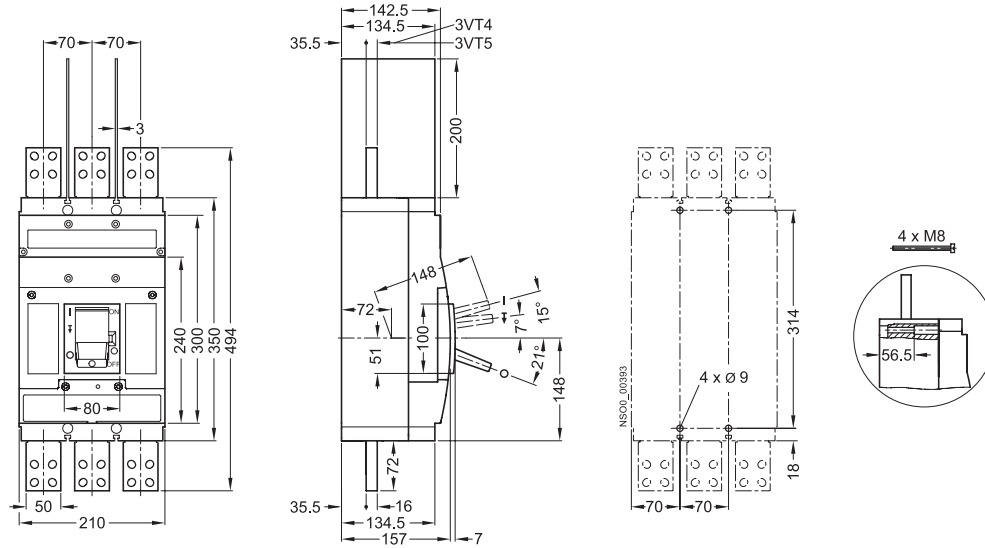


For more dimension drawings please contact our sales office

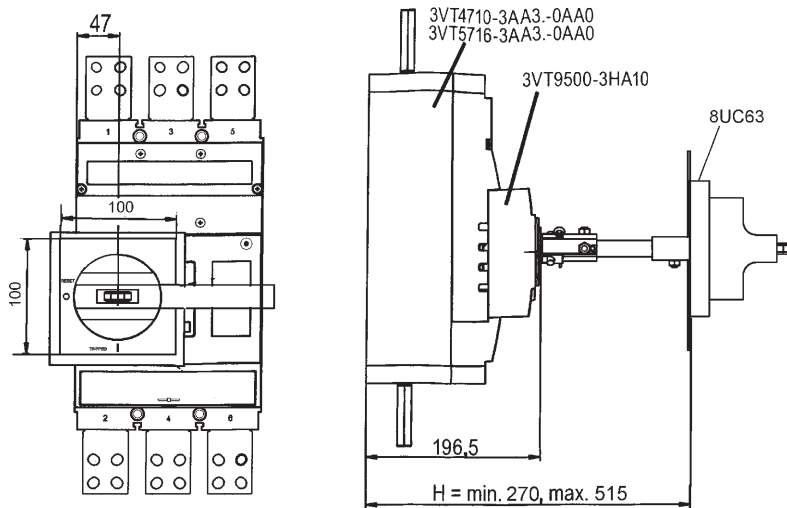
Dimension Drawings

3VT4 upto 1000A & 3VT5 upto 1600A, fixed mounted version

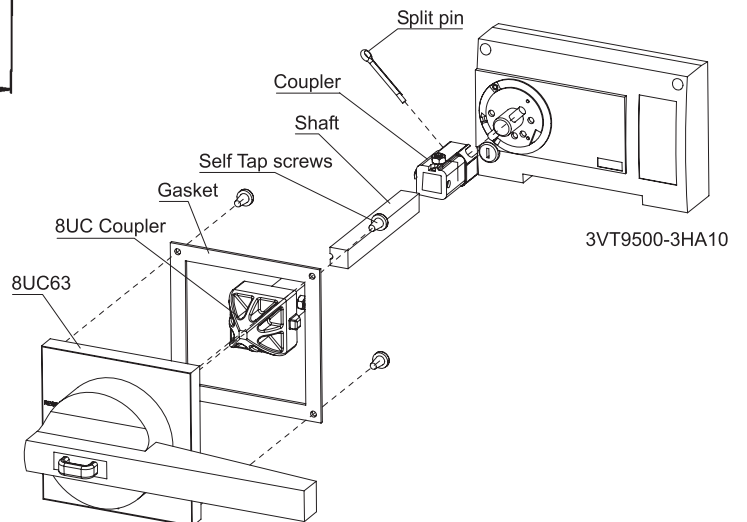
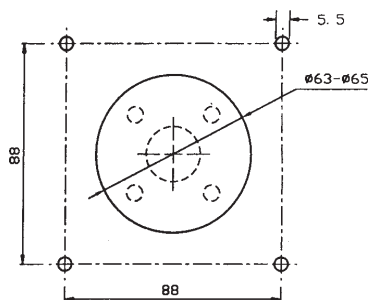
3-pole version



With door mounted rotary handle



Door Cutouts



For more dimension drawings please contact our sales office

