

Low Voltage

# EasyPact CVS

Moulded-case circuit breakers  
from 100 to 800 A



Catalogue  
2011

- > Do you strain to find a high quality circuit breaker that is simple, flexible, and safe?
- > Have tight project budgets restricted you from choosing the best technology products?
- > Do you need the reach, support and accessibility of a global leader, with the value of a local supplier?



Buildings



Industry



Energy &  
Infrastructure



Residential



Compact CVS has helped our customers with a value system focused on **Safety , Simplicity & Reliability.**

Schneider Electric has always believed in customer satisfaction and ensures that we renovate our offers to meet the changing needs of our customers.

Now Schneider Electric is happy to announce that

**Compact CVS** is now **EasyPact CVS**  
**+ More Safe , Simple & Reliable**

A global environment friendly range from Schneider Electric.

# EasyPact CVS

brings more functionalities, options and features which make it more



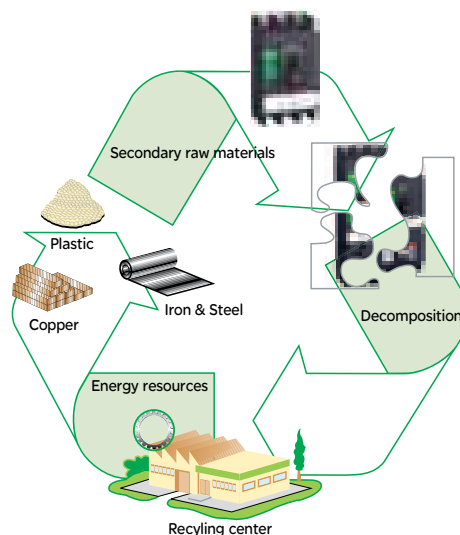


## Environmentally responsible

■ EasyPact CVS is part of the Schneider Electric energy efficiency approach. Designed for easy disassembly and recycling at end of life, EasyPact CVS complies with environmental directives RoHS\* and WEEE\*\*, and with ISO 14001 standards, thanks to non-polluting factories.

Schneider Electric fully takes into account environmental requirements, starting right from the design phase of every product through to the end of its service life:

- the materials used for EasyPact CVS are not potentially dangerous to the environment
- the production facilities are non-polluting in compliance with the ISO 14001 standard
- the energy dissipated per pole is low, making energy losses insignificant
- the materials are marked to facilitate sorting for recycling at the end of product service life.



EasyPact CVS moulded case circuit breakers and accessories can be recycled and reused optimally.

\* RoHS = Restriction of Hazardous Substances

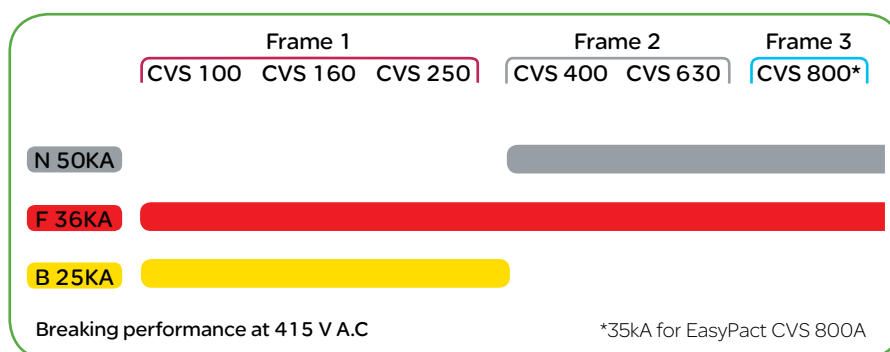
\*\* WEEE = Waste Electrical and Electronic Equipment

Gain peace of mind  
and optimized cost  
for every installation



# EasyPact CVS

from 100 to 800A



EasyPact CVS 100 - 800A Adjustable version

- Various breaking capacities level are available as per the need of electrical distribution network 25/36/50kA.
- Available in 3P and 4P Variants.
- Entire range is  $I_{cs}=100\% I_{cu}$ .



Safe



Reliable



Simple



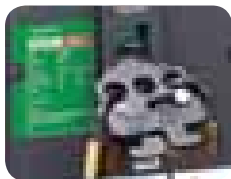
## EasyPact CVS is...Safe

### Isolation

- EasyPact CVS circuit breakers are suitable for Isolation\* as defined in IEC standards 60947-2. The aim of isolation is to separate a circuit or apparatus from the remainder of a system which is energized in order the personnel may carry out work on the isolated part with complete safety.
- MCCB locking with external pad locks\* enables user to isolate and undertake maintenance with utmost safety.

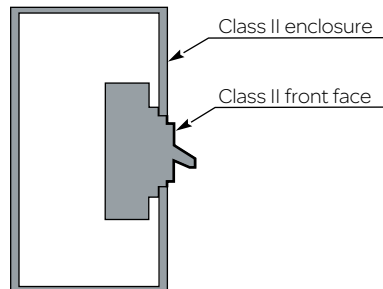


Isolation



### Class II front Face

- All EasyPact CVS\* MCCBs are class II Front face devices, they may be installed through the door of class II switchboards without downgrading the switchboard insulation. Installation requires no special operation, even when the Circuit Breaker is equipped with a rotary handle.



Class II panel with circuit breaker having a class II front face



### Locking in OFF position

- Key locks enables to lock\* the breaker in OFF position ensuring safety and better control on installation.
- It also helps in interlocking multiple circuit breakers in an installation.



\* 100 to 630 A





# EasyPact CVS is...Reliable



## Conforms to IEC 60947-2 for circuit breaker

- Tested at renown international laboratories like KEMA
- Complete range with  $I_{cs} = 100\% I_{cu}$



## High electrical & Mechanical endurance

- 30000 mechanical operations for 100A
- 12000 electrical operations for 100A



## Reliable accessories

- Continuous rated shunt coils
- Multifunctional Aux./Alarm contact
- Unique electrical fault trip indication (SDE)

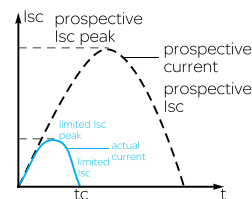


## EasyPact CVS offer protection for human as well as Electrical installation

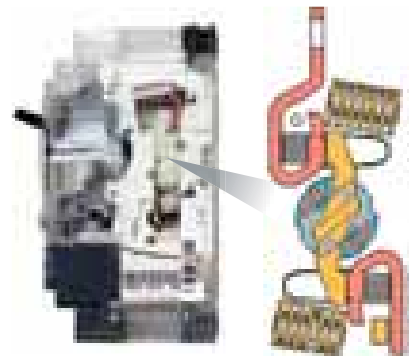
- Earth leakage protection through Vigi Module to protect human against leakage current
- Earth Fault protection (UMGFP) to protect Electrical distribution network against fire

## Fault current limitation technology

- EasyPact CVS Double break\* mechanism ensures high fault current limitation
  - Reduces thermal stresses on the electrical distribution network
  - Increases the life of cables and installation



Current limitation technology



EasyPact Double break Roto mechanism

\* 100 to 630 A



# EasyPact CVS is...Simple

## Only three frame sizes

Frame - I	100 - 250 A
Frame - II	400 - 630A
Frame - III	800A

## Line load reversibility for entire EasyPact CVS range System upgradeability

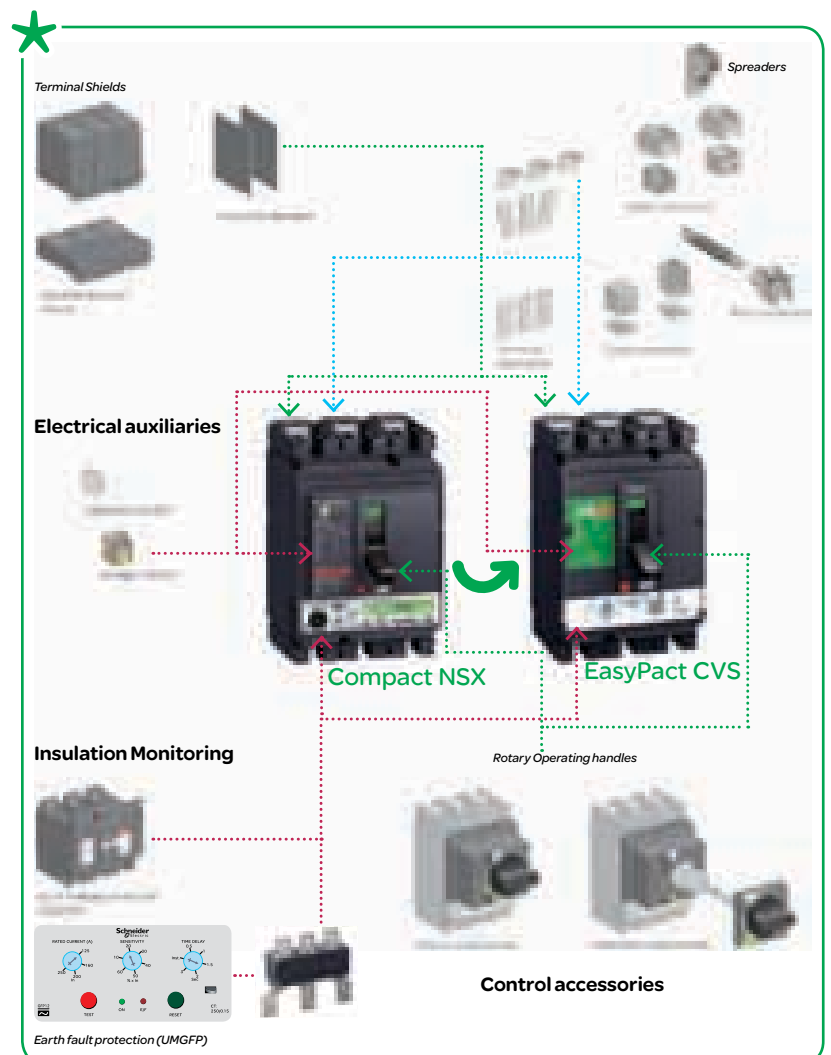
- Compact NSX/EasyPact CVS upto 630A have the same foot print & mounting dimensions, helps easy retrofitting and system upgradeability.

\* Auxiliaries and accessories are common for MCCBs upto 630A.

## CVS Stands for Compact Value System

EasyPact CVS/Compact CVS and Compact NS/NSX MCCBs share the same value system.

Schneider Electric has a rich experience in MCCBs with more than 25 million circuit breakers installed base world wide (more than 100 countries).



# EasyPact CVS stands for customer value

EasyPact CVS 100 to 630 A



## Panel builders

- Only two frame sizes up to 630A
- Common accessories for complete range (ON/OFF/Trip Auxiliaries/Shunt/UV etc)
- Line load reversibility for entire range
- Suitable for class II switchboards



## End Users

- Isolation as a standard feature enhances safety
- Excellent current limiting capability reduces stresses on cables, busbars and loads
- Continuous rated accessories increase system reliability
- Modular earth leakage and earth fault protection ensure human/installation protection



## OEMs

- High endurance's and maintenance free operation assure continuous performance of machines
- Unique common accessories help standardisation of components



## Contractors

- Sufficient pole pitch helps to terminate Copper and Aluminum busbars or cables
- Easy availability of the product due to less number of frame size
- Designed to perform in demanding applications

A technician in a light blue uniform is working on a rack of EasyPact CVS LV circuit breakers. The technician is using a screwdriver to adjust a component on the breaker. The rack is filled with several units, each with a green indicator light. The background shows more racks in a control room or industrial setting.

# The easy choice for quality and value

## EasyPact CVS

LV circuit breakers from 100 to 800A

EasyPact CVS

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Additional characteristics D-1

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Catalogue numbers E-1

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# Functions and characteristics

## EasyPact CVS

## Functions and characteristics

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EasyPact CVS

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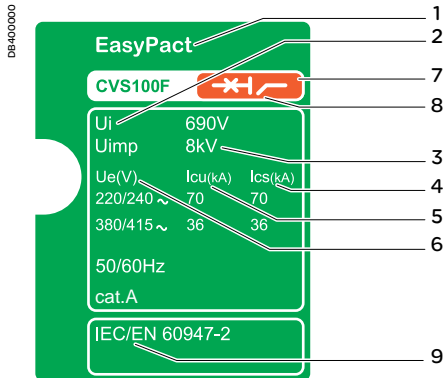
*Additional characteristics*

D-1

*Catalogue numbers*

E-1

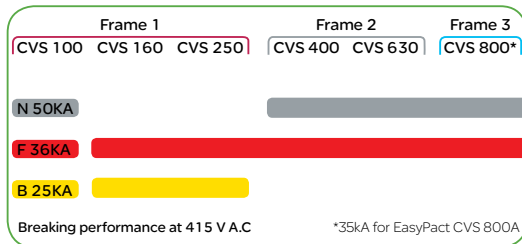




Standardised characteristics indicated on the rating plate:

- 1 Type of device: frame size and breaking capacity class
- 2  $U_i$ : rated insulation voltage.
- 3  $U_{imp}$ : rated impulse withstand voltage.
- 4  $I_{cs}$ : service breaking capacity.
- 5  $I_{cu}$ : ultimate breaking capacity for various values of the rated operational voltage  $U_e$
- 6  $U_e$ : operational voltage.
- 7 Colour label indicating the breaking capacity class.
- 8 Suitable for isolation symbol.
- 9 Reference standard.

**Note:** when the circuit breaker is equipped with an extended rotary handle, the door must be opened to access the rating plate.



### Compliance with standards

EasyPact CVS circuit breakers and auxiliaries comply with the following international recommendations:

- IEC 60947-1: general rules
- IEC 60947-2: circuit breakers
- IEC 60947-3: switch-disconnectors

### Pollution degree

EasyPact CVS circuit breakers are certified for operation in pollution-degree III environments as defined by IEC standards 60947-1 and 60664-1 (industrial environments).

### Climatic withstand

EasyPact CVS circuit breakers have successfully passed the tests defined by the following standards for extreme atmospheric conditions:

- IEC 60068-2-1: dry cold (-55°C)
- IEC 60068-2-2: dry heat (+85°C)
- IEC 60068-2-30: damp heat (95 % relative humidity at 55°C)
- IEC 60068-2-52 severity level 2: salt mist.

### Environment

EasyPact CVS respects the European environment directive EC/2002/95 concerning the restriction of hazardous substances (RoHS).

All EasyPact CVS production sites have set up an ISO 14001 certified environmental management system.

### Ambient temperature

EasyPact CVS circuit breakers can be used between -25°C and +70°C. For temperatures higher than 40°C (65°C for circuit breakers used to protect motor feeders), devices must be derated ([see page B-2](#)).

- Circuit breakers should be put into service under normal ambient, operating-temperature conditions. Exceptionally, the circuit breaker can be put into service when the ambient temperature is between -35°C and -25°C.
- The permissible storage-temperature range for EasyPact CVS circuit breakers in the original packing is -50°C and +85°C.

### Suitable for isolation with positive contact indication

All EasyPact CVS circuit breakers are suitable for isolation as defined in IEC standard 60947-2:

- The isolation position corresponds to the O (OFF) position.
  - The operating handle cannot indicate the OFF position unless the contacts are effectively open.
  - Padlocks cannot be installed unless the contacts are open.
- Installation of a rotary handle does not alter the reliability of the position-indication system.

The isolation function is certified by tests guaranteeing:

- The mechanical reliability of the position-indication system
  - The absence of leakage currents
  - Over voltage withstand capacity between upstream and downstream connections.
- The tripped position does not ensure isolation with positive contact indication. Only the OFF position guarantees isolation.

### Installation in class II switchboards

All EasyPact CVS circuit breakers are class II front face devices. They can be installed through the door of class II switchboards (as per IEC standards 61140 and 60664-1) without downgrading switchboard insulation. Installation requires no special operations, even when the circuit breaker is equipped with a rotary handle.

### Degree of protection

The following indications are in accordance with standards IEC 60529 (IP degree of protection) and IEC 62262 (IK protection against external mechanical impacts).

Bare circuit breaker:

- with toggle: IP40, IK07 front face
- with extended rotary handle: IP 55, IK08

Circuit breaker installed in a switchboard:

- with toggle: IP40, IK07 front face
- with extended rotary handle: IP 55, IK08

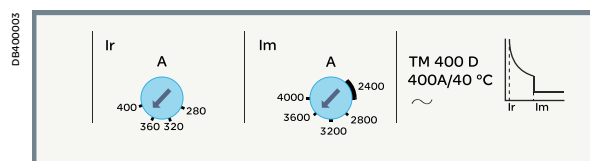


# Protection of distribution systems

## TM-D thermal-magnetic trip units

TM-D thermal-magnetic trip units can be used on EasyPact CVS100-630 circuit breakers with performance levels B/F/N.

### TM-D thermal-magnetic trip units



### Protection

TM-D trip units are used mainly in electrical distribution applications for protection of cables supplied by transformers.

### Thermal protection (Ir)

Thermal protection operates according to:

- Ir that can be adjusted in amps from 0.7 to 1 times the rating of the trip unit (16 A to 250 A), corresponding to settings from 11 to 250 A for the range of trip units
- a non-adjustable time delay.

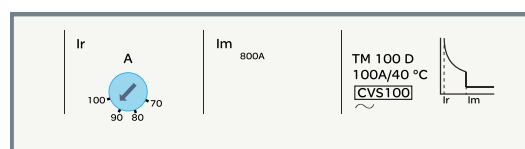
### Magnetic protection (Im)

Short-circuit protection with a fixed or adjustable pick-up Im that initiates instantaneous tripping if exceeded.

- TM-D: fixed pick-up, Im, for 16 to 250 A ratings and adjustable from 5 to 10 x In for 400 A ratings, 4 to 8 x In for 600 A rating.

### Protection versions

- 3-pole:
  - 3P 3D: 3-pole frame (3P) with detection on all 3 poles (3D)
  - 4-pole:
    - 4P 3D: 4-pole frame (4P) with detection on 3 poles (3D).
    - 4P 4D: 4-pole frame (4P) with detection on all 4 poles (same threshold for phases and neutral).



Thermal-magnetic trip units		TM16D to 250D											TM320D to 630D					
Ratings (A)	In at 40 °C <sup>(1)</sup>	16	25	32	40	50	63	80	100	125	160	200	250	320	400	500	630*	
Circuit breaker	CVS100	■	■	■	■	■	■	■	■	-	-	-	-					
	CVS160	-	-	-	-	-	-	-	■	■	■	-	-					
	CVS250	-	-	-	-	-	-	-	-	-	-	■	■	■				
	CVS400														■	■	-	-
	CVS630														-	-	■	■
<b>Magnetic protection</b>																		
Pick-up (A)	Im	fixed											adjustable					
accuracy ± 120 %	CVS100	190	300	400	500	500	500	640	800									
	CVS160/250								800	1250	1250	2000	2500					
	CVS400													5 to 10 x In				
	CVS630													4 to 8 x In				
<b>Thermal protection</b>																		
Pick-up (A)	Ir = In x ...	adjustable in amps from 0.7 to 1 x In																
tripping between 1.05 and 1.20 Ir																		
<b>Neutral protection</b>																		
Unprotected neutral	4P 3D	no detection																
Fully protected neutral	4P 4D	1 x Ir																

(1) For temperatures greater than 40°C, the thermal protection characteristics are modified. See the temperature derating table on page B-2.  
\* 630 A @ 30°C

**Note:** All the trip units have a transparent lead-sealable cover that protects access to the adjustment dials.

**ETS 2.3 electronic trip unit**



**Protection**

The protection functions can be set using the adjustment dials.

**Overload protection**

Long-time protection with an adjustable threshold and fixed tripping delay:

- Ir base setting (6-position dial from 0.5 to 1)

**Short-circuit protection**

**Short-time and instantaneous protection:**

- short-time protection with an adjustable pick-up and fixed tripping delay
- instantaneous protection with fixed pick-up.

**Protection of the fourth pole**

On 4-pole circuit breakers, neutral protection is set using a three-position switch to 4P 3D (neutral unprotected), 4P 3D + N/2 (neutral protection at 0.5 In) or 4P 4D (neutral protection at In).

Trip units		ETS 2.3	
Ratings (A) of circuit breaker	In 20 to 70 °C	400	630
Circuit breaker	CVS400 F/N CVS630 F/N	■	- ■
<b>Overload protection (Long time)</b>			
Current setting	Ir = In x ...	0.5...1 adj., 6 settings	
Time delay (s) (min...max.)	at 1.5 x Ir at 6 x Ir at 7.2 Ir	fixed 90...180 5...7.5 3.2...5.0	
<b>Short-circuit protection (Short time)</b>			
Pick-up (A) accuracy ± 15 %	Isd = Ir x ...	2... 10 adj, 8 settings	
Time delay (ms)	max. resettable time max. break time	fixed ≤ 40 ≤ 60	
<b>Short-circuit protection (instantaneous)</b>			
Pick-up (A)	Ii = In x ...	11	
<b>Protection of the fourth pole</b>			
Neutral unprotected	4P 3D	no protection	
Neutral protection at 0.5 In	4P 3D + N/2	0.5 x Ir	
Neutral protection at In	4P 4D	1 x Ir	
<b>Thermal memory</b>			
	CVS400 F/N CVS630 F/N	Yes Yes	

**Test equipment for ETS electronic trip unit**

**Mini test kit**

The mini test kit is a portable unit requiring no external power supply, used to check operation of the electronic trip unit and circuit breaker tripping. It connects to the test connector on the front of the circuit breaker. Required power source: five 9 V alkaline batteries (not supplied).

**Portable test kit**

The portable test kit is used to check all aspects of the protection functions:

- long time protection
- short time protection
- instantaneous protection
- earth-fault protection.

Required power source: 110 or 220 V AC, 50/60 Hz.

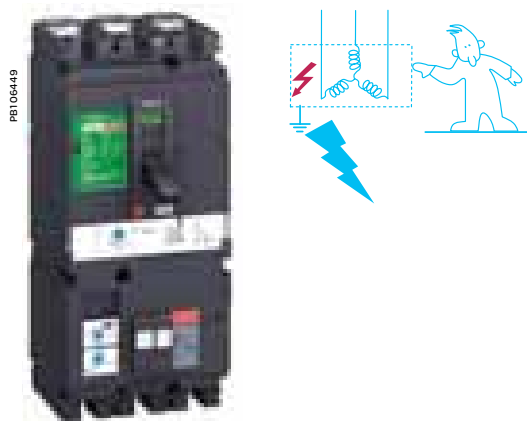
**Spare test plug and wiring kit**

A spare test plug and wiring kit are available for this offer.

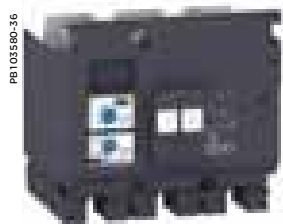
# Earth-leakage protection

Add-on protection against insulation faults using a Vigi module

A Vigi module can be added to any three or four-pole CVS100 to 630 circuit breaker to form a Vigi CVS.



Vigi CVS100 to 630



PB 1 03 580-36

## Circuit breaker with add-on Vigi module (Vigi CVS)

- For general characteristics of circuit breakers, see pages A-2 and A-3.
- Add-on Vigi modules: Earth-leakage protection is achieved by installing a Vigi module (characteristics and selection criteria on next page) directly on the circuit breaker terminals. It directly actuates the trip unit (magnetic, thermal-magnetic or ETS).

## Vigi CVS100 to 630 circuit breakers with earth-leakage protection

Addition of the Vigi module does not alter circuit-breaker characteristics:

- compliance with standards
- degree of protection, class II front-face insulation
- positive contact indication
- electrical characteristics
- trip-unit characteristics
- installation and connection modes
- indication, measurement and control auxiliaries
- installation and connection accessories.

Dimensions and weights		Vigi CVS100/160/250	Vigi CVS400/630
Dimensions	3-pole	105 x 236 x 86	135 x 355 x 110
W x H x D (mm)	4-pole	140 x 236 x 86	180 x 355 x 110
Weight (kg)	3-pole	2.5	8.8
	4-pole	3.2	10.8

## Vigi earth-leakage protection modules

### Compliance with standards

- IEC 60947-2, annex B.
- Decree dated 14 November 1988 (for France).
- IEC 60755, class A, immunity to DC components up to 6 mA
- operation down to -25 °C as per VDE 664.

### Vigi module selection

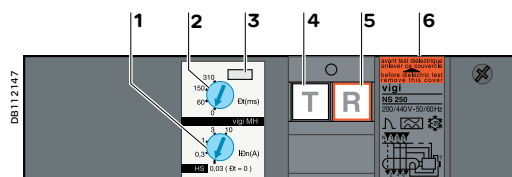
Type	Vigi ME	Vigi MH	Vigi MB
Number of poles	3, 4 <sup>(1)</sup>	3, 4 <sup>(1)</sup>	3, 4 <sup>(1)</sup>
CVS100	■	■	-
CVS160	■	■	-
CVS250	-	■	-
CVS400	-	-	■
CVS630	-	-	■

Protection characteristics			
Sensitivity I $\Delta$ n (A)	fixed	adjustable 0.3 0.03 - 0.3 - 1 - 3 - 10	adjustable 0.3 - 1 - 3 - 10 - 30
Time delay	fixed	adjustable	adjustable
Intentional delay (ms)	< 40	0 - 60 <sup>(2)</sup> - 150 <sup>(2)</sup> - 310 <sup>(2)</sup>	0 - 60 - 150 - 310
Max. break time (ms)	< 40	< 40 < 140 < 300 < 800	< 40 < 140 < 300 < 800
Rated voltage V AC 50/60 Hz	200...440	200... 440 - 440...550	200...440 - 440...550

- (1) Vigi 3P modules may also be used on 3P circuit breakers used for two-phase protection.  
 (2) If the sensitivity is set to 30 mA, there is no time delay, whatever the time-delay setting.

### Operating safety

The Vigi module is a user safety device. It must be tested at regular intervals (every 6 months) via the test button.



- 1 Sensitivity setting
- 2 Time-delay setting (for selective earth-leakage protection).
- 3 Lead-seal fixture for controlled access to settings.
- 4 Test button simulating an earth-fault for regular checks on the tripping function
- 5 Reset button (reset required after earth-fault tripping).
- 6 Rating plate

DB 1 12 147



Protect electrical distribution network against fire

EasyPact CVS Ground Fault Protection is meant for human safety and to prevent fires due to low level faults resulting from a deterioration of electrical insulation or high resistive faults.

### Ground Fault Protection should be installed in the following installations

- Building housing inflammable or explosive material
- Line voltage to ground exceeds 150V AC
- Electrical equipments like welding sets
- Electrical equipments used in close Proximity of water/other liquids and metallic object
- Cable protection when distance between source and load is high

### Selection for Ground Fault Protection is based on following:

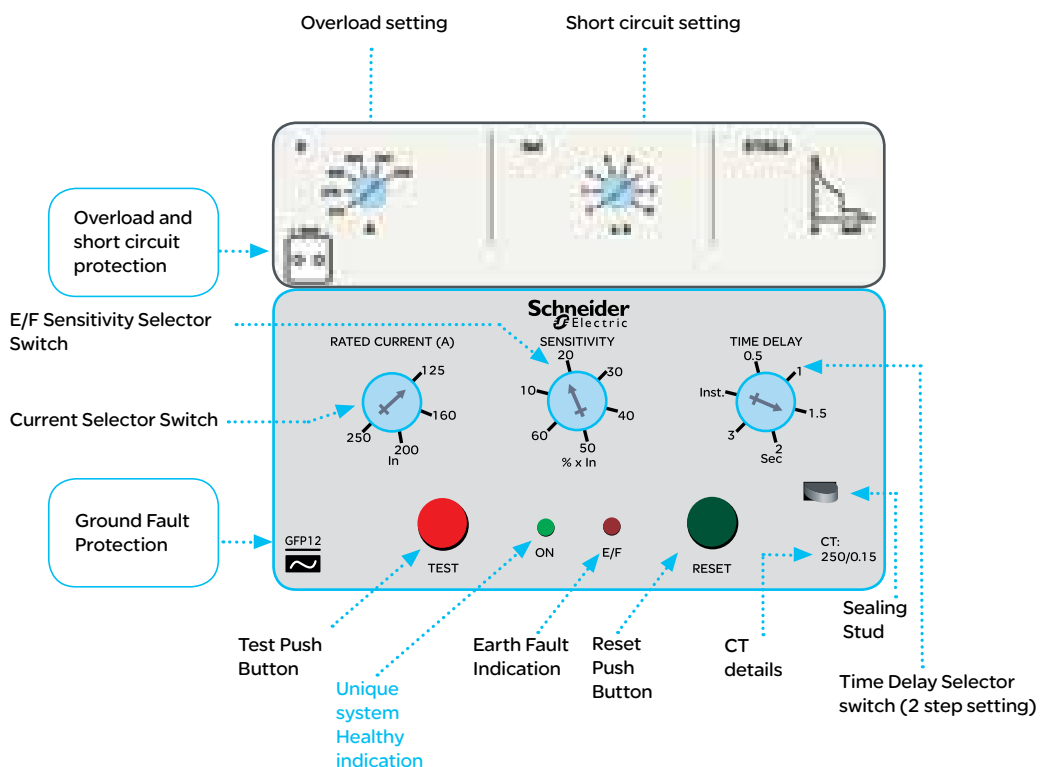
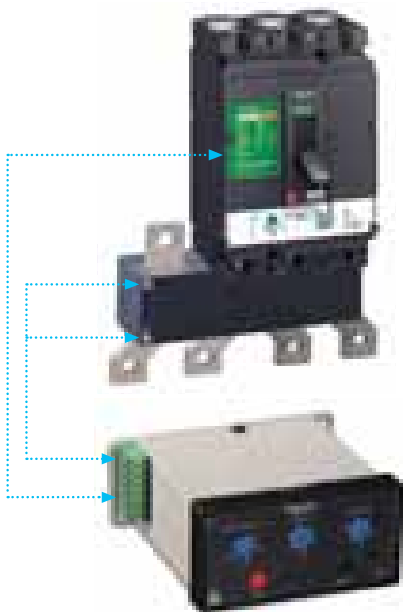
- Current sensitivity required
- Rated voltage, Rated current and frequency
- Operation time
- Detection device and protection device co-ordination

### Unique Modular Ground Fault (UMGFP) system is suitable for EasyPact CVS / Compact NSX MCCBs

- Adjustable earth fault sensitivity selection 10 to 60%
- Adjustable time delay Inst / 0.5 - 3 Sec.
- System healthiness check through LED indication
- Individual fault indication for OL, SC, EF when used with Compact NSX (Optional)
- Individual fault indication for OL/SC, EF when used with EasyPact CVS (Optional)
- Test facility to check healthiness of earth fault protection system without tripping MCCB
- Suitable for 3P3W & 3P4W electrical distribution network

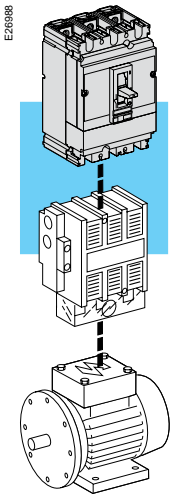
### Ground Fault Protection relay setting details

Relay	Ir selection in RM	Sensitivity selection	Time delay selection
GFP11	32, 40, 50, 63, 80, 100	10 - 60% of In	0.5 to 3 Sec. /Instantaneous
GFP12	125, 160, 200, 250	10 - 60% of In	0.5 to 3 Sec. /Instantaneous
GFP13	400, 630	10 - 60% of In	0.5 to 3 Sec. /Instantaneous
GFP14	800	10 - 60% of In	0.5 to 3 Sec. /Instantaneous



# Motor protection

## MA instantaneous trip units

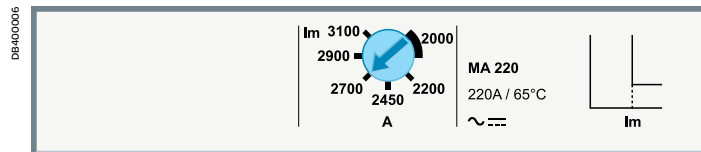


CVS100 to 630 circuit breakers, equipped with an MA magnetic trip unit with adjustable thresholds, offer:

- short-circuit protection
- suitability for isolation.

CVS100 to 630 circuit breakers with trip unit are supplied ready-assembled.

### MA magnetic trip units for EasyPact CVS100-630A



Circuit breakers with an MA trip unit are combined with a thermal relay and a contactor or a starter.

### Protection

#### Magnetic protection (Im)

Short-circuit protection with an adjustable pick-up  $I_m$  that initiates instantaneous tripping if exceeded.

■  $I_m = I_n \times \dots$  is set on an adjustment dial in multiples of the rating:

- 6 to 14 x  $I_n$  (2.5 to 100 A ratings)
- 9 to 14 x  $I_n$  (150 to 220 A ratings)
- 6 to 13 x  $I_n$  (320 to 500 A ratings)

#### Protection version

- 3-pole (3P 3D): 3-pole frame (3P) equipped with detection on all 3 poles (3D).

### Motor protection up to 250 kW

Motor protection rating (kW)			
CVS 100/160/250		1.1...110	
CVS 400/630		18.5...250	
380/415V N	N	-	50

MA trip units											
Ratings (A)	$I_n$ at 65 °C	2.5	6.3	12.5	25	50	100	150	220	320	500
Circuit breaker	CVS100	■	■	■	■	■	■	-	-	-	-
	CVS160	-	-	-	-	-	■	■	-	-	-
	CVS250	-	-	-	-	-	-	■	■	-	-
	CVS400	-	-	-	-	-	-	-	-	■	-
	CVS630	-	-	-	-	-	-	-	-	-	■
Short-circuit protection (magnetic)											
Pick-up (A)	$I_m = I_n \times \dots$	setting						setting		setting	
CVS100		6...14 x $I_n$						-		-	
CVS160/250		-						9...14 x $I_n$		-	
CVS400/630		-						-		6...13 x $I_n$	

PB106447



EasyPact CVS100/160/250

PB106448



EasyPact CVS400/630

### Common characteristics

Rated voltages			
Insulation voltage (V)	<b>Ui</b>		690
Impulse withstand voltage (kV)	<b>Uimp</b>		8
Operational voltage (V)	<b>Ue</b>	AC 50/60 Hz	415
Suitability for isolation		IEC/EN 60947-2	yes
Utilisation category			A
Pollution degree		IEC 60664-1	3

### Circuit breakers

#### Performance

##### Electrical characteristics as per IEC 60947-2

Rated current (A)	<b>In</b>	40 °C
-------------------	-----------	-------

Number of poles

#### Breaking capacity levels

Breaking capacity (kA rms)			
	<b>Icu</b>	AC 50/60 Hz	220/240 V 380/415 V

Service breaking capacity (kA rms)			
	<b>Ics</b>	AC 50/60 Hz	220/240 V 380/415 V

Durability (C-O cycles)	Mechanical		
	Electrical	415V	In/2 In

#### Protection

Short-circuit protection	Magnetic only
Overload/short-circuit protection	Thermal magnetic electronic
	Micro processor
	with neutral protection (Off-0.5-1)
Earth fault protection	By UMGFP
Earth-leakage protection	By Vigi module

#### Installation/connections

Dimensions and weights		
Dimensions (mm) W x H x D	Fixed, front connections	3P 4P
	Weight (kg)	Fixed, front connections 3P 4P

#### Connections

Connection terminals	Pitch	Without/With spreaders
Large Cu or Al cables	Cross-section	mm <sup>2</sup>

\* 630 A @ 30°C

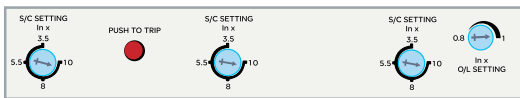
CVS100		CVS160		CVS250		CVS400		CVS630	
<b>100</b>		<b>160</b>		<b>250</b>		<b>400</b>		<b>630</b>	
3, 4		3, 4		3, 4		3, 4		3, 4	
<b>B</b>	<b>F</b>	<b>B</b>	<b>F</b>	<b>B</b>	<b>F</b>	<b>F</b>	<b>N</b>	<b>F</b>	<b>N</b>
40	70	40	70	40	70	40	70	40	70
25	36	25	36	25	36	36	50	36	50
40	70	40	70	40	70	40	70	40	70
25	36	25	36	25	36	36	50	36	50
30000		25000		20000		15000		15000	
30000		25000		20000		12000		8000	
12000		12000		10000		6000		4000	
■		■		■		■		■	
■		■		■		■		■*	
-		-		-		■		■	
-		-		-		■		■	
■		■		■		■		■	
■		■		■		■		■	
105 x 161 x 86		105 x 161 x 86		105 x 161 x 86		140 x 255 x 110		140 x 255 x 110	
140 x 161 x 86		140 x 161 x 86		140 x 161 x 86		185 x 255 x 110		185 x 255 x 110	
2.05		2.2		2.4		6.05		6.2	
2.4		2.6		2.8		7.90		8.13	
35/45 mm		35/45 mm		35/45 mm		45/52.5 mm		45/52.5 mm	
						45/70 mm		45/70 mm	
300		300		300		4 x 240		4 x 240	

# Functions and characteristics

800A

# Functions & Characteristics

Protection of distribution systems for EasyPact CVS 800



**EasyPact CVS 800A** MCCBs are available in 3P/4P version with 35/50kA breaking performances with  $I_{cs} = 100\% I_{cu}$ . EasyPact CVS comes with host of features including adjustable overload, short circuit setting, line load reversibility.

- $I_{cs} = 100\% I_{cu}$ .
- Adjustable over load setting (0.8 to 1 x  $I_n$ )
- Adjustable short circuit setting for individual phase (3.5 to 10  $I_n$ )
- Line load reversibility

## CVS 800

### Overload protection (thermal)

Tripping threshold (A) $I_n$	Adjustable 0.8...1 x $I_n$
------------------------------	----------------------------

### Short-circuit protection (magnetic)

Tripping threshold (A) $I_m$	Adjustable
EasyPact CVS 800	3.5...10 $I_n$

## Accessories and Auxiliaries

- Auxiliary contact with 1C/O & 2 C/O options.
- Alarm contact with 1C/O & 2 C/O options.
- Shunt trip coil.
- Under voltage coil.
- Direct and Extended Rotary Handle.
- Unique modular ground fault protection for 3 phase 3 wire and 3 phase 4 wire systems.

Function and characteristics			Protection of distribution system EasyPact CVS 800 A	
EasyPact CVS Circuit breakers			CVS 800	
Number of Poles			3/4	
Control/manual/toggle			<input type="checkbox"/> Direct or extended rotary handle <input type="checkbox"/>	
<b>Electrical characteristics as per IEC 60947- 2</b>				
Rated current(A)	$I_n$	40°C	800	
Rated insulation voltage(V)	$U_i$		690	
Impulse withstand voltage(kV)	$U_{imp}$		8	
Rated operational voltage(V)	$U_e$	AC 50/60 Hz	415	
<b>Type of circuit Breaker</b>			<b>F</b>	<b>N</b>
Ultimate Breaking Capacity(kA)	$I_{cu}$	AC 415V 50/60HZ	35	50
Service Breaking Capacity (KA)	$I_{cs}$	% $I_{cu}$	100%	
Utilisation category			A	
Durability (C-O cycles)			<input type="checkbox"/> mechanical 8000 <input type="checkbox"/> electrical 2500	
<b>Protection</b>			<b>Thermal Magnetic</b>	
Overload release setting (A)			<input type="checkbox"/> Adjustable $I_n$ ( $I_n$ x ...) <input type="checkbox"/> Centralised 0.8....1	
Short Circuit Protection			<input type="checkbox"/>	
Short Circuit Release setting			<input type="checkbox"/> $I_{sd}$ ( $I_r$ x...) 3.5 to 10 (independent adjustment of each phase)	
Earth Fault Protection* By UMGFP			<input type="checkbox"/>	
GFP Release setting = 10-60% of $I_n$			<input type="checkbox"/>	
Time Delay Setting (0.5 - 3 Sec./Inst.)			<input type="checkbox"/>	
<b>Additional indication &amp; control auxiliaries</b>				
Indication Contacts			<input type="checkbox"/>	
Alarm Contacts			<input type="checkbox"/> 1 C/O <input type="checkbox"/> 2 C/O	
Auxiliary Contacts			<input type="checkbox"/> 1 C/O <input type="checkbox"/> 2 C/O	
Alarm - Auxiliary Contacts			<input type="checkbox"/> 1 C/O each	
MX shunt and MN under voltage Release			<input type="checkbox"/>	
<b>Installation and Connection</b>				
Bus Bar Max.	width (mm)		40	
Cable Crimped lugs AL/CU (mm)2			300*2	
<b>Installation Accessories</b>				
Spreaders			<input type="checkbox"/>	
Phase Barriers			<input type="checkbox"/>	
<b>Dimensions &amp; Weight</b>				
Overall dimensions	W X H X D	(mm)	3Pole	210 x 274 x 103
		(mm)	4Pole	280 x 274 x 103
Weight(kg)			3 /4Pole	10.3/13.7

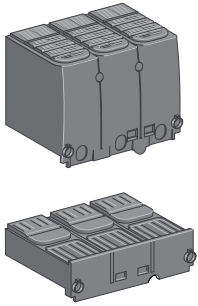


# Accessories and auxiliaries

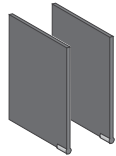
Overview  
CVS 100 to 630

## Insulation accessories

DB400001

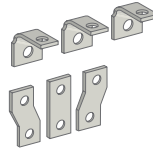


Sealable terminal shields

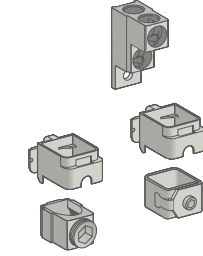


Interphase barriers

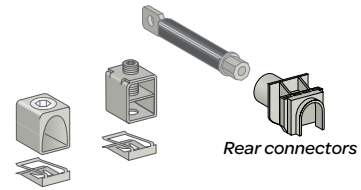
## Connection



Terminal extensions



Cable connectors



Rear connectors

Cable connectors

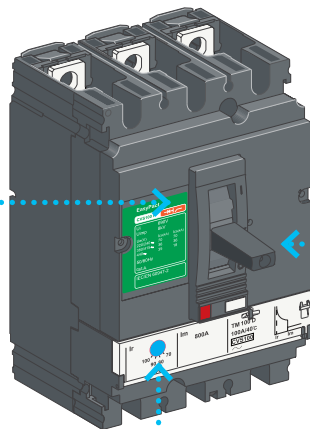
## Electrical auxiliaries



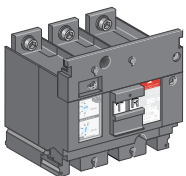
Indication contact



Voltage release

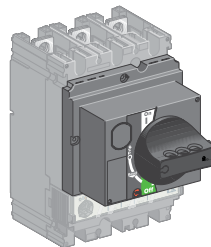


## Insulation Monitoring

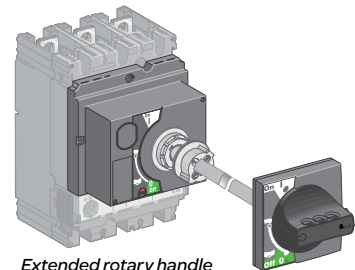


Earth leakage protection (VigiCVS)

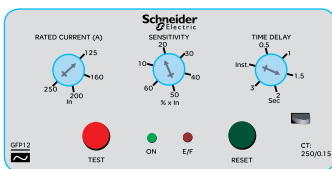
## Control accessories



Direct rotary handle



Extended rotary handle



Earth fault protection (UMGFP)

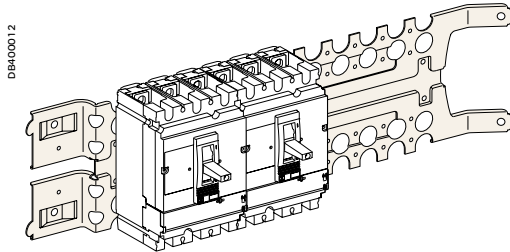
# Functions and characteristics

100 to 630A

# Accessories and auxiliaries

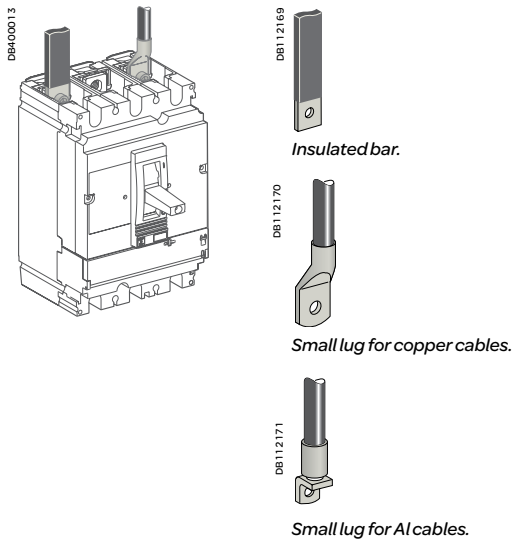
## Device installation

CVS circuit breakers may be installed horizontally, vertically or flat on their back, without derating performance levels.



Mounting on a Prisma mounting plate.

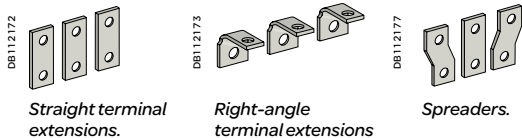
Fixed circuit breakers are designed for standard front connection using bars or cables with lugs. Cable connectors are available for bare cables. Rear connection is also possible.



Insulated bar.

Small lug for copper cables.

Small lug for Al cables.



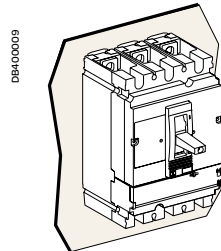
Straight terminal extensions.

Right-angle terminal extensions

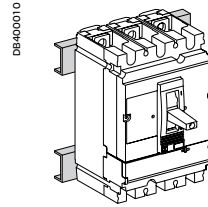
Spreaders.

### Fixed circuit breakers

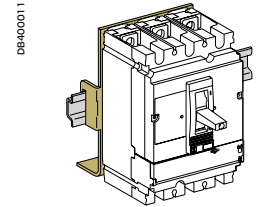
Fixed circuit breakers are designed for standard connection using bars or cables with lugs. Bare-cable connectors are available for connection to bare copper or aluminium cables.



Mounting on a backplate.



Mounting on rails.



Mounting on DIN rail (with adaptor).

### Front connection

#### Bars or cables with lugs

##### Standard terminals

EasyPact CVS100 to 630 come with terminals comprising snap-in nuts with screws:

- EasyPact CVS100: M6 nuts and screws.
- EasyPact CVS160/250: M8 nuts and screws
- EasyPact CVS400/630: M10 nuts and screws.

These terminals may be used for:

- direct connection of insulated bars or cables with lugs
- terminal extensions.

Interphase barriers or terminal shields are recommended. They are mandatory for certain connection accessories (in which case the interphase barriers are provided).

#### Bars

When the switchboard configuration has not been tested, insulated bars are mandatory.

#### Maximum size of bars

EasyPact CVS circuit breaker		100/160/250	400/630
Without spreaders	pitch (mm)	35	45
	maximum bar size (mm)	20 x 2	32 x 6
With spreaders	pitch (mm)	45	52.5
	maximum bar size (mm)	32 x 2	40 x 6

#### Crimp lugs

There are two modules of lugs, for aluminium and copper cables.

Interphase barriers or long terminal shields must be used with narrow lugs. The lugs are supplied with interphase barriers.

EasyPact CVS circuit breaker		100/160/250	400/630
Copper cables	size (mm <sup>2</sup> )	150, 185	240, 300
	crimping	hexagonal barrels or punching	
Aluminium cables	size (mm <sup>2</sup> )	150, 185	240, 300
	crimping	hexagonal barrels	

#### Terminal extensions

Extensions with anti-rotation ribs can be attached to the standard terminals to provide numerous connection possibilities in little space:

- straight terminal extensions
- right-angle terminal extensions

#### Spreaders

Spreaders may be used to increase the pitch:

- CVS100 to 250: the 35 mm pitch can be increased to 45 mm
- CVS400/630: the 45 mm pitch can be increased to 52 or 70 mm.

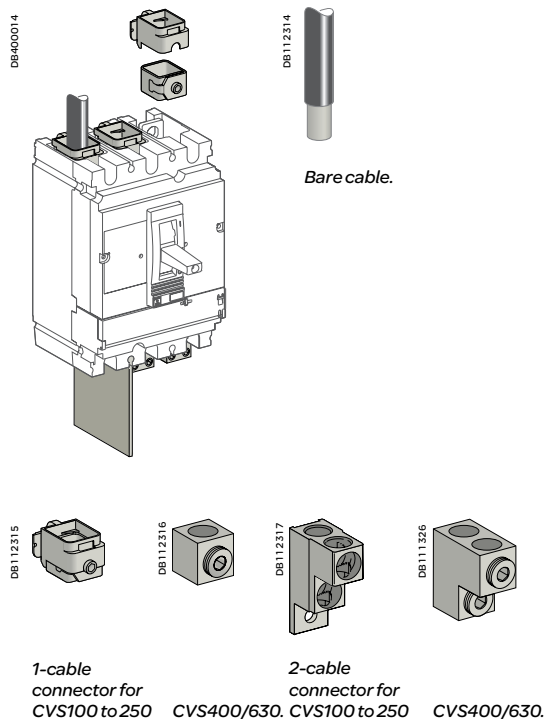
Bars, cable lugs or cable connectors can be attached to the ends.

#### Pitch (mm) depending on the type of spreader

EasyPact CVS circuit breaker	CVS100 to 250	CVS100 to 630
Without spreaders	35	45
With spreaders	45	52.5 or 70

# Accessories and auxiliaries

## Connection of devices



### Bare cables

Bare-cable connectors may be used for both copper and aluminium cables.

1-cable connectors for EasyPact CVS100 to 250

The connectors snap directly on to the device terminals or are secured by clips to right-angle and straight terminal extensions as well as spreaders.

1-cable connectors for EasyPact CVS400 to 630

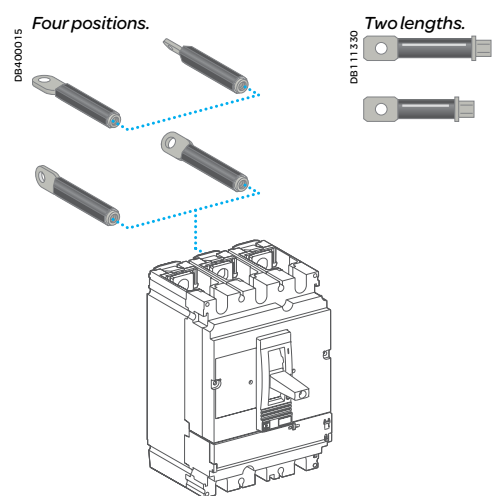
The connectors are screwed directly to the device terminals.

2-cable connectors for EasyPact CVS100 to 250 and 400/630

The connectors are screwed to device terminals or right-angle terminal extensions.

Maximum size of cables depending on the type of connector

EasyPact CVS circuit breaker		100/160	250	400	630
Steel connectors	1.5 to 95 mm <sup>2</sup>	■			
Aluminium connectors	25 to 95 mm <sup>2</sup>	■	■		
	120 to 185 mm <sup>2</sup>	■	■		
	2 cables 50 to 120 mm <sup>2</sup>	■	■		
	2 cables 35 to 240 mm <sup>2</sup>			■	■
	35 to 300 mm <sup>2</sup>			■	■



### Rear connection

Device mounting on a backplate with suitable holes enables rear connection.

### Bars or cables with lugs

Rear connections for bars or cables with lugs are available in two lengths. Bars may be positioned flat, on edge or at 45° angles depending on how the rear connections are positioned.

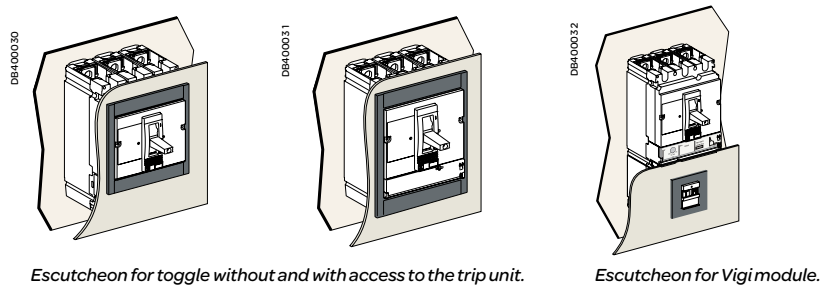
The rear connections are simply fitted to the device connection terminals. All combinations of rear connection lengths and positions are possible on a given device.

Escutcheons are an optional feature mounted on the switchboard door. They increase the degree of protection to IP40, IK07. Protection collars maintain the degree of protection, whatever the position of the device (connected, disconnected).

### IP40 escutcheons for fixed devices

There are three types of escutcheon with a gasket which are screwed to the door cut-out:

- three escutcheons for all control types (toggle, handle or motor mechanism)
- a wide model for Vigi modules that can be combined with the above.



### EasyPact CVS100/160/250

#### Standard

All EasyPact CVS100/160/250 circuit breakers have slots for the electrical auxiliaries listed below.

#### 5 indication contacts (see page A-15)

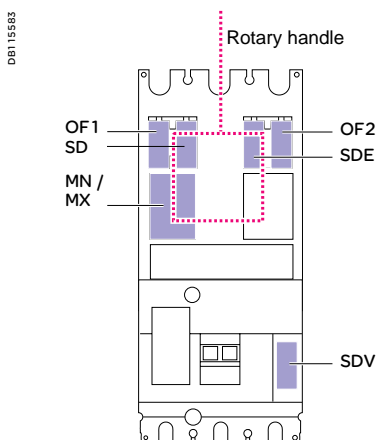
- 2 ON/OFF (OF1 and OF2)
- 1 trip indication (SD)
- 1 fault-trip indication (SDE)
- 1 earth-fault indication (SDV), when the device is equipped with a Vigi module.

#### 1 remote-tripping release (see page A-16)

- either 1 MN undervoltage release
- or 1 MX shunt release.

#### All these auxiliaries can be installed with a rotary handle.

The illustration shown (TMD, MA standard) indicates auxiliary possibilities depending on the type of trip unit.



### EasyPact CVS400/630

#### Standard

All EasyPact CVS400/630 circuit breakers have slots for the electrical auxiliaries listed below.

#### 6 indication contacts (see page A-15)

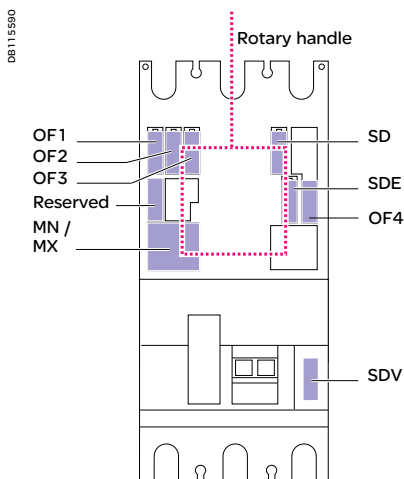
- 4 ON/OFF (OF4)
- 1 trip indication (SD)
- 1 fault-trip indication (SDE)
- 1 earth-fault indication (SDV), when the device is equipped with a Vigi module.

#### 1 remote-tripping release (see page A-16)

- either 1 MN undervoltage release
- or 1 MX shunt release.

#### All these auxiliaries can be installed with a rotary handle.

The illustration shown (TMD, MA and ETS 2.3 standard) indicates auxiliary possibilities depending on the type of trip unit.



# Accessories and auxiliaries

## Indication contacts

One contact model provides circuit-breaker status indications (OF - SD - SDE - SDV).



Indication contacts.

These common-point changeover contacts provide remote circuit-breaker status information.

They can be used for indications, electrical locking, relaying, etc. They comply with the IEC 60947-5 international recommendation.

### Functions

#### Breaker-status indications, during normal operation or after a fault

A single type of contact provides all the different indication functions:

- OF (ON/OFF) indicates the position of the circuit breaker contacts
- SD (trip indication) indicates that the circuit breaker has tripped due to:
  - an overload
  - a short-circuit
  - an earth fault (Vigi)
  - operation of a voltage release
  - operation of the “push to trip” button
  - disconnection when the device is ON.

The SD contact returns to de-energised state when the circuit breaker is reset.

- SDE (fault-trip indication) indicates that the circuit breaker has tripped due to:

- an overload
- a short-circuit
- an earth fault (Vigi)

- SDV indicates that the circuit breaker has tripped due to an earth fault. It returns de-energised state when the Vigi module is reset.

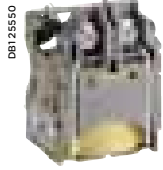
### Installation

■ OF, SD, SDE and SDV functions: a single type of contact provides all these different indication functions, depending on where it is inserted in the device. The contacts clip into slots behind the front cover of the circuit breaker (or the Vigi module for the SDV function).

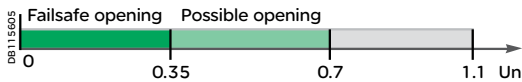
The SDE function on a CVS100 - 630 A equipped with a magnetic, thermal-magnetic or ETS2.3 trip unit requires the SDE adaptor.

### Electrical characteristics of auxiliary contacts

Contacts		Standard				Low level			
Types of contacts		All				OF, SD, SDE, SDV			
Rated thermal current (A)		6				5			
Minimum load		100 mA at 24 V DC				1 mA at 4 V DC			
Utilisation cat. (IEC 60947-5-1)		AC12	AC15	DC12	DC14	AC12	AC15	DC12	DC14
Operational current (A)	24 V AC/DC	6	6	6	1	5	3	5	1
	48 V AC/DC	6	6	2.5	0.2	5	3	2.5	0.2
	110 V AC/DC	6	5	0.6	0.05	5	2.5	0.6	0.05
	220/240 V AC	6	4	-	-	5	2	-	-
	250 V DC	-	-	0.3	0.03	5	-	0.3	0.03
	380/440 V AC	6	2	-	-	5	1.5	-	-



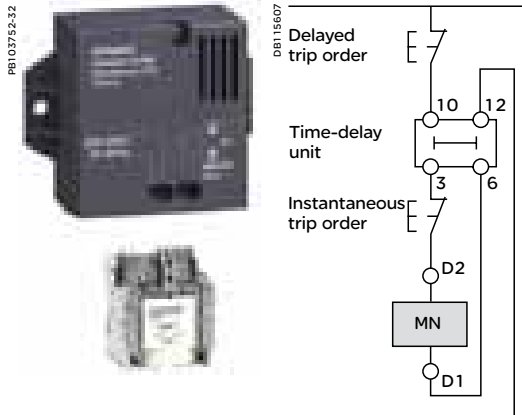
MX or MN voltage release.



Opening conditions of the MN release.

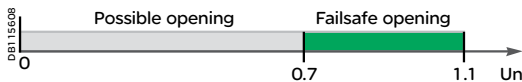


Closing conditions of the MN release.



MN release with a time-delay unit.

Wiring diagram for emergency-off function with MN + time-delay unit.



Opening conditions of the MX release.

### MN undervoltage release

- This release trips the circuit breaker when the control voltage drops below a tripping threshold
- The tripping threshold is between 0.35 and 0.7 times the rated voltage
- Circuit breaker closing is possible only if the voltage exceeds 0.85 times the rated voltage.

### Characteristics

Power supply	V AC	50/60 Hz: 24 - 48 - 100/130 - 200/240
		50 Hz: 380/415    60 Hz: 208/277
Operating threshold	V DC	12 - 24 - 30 - 48 - 60 - 125 - 250
	Opening	0.35 to 0.7 Un
	Closing	0.85 Un
Operating range		0.85 to 1.1 Un
Consumption (VA or W)		Pick-up: 10 - Hold: 5
Response time (ms)		50

### Time-delay unit for an MN release

A time delay unit for the MN release eliminates the risk of nuisance tripping due to a transient voltage dip lasting  $\leq 200$  ms. For shorter micro-outages, a system of capacitors provides temporary supply to the MN at  $U > 0.7$  to ensure non tripping. The correspondence between MN releases and time-delay units is shown below.

Power supply	Corresponding MN release
<b>Unit with fixed delay 200 ms</b>	
48 V AC	48 V DC
220 / 240 V AC	250 V DC
<b>Unit with adjustable delay <math>\leq 200</math> ms</b>	
48 - 60 V AC/DC	48 V DC
100 - 130 V AC/DC	125 V DC
220 - 250 V AC/DC	250 V DC

### MX shunt release

The MX release opens the circuit breaker via an impulse-type ( $\geq 20$  ms) or maintained order.

### Opening conditions

When the MX release is supplied, it automatically opens the circuit breaker. Opening is ensured for a voltage  $U \geq 0.7 \times U_n$ .

### Characteristics

Power supply	V AC	50/60 Hz: 24 - 48 - 100/130 - 200/240
		50 Hz: 380/415    60 Hz: 208/277
Operating range	V DC	12 - 24 - 30 - 48 - 60 - 125 - 250
		0.7 to 1.1 Un
Consumption (VA or W)		Pick-up: 10
Response time (ms)		50

### Circuit breaker control by MN or MX

When the circuit breaker has been tripped by an MN or MX release, it must be reset before it can be reclosed.

MN or MX tripping takes priority over manual closing.

In the presence of a standing trip order, closing of the contacts, even temporary, is not possible.

Connection using wires up to 1.5mm<sup>2</sup> to integrated terminal blocks.

**Note:** circuit breaker opening using an MN or MX release must be reserved for safety functions. This type of tripping increases wear on the opening mechanism. Repeated use reduces the mechanical endurance of the circuit breaker by 50%.

# Accessories and auxiliaries

## Rotary handles

There are two types of rotary handle:

- direct rotary handle
- extended rotary handle.

PB106453



EasyPact CVS with a rotary handle.

PB106454



EasyPact CVS with an extended rotary handle installed at the back of a switchboard, with the keylock option and key.

PB106455



PB106456



### Direct rotary handle

#### Standard handle

Degree of protection IP40, IK07.

The direct rotary handle maintains:

- visibility of and access to trip-unit settings
- suitability for isolation
- indication of the three positions O (OFF), I (ON) and tripped
- access to the "push to trip" button.

#### Device locking

The rotary handle facilitates circuit-breaker locking.

##### ■ Padlocking:

- standard situation, in the OFF position, using 1 to 3 padlocks, shackle diameter 5 to 8 mm, not supplied

### Extended rotary handle

Degree of protection IP56, IK08.

The extended rotary handle makes it possible to operate circuit breakers installed at the back of switchboards, from the switchboard front.

It maintains:

- visibility of and access to trip-unit settings
- suitability for isolation
- indication of the three positions O (OFF), I (ON) and tripped.

### Device and door padlocking

Padlocking locks the circuit-breaker handle and disables door opening:

- standard situation, in the OFF position, using 1 to 3 padlocks, shackle diameter 5 to 8 mm, not supplied

### Parts of the extended rotary handles

- A unit that replaces the front cover of the circuit breaker (secured by screws).
- An assembly (handle and front plate) on the door that is always secured in the same position, whether the circuit breaker is installed vertically or horizontally.
- An extension shaft that must be adjusted to the distance. The min/max distance between the back of circuit breaker and door is:
  - 185...600 mm for EasyPact CVS 100 to 250
  - 209...600 mm for EasyPact CVS 400/630.

### Manual source-changeover systems

An additional accessory interlocks two devices with rotary handles to create a source-changeover system. Closing of one device is possible only if the second is open.

This function is compatible with direct or extended rotary handles.

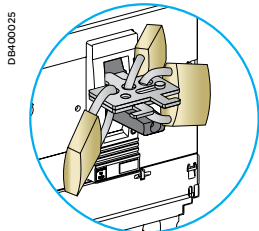
Up to three padlocks can be used to lock in the OFF or ON position.

# Functions and characteristics

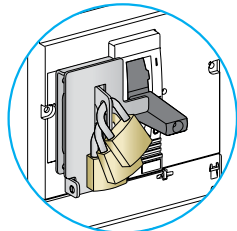
100 to 630A

# Accessories and auxiliaries

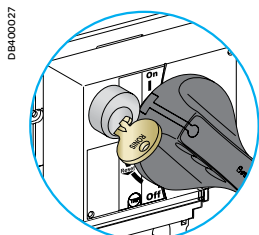
## Locks and sealing accessories



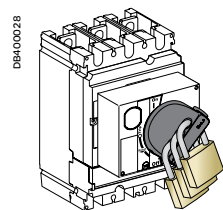
Toggle locking using padlocks and an accessory: Removable device



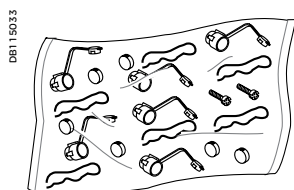
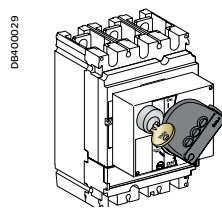
Fixed device attached to the case.



Rotary-handle locking using a keylock.



Rotary-handle locking using a padlock or a keylock.



Sealing accessories.

### Locks

Locking in the OFF position guarantees isolation as per IEC 60947-2. Padlocking systems can receive up to three padlocks with shackle diameters ranging from 5 to 8 mm (padlocks not supplied). Certain locking systems require an additional accessory.

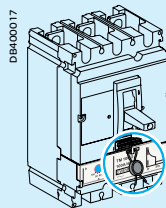
Control device	Function	Means	Required accessories
Toggle	Lock in OFF position	Padlock	Removable device
	Lock in OFF or ON position	Padlock	Fixed device
Direct handle	Lock in	Padlock	-
	<ul style="list-style-type: none"> <li>■ OFF position</li> <li>■ OFF or ON position <sup>(1)</sup></li> </ul>	Keylock	Locking device + keylock
Extended rotary handle	Lock in	Padlock	-
	<ul style="list-style-type: none"> <li>■ OFF position</li> <li>■ OFF or ON position <sup>(1)</sup> with door opening prevented <sup>(2)</sup></li> </ul>		
	Lock in OFF position	Padlock	UL508 control accessory
	<ul style="list-style-type: none"> <li>■ OFF or ON position <sup>(1)</sup> inside the switchboard</li> </ul>	Keylock	Locking device + keylock

(1) Following a simple modification of the mechanism.

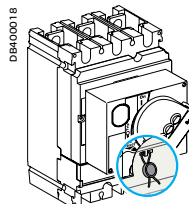
(2) Unless door locking has been voluntarily disabled.

### Sealing accessories

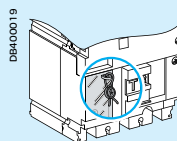
#### Toggle control



#### Rotary handle



#### Access to Vigi-module settings



#### Types of seals

#### Protection cover for settings

#### Protected operations

- modification of settings.



# Installation recommendations

EasyPact CVS

## Installation recommendations

### Contents

*Functions and characteristics* A-1

**Operating conditions and temperature derating** B-2

**Installation in switchboards** B-3

Safety clearances and minimum distances B-3

Installation example B-4

*Dimensions and connection* C-1

*Additional characteristics* D-1

*Catalogue numbers* E-1

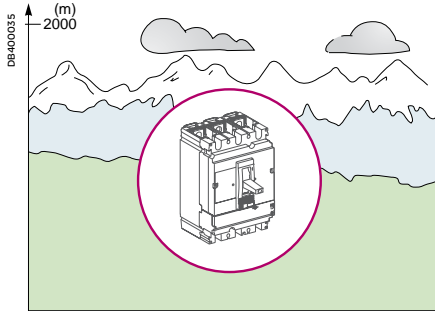


# Installation recommendations

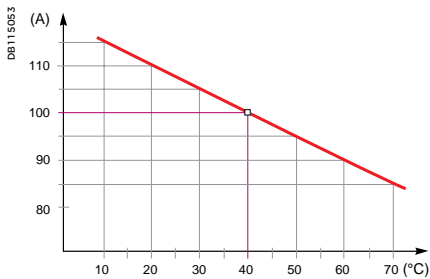
100 to 630A

# Operating conditions and temperature derating

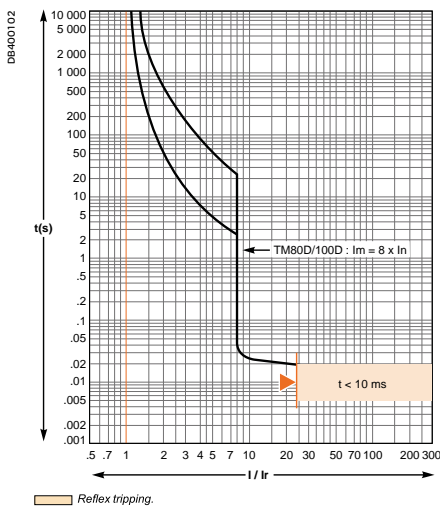
When thermal-magnetic trip units are used at ambient temperatures other than 40 °C, the Ir pick-up is modified.



Electronic trip units are not affected by variations in temperature. If the trip units are used in high-temperature environments, the ETS setting must nevertheless take into account the temperature limits of the circuit breaker.



Temperature derating curve for CVS100.



Thermal-protection curve with minimum and maximum values.

## Altitude derating

Altitude does not significantly affect the characteristics of EasyPact CVS circuit breakers up to 2000 m. Above this altitude, it is necessary to take into account the decrease in the dielectric strength and cooling capacity of air.

## Vibrations

CVS devices resist electromagnetic or mechanical vibrations. Tests are carried out in compliance with standard IEC 60068-2-6 for the levels required by merchant-marine inspection organisations (Veritas, Lloyds, etc.):

- 2 to 13.2 Hz: amplitude 11 mm
- 13.2 to 100 Hz: constant acceleration 0.7 g.

Excessive vibration may cause tripping, breaks in connections or damage to mechanical parts.

## Degree of protection

CVS circuit breakers have been tested for degree of protection (IP) and mechanical impact protection (IK). See page A-2.

The overload protection is calibrated at 40 °C in the lab. This means that when the ambient temperature is less than or greater than 40 °C, the Ir protection pick-up is slightly modified.

To obtain the tripping time for a given temperature:

- see the tripping curves for 40 °C (see pages D-2 and D-3)
- determine tripping times corresponding to the Ir value (thermal setting on the device), corrected for the ambient temperature as indicated in the tables below.

## Settings of CVS100 to 630 equipped with TM-D trip units as a function of the temperature

The table indicates the real Ir (A) value for a given rating and temperature.

Rat. (A)	Temperature (°C)												
	10	15	20	25	30	35	40	45	50	55	60	65	70
16	18.4	18	18	18	17	16.6	16	15.6	15.2	14.8	14.5	14	13.8
25	28.8	28	27.5	27	26.3	25.6	25	24.5	24	23.5	23	22	21
32	36.8	36	35.2	34.4	33.6	32.8	32	31.3	30.5	30	29.5	29	28.5
40	46	45	44	43	42	41	40	39	38	37	36	35	33.5
50	57.5	56	55	54	53	51	50	49	47	46	44	43	41
63	73	72	70	68	67	65	63	61	59	57	55	53	50
80	92	90	88	86	84	82	80	78	75.5	73	70.7	68	65
100	114	112	110	107	105	102.5	100	97	95	92.0	89	86	83
125	144	141	138	134	131	128	125	122	119	116	113	109	106
160	184	180	176	172	168	164	160	156	152	148	144	140	136
200	230	225	220	215	210	205	200	195	190	185	180	175	170
250	288	281	277	269	263	256	250	244	238	231	225	219	213
320	364.9	357.8	350.5	343.2	335.6	327.9	320	311.9	303.6	295	286.2	277.1	267.7
400	456.6	447.7	438.6	429.2	419.7	410	400	390	379.3	368.5	357.3	345.8	333.9
500	558.6	549.2	539.7	530.1	520.3	510.2	500	489.6	478.9	468	456.8	445.4	433.6
600	672	660.5	648.9	637	630	612.6	600	587.2	574	560.6	546.8	532.7	518.2

## CVS400 and 630 (equipped with ETS2.3 electronic trip unit)

The table below indicates the maximum long-time (LT) protection setting Ir (A) depending on the ambient temperature.

Type of device	Rating (A)	Temperature (°C)						
		40	45	50	55	60	65	70
<b>CVS400</b>								
Fixed	400	400	400	400	390	380	370	360
<b>CVS630</b>								
Fixed	630	630	615	600	585	570	550	535

Note: For 800A please contact sales office

# Installation in switchboards

## Safety clearances and minimum distances

### General rules

When installing a circuit breaker, minimum distances (safety clearances) must be maintained between the device and panels, bars and other protection devices installed nearby. These distances, which depend on the ultimate breaking capacity, are defined by tests carried out in accordance with standard IEC 60947-2.

If installation conformity is not checked by type tests, it is also necessary to:

- use insulated bars for circuit-breaker connections
- segregate the busbars using insulating screens.

For CVS100 to 630 devices, terminal shields and interphase barriers are recommended and may be mandatory depending on the operating voltage of the device and type of installation (fixed, withdrawable, etc.).

### Power connections

The table below indicates the rules to be respected for CVS100 to 630 devices to ensure insulation of live parts for fixed devices.

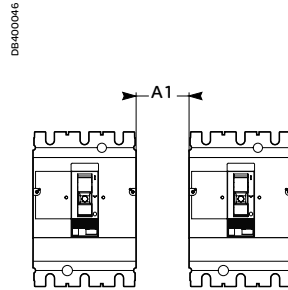
### CVS100 to 630: rules to be respected to ensure insulation of live parts

Type of connection		Fixed, front connection			Fixed, rear connection
Possible, recommended or mandatory accessories:		No insulating accessory	Interphase barriers	Long terminal shields <sup>(1)</sup>	Short terminal shields
With:					
operating voltage	type of conductor				
≤ 440 V	Insulated bars	Possible	Possible	Possible	Recommended
	Extension terminals Cables + crimp lugs	No	Mandatory (supplied)	Possible (instead of ph. barriers)	Recommended
	Bare cables + connectors	Possible for CVS100 to 250	Possible for CVS100 to 250	Possible for CVS100 to 250	Recommended
	No	Mandatory (supplied)	Possible (instead of ph. barriers)		

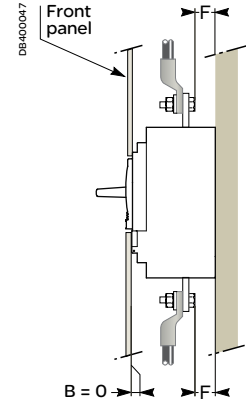
<sup>(1)</sup> Long terminal shields provide a degree of protection of IP40 (ingress) and IK07 (mechanical impact).

### Safety clearance

#### Minimum distance between two adjacent circuit breakers



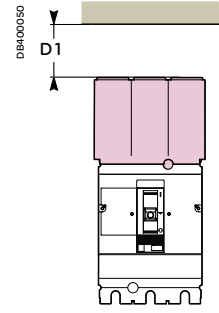
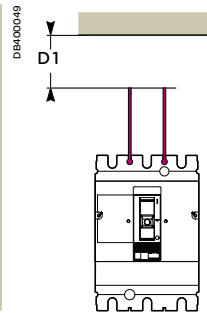
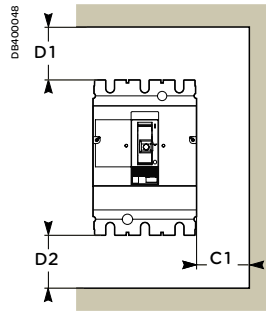
#### Minimum distance between circuit breaker and front or rear panels



Bare or painted sheet metal

**Note:** if  $F < 8$  mm: an insulating screen or long terminal shield is mandatory.

#### Minimum distance between circuit breaker and top, bottom or side panels



Devices without accessories.

Devices with interphase barriers or long terminal shields.

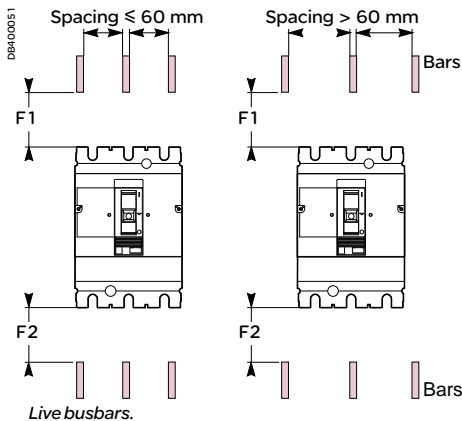
### Minimum safety clearances for CVS100 to 630

Operating voltage	Clearance (mm)						
	Between devices	Between device and sheet metal					
		C1	D1	D2	C1	D1	D2
	A1	C1	D1	D2	C1	D1	D2

**U ≤ 440 V**

for devices equipped with:

■ no accessories	0	0	30	30	5	40	40
■ interphase barriers	0	0	0	0	5	0	0
■ long terminal shields	0	0	0	0	0	0	0



### Clearances with respect to live bare busbars

#### Minimum clearances for CVS100 to 630

Operating voltage	Clearances with respect to live bare busbars			
	spacing ≤ 60 mm		spacing > 60 mm	
	F1	F2	F1	F2
U < 440 V	350	350	80	80

These clearances can be reduced for special installations as long as the configuration is checked by tests.

# Dimensions and connection

## EasyPact CVS

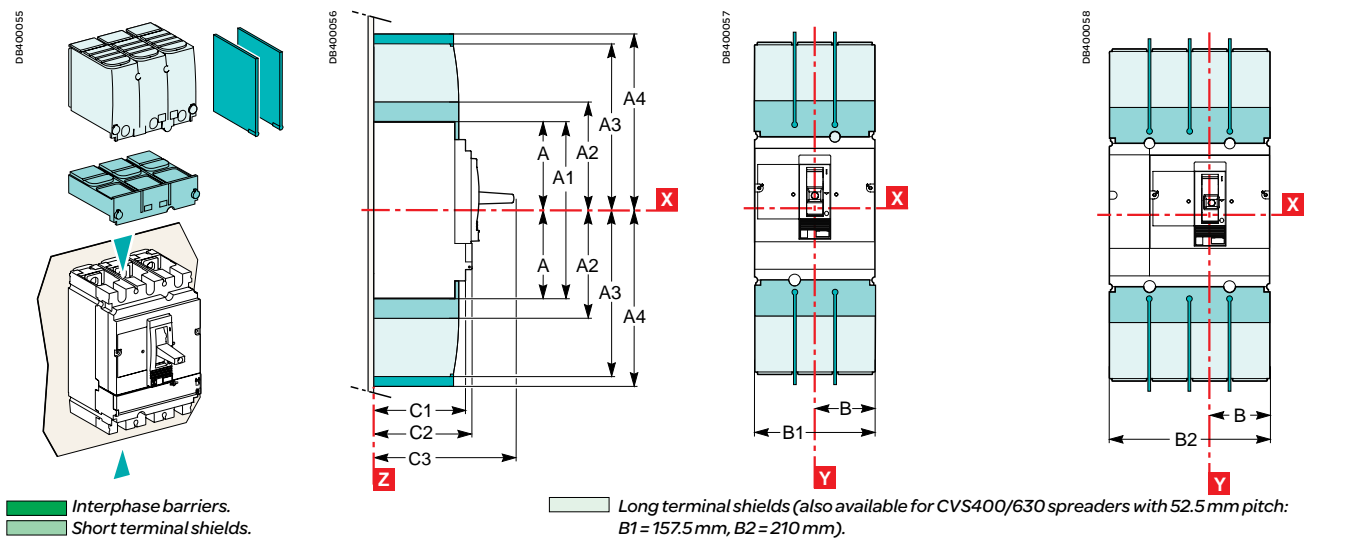
## Dimensions and connection

### Contents

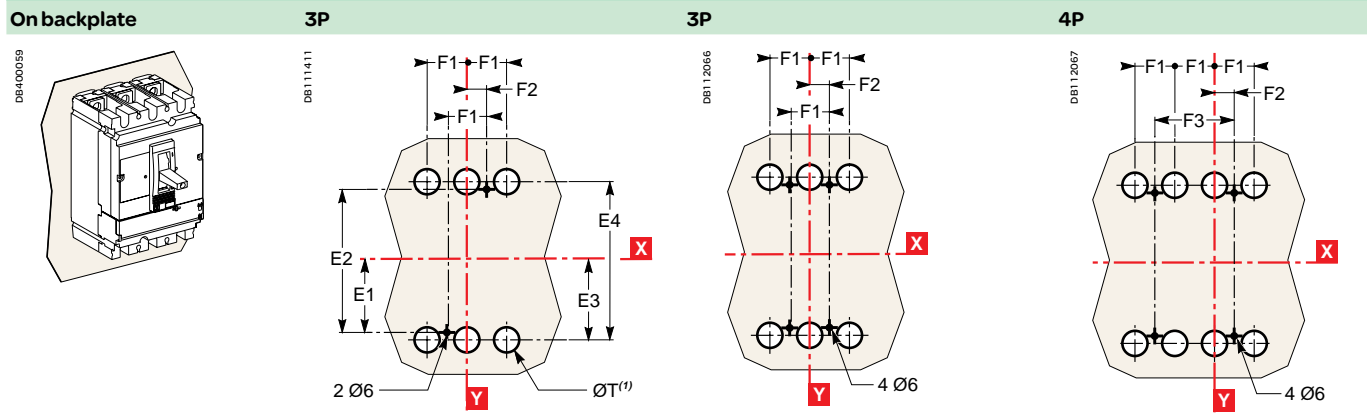
<i>Functions and characteristics</i>	A-1
<i>Installation recommendations</i>	B-1
<b>Dimensions and mounting</b>	
EasyPact CVS100 to 630	C-2
Vigi CVS100 to 630	C-3
<b>Front-panel accessories</b>	
EasyPact CVS100 to 630	C-4
<b>Front-panel cutouts</b>	
EasyPact CVS100 to 630	C-5
<b>Power connections</b>	
EasyPact and Vigi CVS100 to 630	C-6
Connection of insulated bars or cables with lugs to EasyPact and Vigi CVS100 to 630	C-9
Connection of bare cables to EasyPact and Vigi CVS100 to 630	C-10
<b>Dimension &amp; installation recommendation</b>	
EasyPact CVS 800	C-11
<b>Electrical wiring diagram</b>	
EasyPact CVS 3 Phase 3 Wire and 3 Phase 4 Wire operated GFP	C-12
<i>Additional characteristics</i>	D-1
<i>Catalogue numbers</i>	E-1



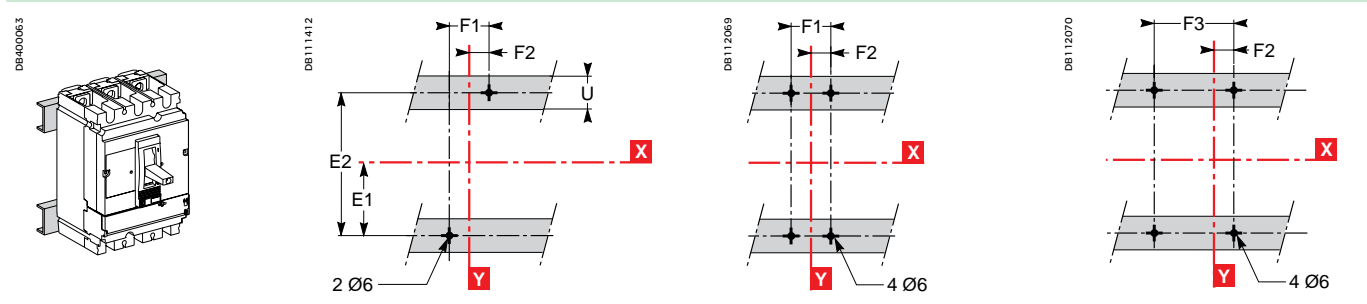
## Dimensions



## Mounting



## On rails



## On DIN rail with adaptor plate (CVS100 to 250)



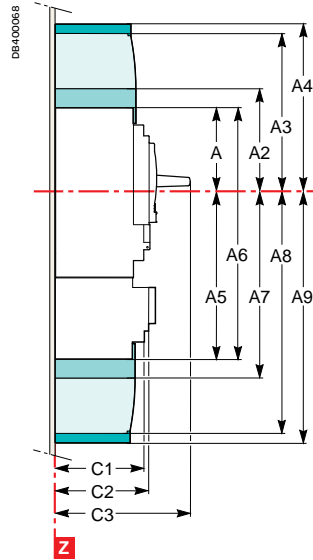
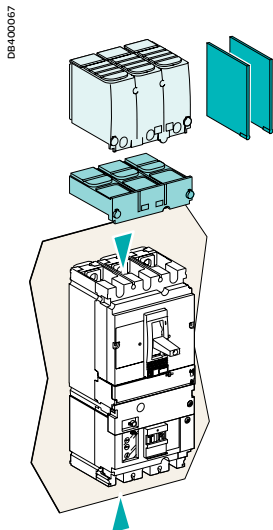
# Dimensions and mounting

Vigi CVS100 to 630

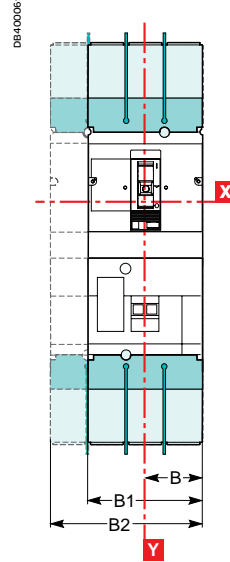
## Dimensions

3/4P

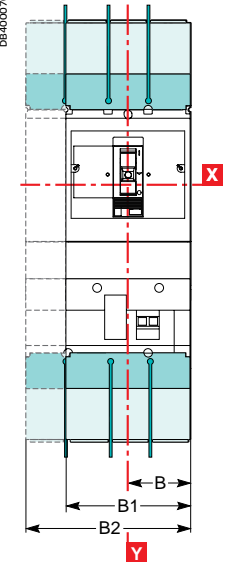
3/4P



CVS100 to 250



CVS400/630



## Mounting

CVS100 to 250

CVS400/630

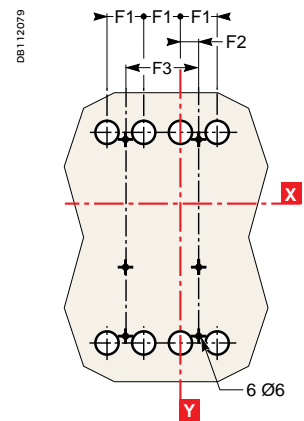
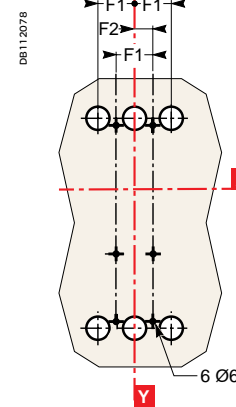
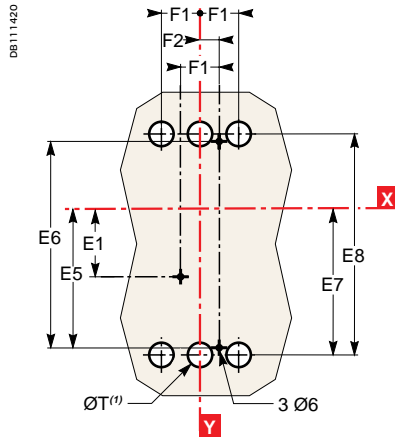
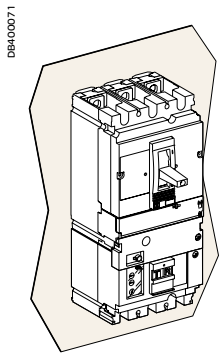
CVS100 to 630

On backplate

3P

3P

4P



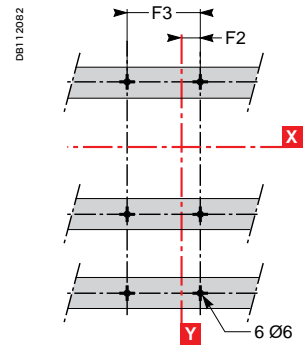
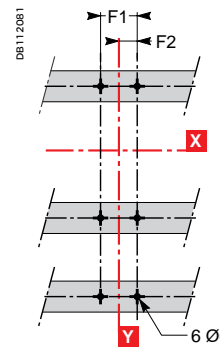
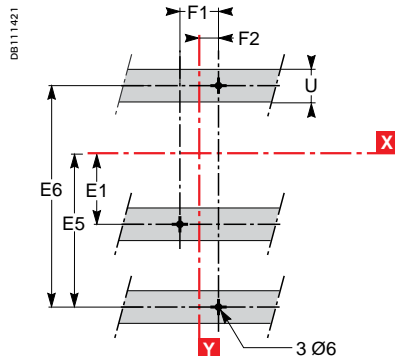
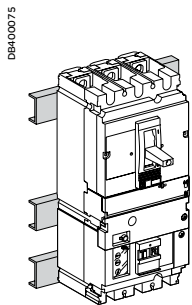
(1) The ØT holes are required for rear connection only.

On rails

3P

3P

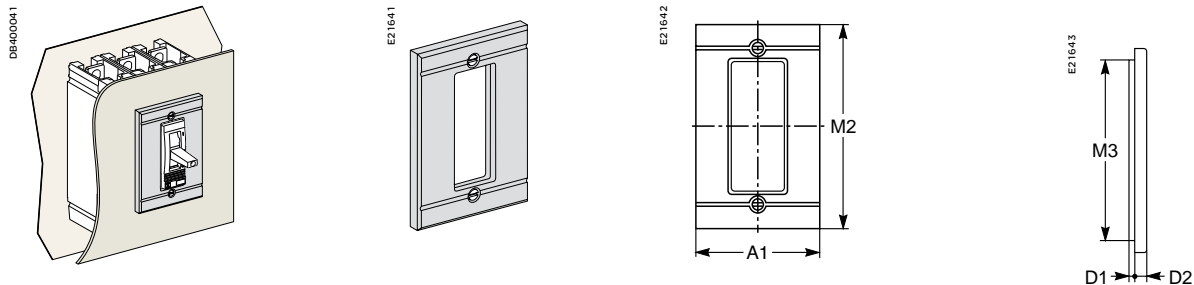
4P



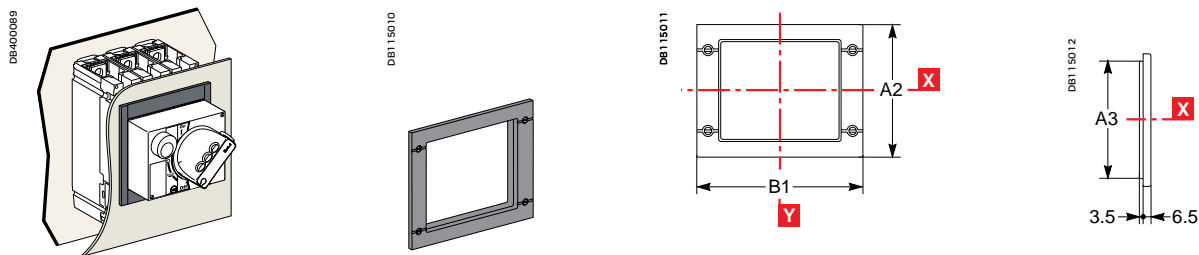
Type	A	A1	A2	A3	A4	A5	A6	A7	A8	A9	B	B1	B2	C1	C2	C3	E1
CVS100/160/250	80.5	161	94	145	178.5	155.5	236	169	220	253.5	52.5	105	140	81	86	126	62.5
CVS400/630	127.5	255	142.5	200	237	227.5	355	242.5	300	337	70	140	185	95.5	110	168	100
Type	E2	E3	E4	E5	E6	E7	E8	F1	F2	F3	G1	G2	G3	G4	G5	ØT	U
CVS100/160/250	125	70	140	137.5	200	145	215	35	17.5	70	95	75	13.5	23	17.5	24	≤ 32
CVS400/630	200	113.5	227	200	300	213.5	327	45	22.5	90	-	-	-	-	-	32	≤ 35

## IP40 front-panel escutcheons

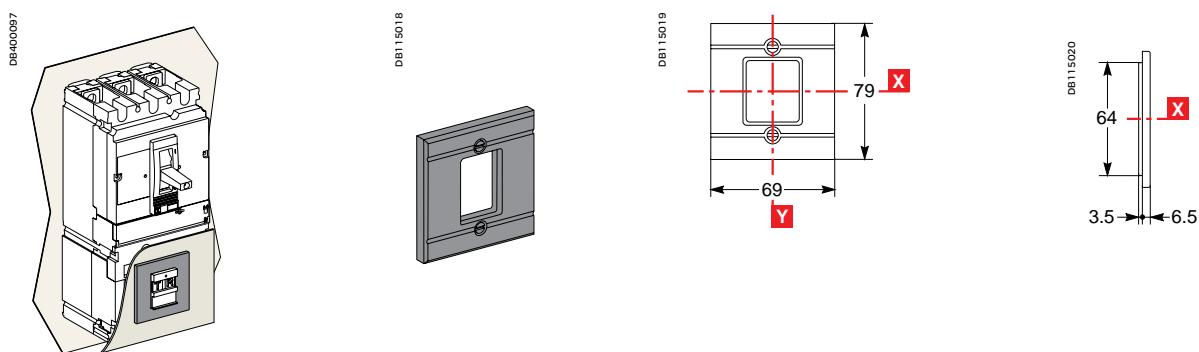
### For toggle



### For rotary handle or module and protection collar



### For Vigi



Type	A1	A2	A3	B1	M2	M3
CVS100/160/250	91	114	101	157	115	102
CVS400/630	123	164	151	189	155	142



# Front-panel cutouts

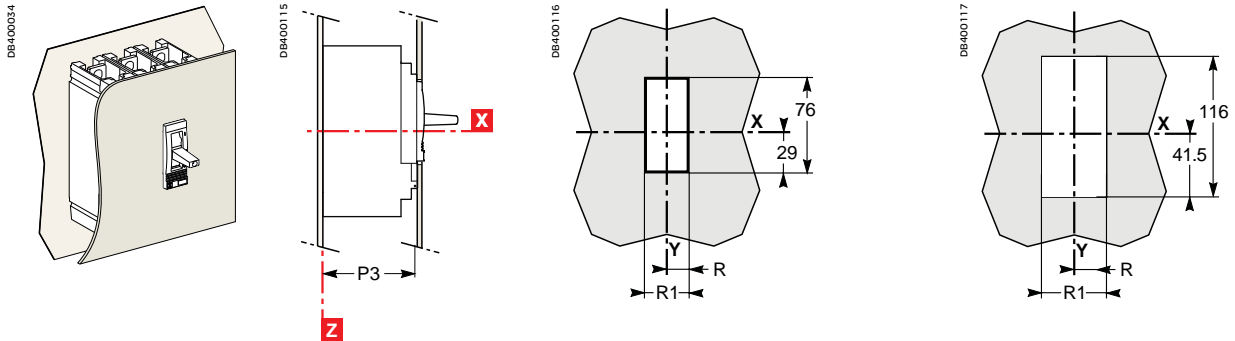
## EasyPact CVS100 to 630

### Bare sheet metal

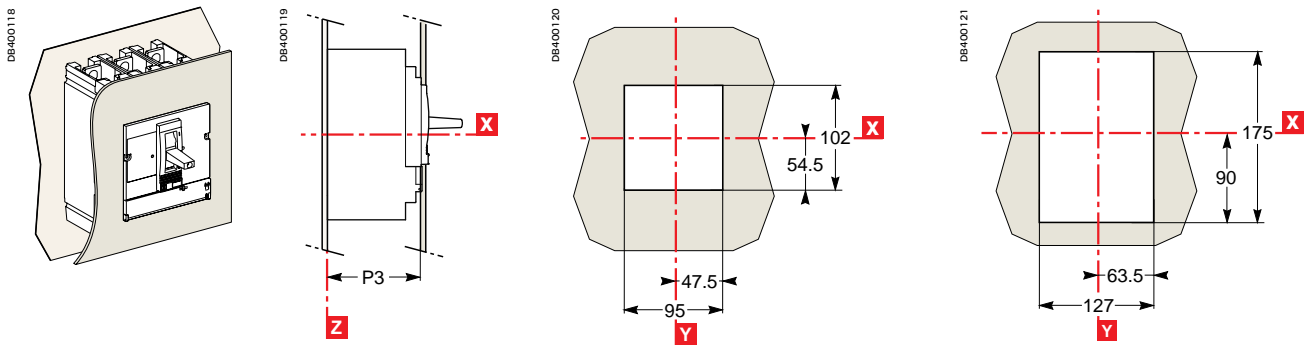
### CVS100 to 250

### CVS400/630

#### For toggle



#### For toggle with access to trip unit



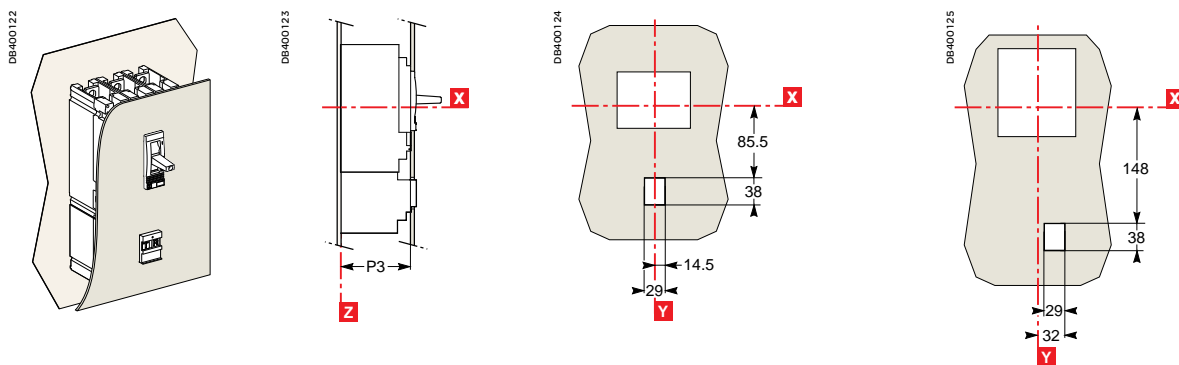
Type	P3	R	R1
CVS100/160/250	88	14.5	29
CVS400/630	112	31.5	63

### Bare sheet metal

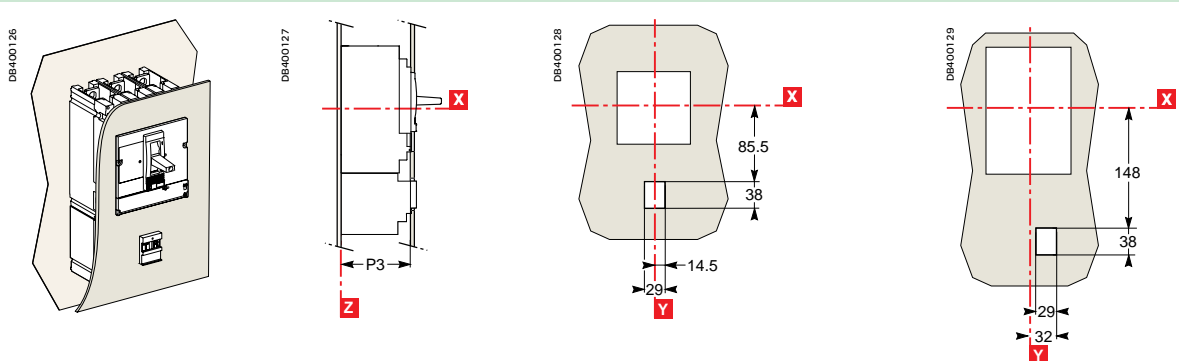
### CVS100 to 250

### CVS400/630

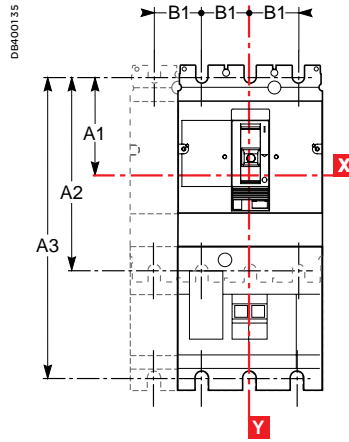
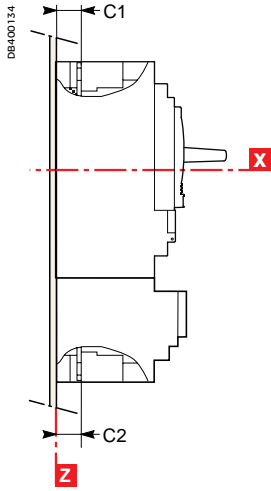
#### For toggle



#### For toggle with access to trip unit



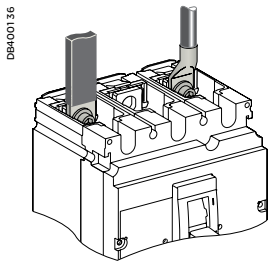
## Connection locations



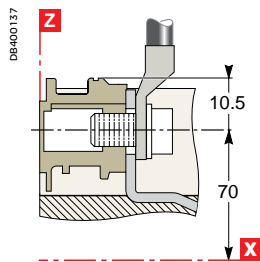
Type	A1	A2	B1	C1	C2
CVS100/160	70	140	35	19.5	19.5
CVS250	70	140	35	21.5	19.5
CVS400/630	113.5	227	45	26	26

Type	A1	A3	B1	C1	C2
CVS100/160 + Vigi	70	215	35	19.5	21.5
CVS250 + Vigi	70	215	35	21.5	21.5
CVS400/630 + Vigi	113.5	327	45	26	26

## Front connection without accessories

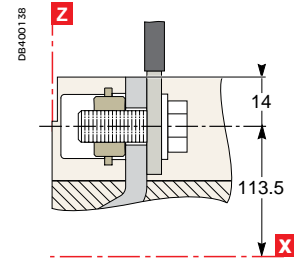


CVS100 to 250



Cables with lugs/bars

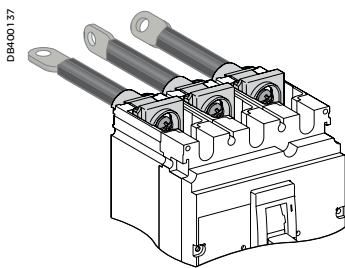
CVS400/630



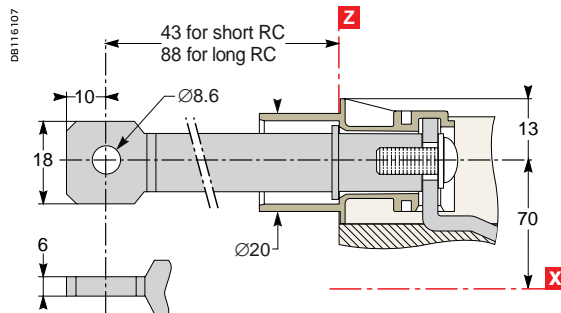
Bars/cables with lugs

## Connection with accessories

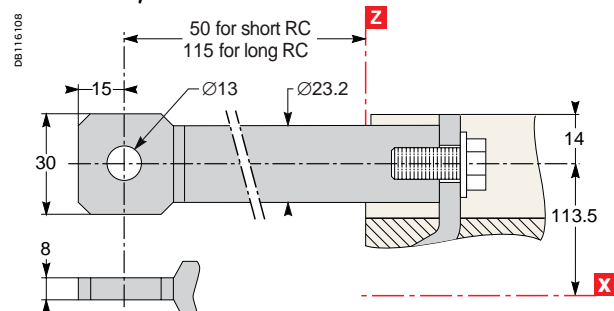
### Long and short rear connectors



CVS100 to 250



CVS400/630

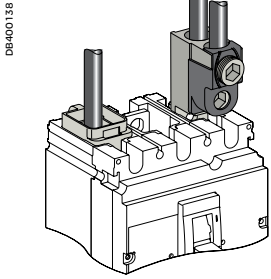


# Power connections

## EasyPact and Vigi CVS100 to 630

### Connection with accessories (cont.)

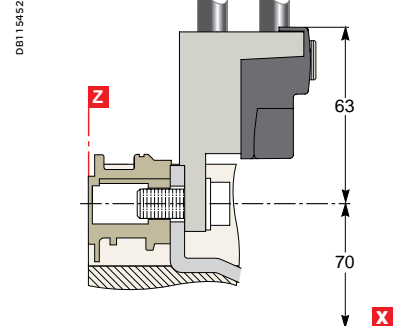
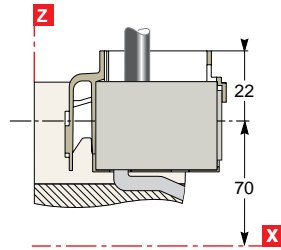
#### Bare-cable connectors



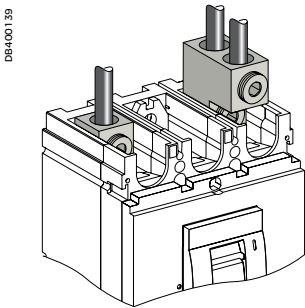
DBA00138

#### CVS100 to 250

DB115451



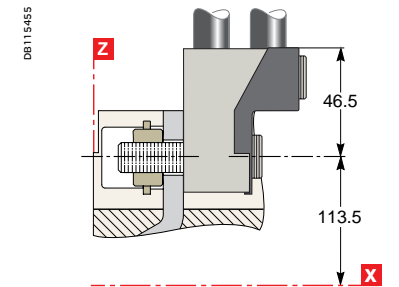
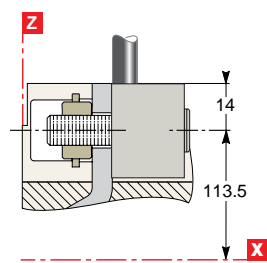
DB115452



DBA00139

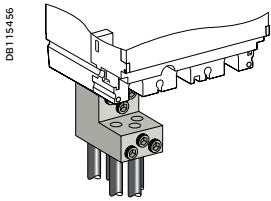
#### CVS400/630

DB115454



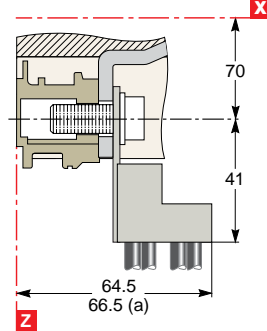
DB115455

#### Distribution connectors (for CVS100 to 250 only)



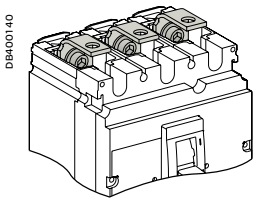
DB115456

DB115457



(a) Vigi module or CVS250.

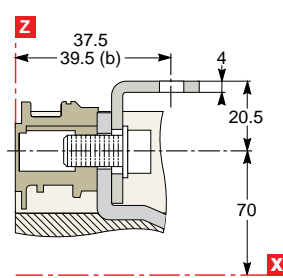
#### Right-angle terminal extensions (upstream only)



DBA00140

#### CVS100 to 250

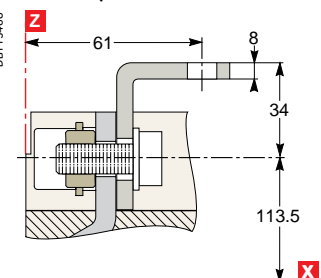
DB115459



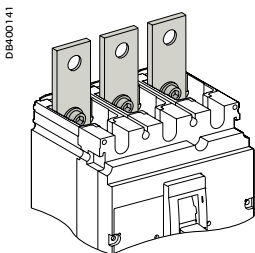
(b) CVS250.

#### CVS400/630

DB115460

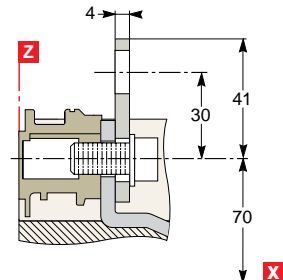


#### Straight terminal extensions (for CVS100 to 250 only)



DBA00141

DB115462



## Connection with accessories (cont.)

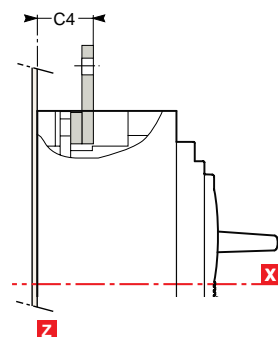
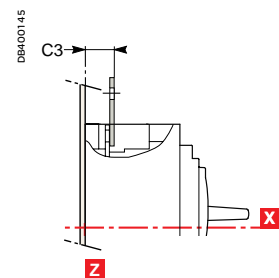
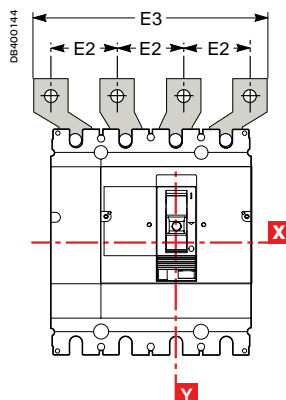
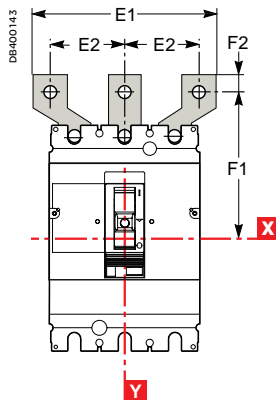
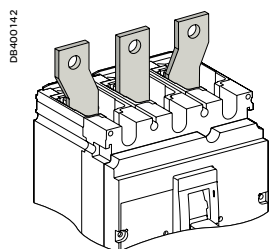
Spreaders

3P

4P

CVS100 to 250

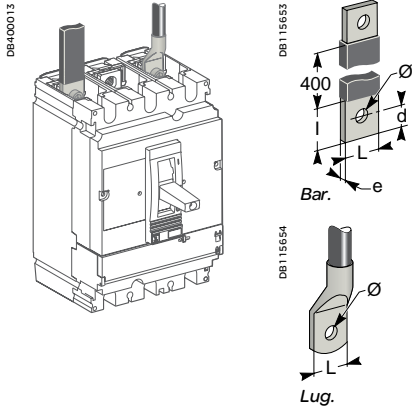
CVS400/630



Type	C3	C4	E1	E2	E3	F1	F2
CVS100/160	23.5	-	114	45	159	100	11
CVS250	25.5	-	114	45	159	100	11
CVS400/630	-	44	135 170	52.5 70	187.5 240	152.5 166	15 15

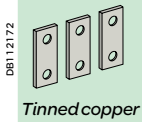
# Power connections

Connection of insulated bars or cables with lugs to EasyPact and Vigi CVS100 to 630



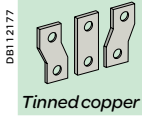
## Accessories for CVS100 to 250

### Straight terminal extensions



Tinned copper

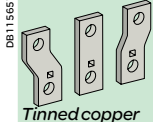
### Spreaders: separate parts



Tinned copper

## Accessories for CVS400 and 630

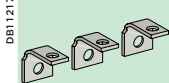
### Spreaders made up of separate parts for 52.5 and 70 mm pitch



Tinned copper

## Accessories for CVS100 to 630

### Right-angle terminal extensions



Tinned copper  
To be mounted on upstream side.

## Direct connection to CVS100 to 630

Dimensions		CVS100	CVS160/250	CVS400/630
Bars	L (mm)	≤ 25	≤ 25	≤ 32
	l (mm)	d + 10	d + 10	d + 15
	d (mm)	≤ 10	≤ 10	≤ 15
	e (mm)	≤ 6	≤ 6	3 ≤ e ≤ 10
	Ø (mm)	6.5	8.5	10.5
Lugs	L (mm)	≤ 25	≤ 25	≤ 32
	Ø (mm)	6.5	8.5	10.5
Torque (Nm) <sup>(1)</sup>		10	15	50
Torque (Nm) <sup>(2)</sup>		5/5	5/5	20/11

(1) Tightening torque on the circuit breaker for lugs or bars.

(2) Tightening torque on fixed devices for rear connectors.

## Connection with accessories to CVS100 to 250 (IEC 228)

Pole pitch			
Without spreaders		35 mm	
With spreaders		45 mm	
Dimensions		With spreaders or terminal extensions	
		CVS100	CVS160/250
Bars	L (mm)	≤ 25	≤ 25
	l (mm)	20 ≤ l ≤ 25	20 ≤ l ≤ 25
	d (mm)	≤ 10	≤ 10
	e (mm)	≤ 6	≤ 6
	Ø (mm)	6.5	8.5
Lugs	L (mm)	≤ 25	≤ 25
	Ø (mm)	6.5	8.5
Torque (Nm) <sup>(1)</sup>		10	15

(1) Tightening torque on the circuit breaker for spreaders or terminal extensions.

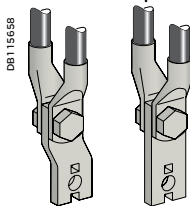
Spreaders and straight, right-angle, 45°, double-L and edgewise terminal extensions are supplied with flexible interphase barriers.

## Connection with accessories to CVS400 and 630 (IEC 228)

Pole pitch					
Without spreaders		45 mm			
With spreaders		52.5 or 70 mm			
Dimensions		With spreaders		With terminal extensions	
		With spreaders		With terminal extensions	
Bars	L (mm)	≤ 40	≤ 32		
	l (mm)	d + 15	30 ≤ l ≤ 34		
	d (mm)	≤ 20	≤ 15		
	e (mm)	3 ≤ e ≤ 10	3 ≤ e ≤ 10		
	Ø (mm)	12.5	10.5		
Lugs	L (mm)	≤ 40	≤ 32		
	Ø (mm)	12.5	10.5		
Torque (Nm) <sup>(1)</sup>		50		50	

(1) Tightening torque on the circuit breaker for spreaders or terminal extensions.

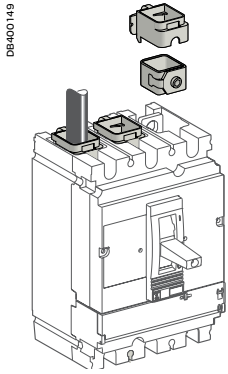
Spreaders and right-angle, 45° and edgewise terminal extensions are supplied with flexible interphase barriers.



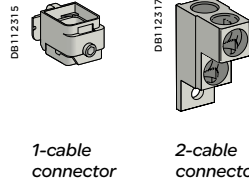
Mounting detail: 2 cables with lugs.

## Power connections

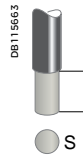
Connection of bare cables to EasyPact and Vigi CVS100 to 630



### Connection for CVS100 to 250



DB115663



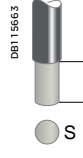
	1-cable connector	Steel ≤ 160 A		Aluminium ≤ 250 A	
		L (mm)	25	25	
S (mm <sup>2</sup> ) Cu/Al	1.5 to 95 <sup>(1)</sup>	25 to 50	70 to 95	120 to 185 150 max. flex.	
Torque (Nm)	12	20	26	26	
2-cable connector					
L (mm)	25 or 50				
S (mm <sup>2</sup> ) Cu/Al	2 x 50 to 2 x 120				
Torque (Nm)	22				

<sup>(1)</sup> For flexible cables from 1.5 to 4 mm<sup>2</sup>, connection with crimped or self-crimping ferrules.

### Connection to CVS400 and 630



DB115663



	1-cable connector		2-cable connector
	L (mm)	30	30 or 60
S (mm <sup>2</sup> ) Cu/Al	35 to 300 rigid 240 max. flex.	2 x 35 to 2 x 240 rigid 240 max. flex.	
Torque (Nm)	31	31	

### Conductor materials and electrodynamic stresses

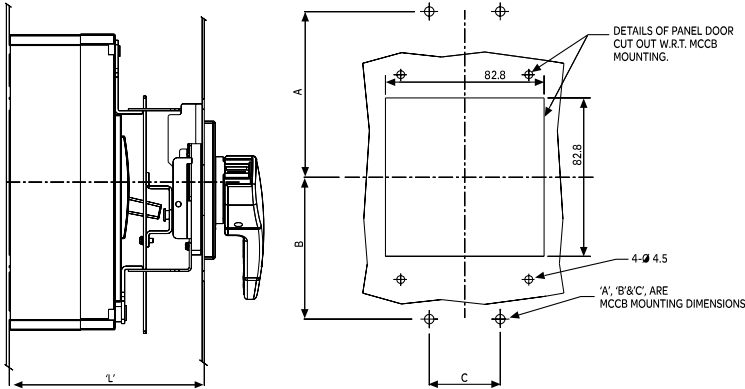
EasyPact CVS circuit breakers can be connected indifferently with bare-copper, tinned-copper and tinned-aluminium conductors (flexible or rigid bars, cables). In the event of a short-circuit, thermal and electrodynamic stresses will be exerted on the conductors. They must therefore be correctly sized and held in place by supports.

Electrical connection points on switchgear devices (switch-disconnectors, contactors, circuit breakers, etc.) should not be used for mechanical support. Any partition between upstream and downstream connections of the device must be made of non-magnetic material.

# Dimension & installation recommendation

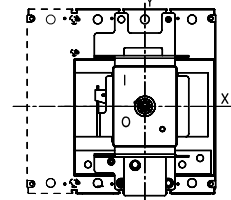
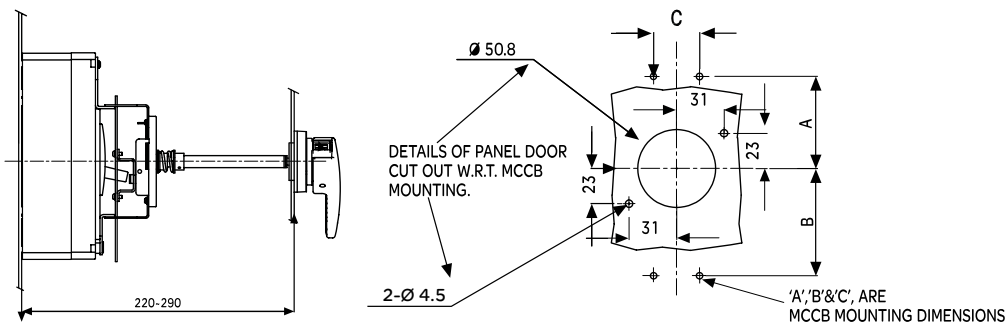
## EasyPact CVS 800

### Direct Rotary handle EasyPact CVS 800



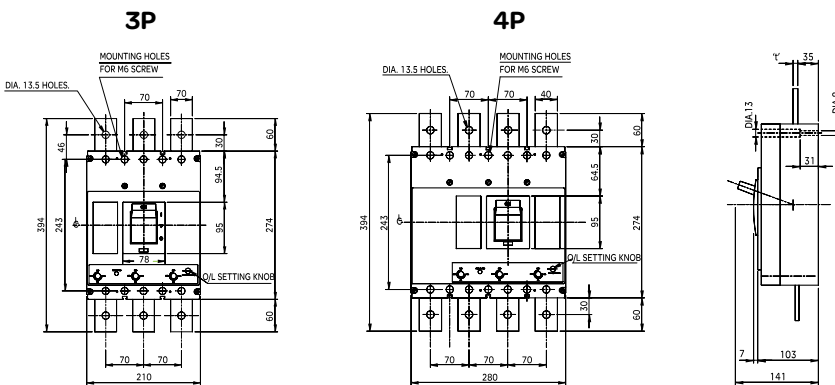
MCB Type	Dimension			Panel Depth 'L'
	A	B	C	
CVS 800	129	114	70	179 ±1

### Extended rotary Handle

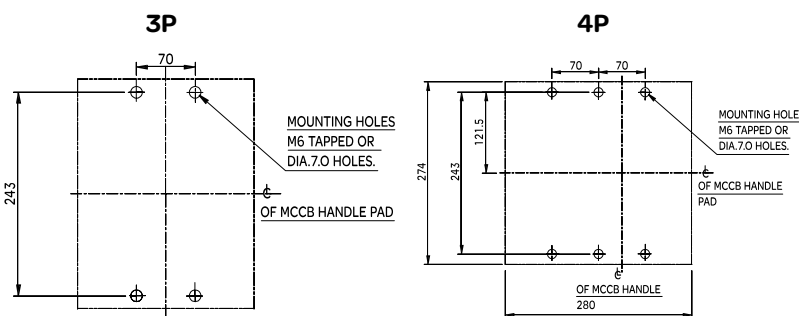


MCB Type	Dimension		
	A	B	C
CVS 800	129	114	70

### CVS 800 F/N



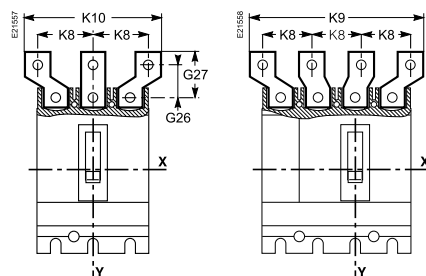
### CVS 800 F/N



Rating	Dimn. 't'
800 A	8.0 mm

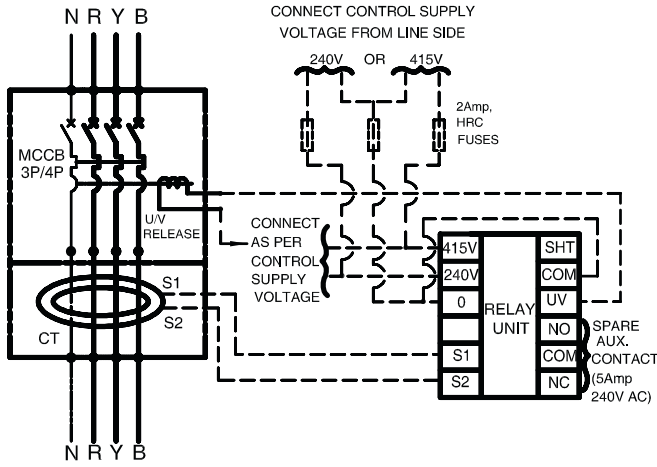
### Connection with accessories

#### Spreader



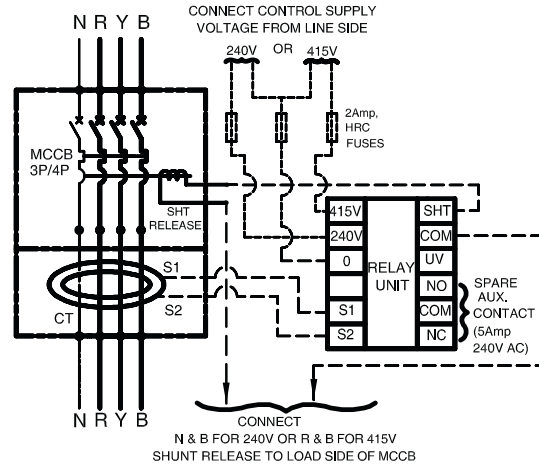
Dimensions (mm)					
Type	G26	G27	K8	K9	K10
CVS100/160/200/250	30	41	45	159	114
CVS400/630	52.5	67.5	70	240	170

### Wiring diagram for under voltage release operated GFP



- Supply to RELAY UNIT & UNDER VOLTAGE RELEASE shall be taken from SUPPLY SIDE of MCCB.

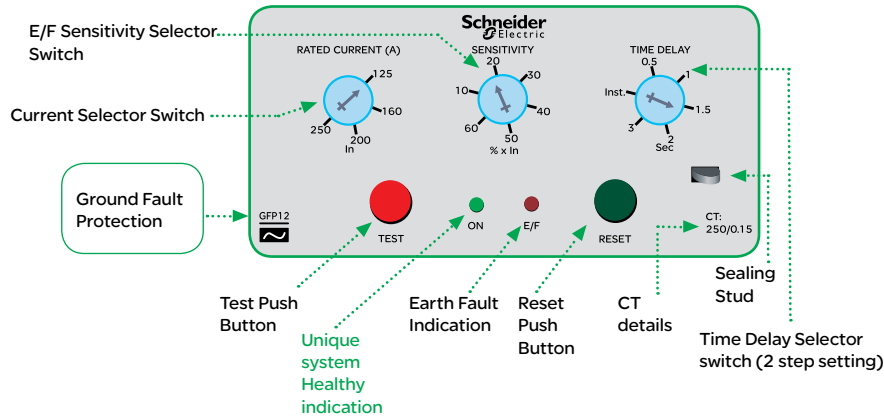
### Wiring diagram for shunt release operated GFP



- Control Voltage supply to RELAY UNIT shall be taken from LINE SIDE of MCCB.
- Supply to SHUNT RELEASE shall be taken from LOAD SIDE of MCCB.

#### Notes:

- Connections shown in dotted lines shall be made by customer.
- HRC fuses are not in SEIPL's scope of supply.
- Remove BOTTOM SIDE SPREADERS (if Fitted) of MCCB before mounting 'CT' on MCCB.



- To change any setting switch 'OFF' the MCCB. Remove protective cover from Relay Module. Replace cover after changing setting.
- To test E/F relay press test Push Button. E/F relay will operate according to the time delay selection. Keep the Test Push Button pressed till the relay trips (indicated by red lamp).



# Additional characteristics

EasyPact CVS

## Additional characteristics

### Contents

<i>Functions and characteristics</i>	A-1
<i>Installation recommendations</i>	B-1
<i>Dimensions and connection</i>	C-1
<b>Tripping curves</b>	
EasyPact CVS 100 to 800A Protection of distribution systems	D-2
EasyPact CVS 100 to 250 Motor protection	D-5
Current and energy limiting curves	D-6

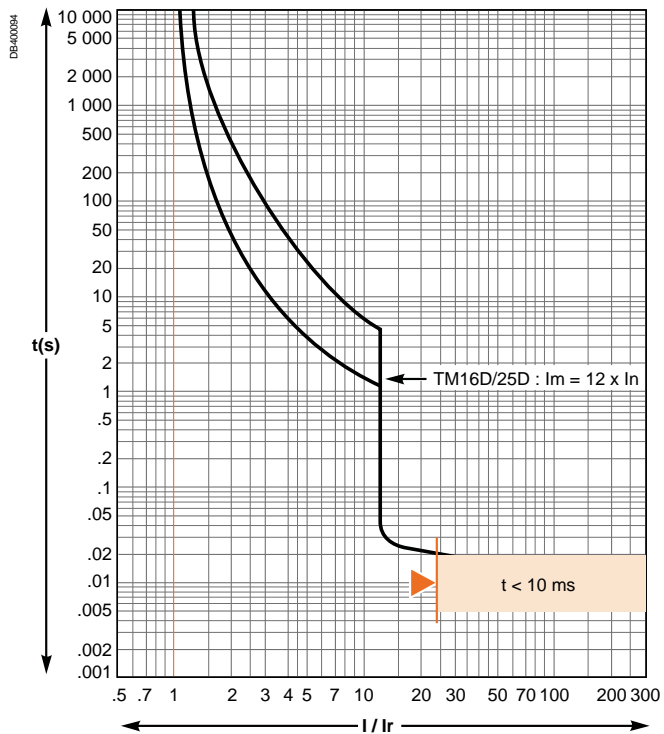
*Catalogue numbers*

E-1



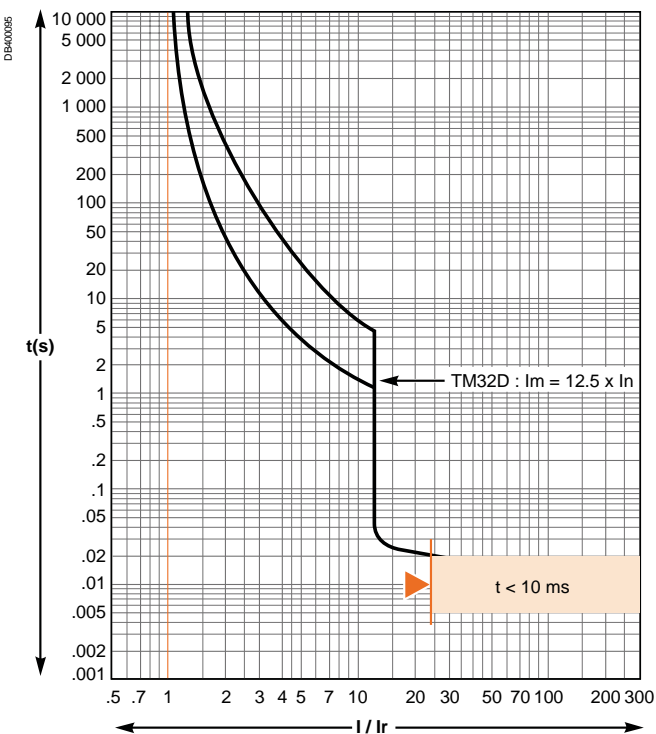
## TM magnetic trip units

### TM16D/25D



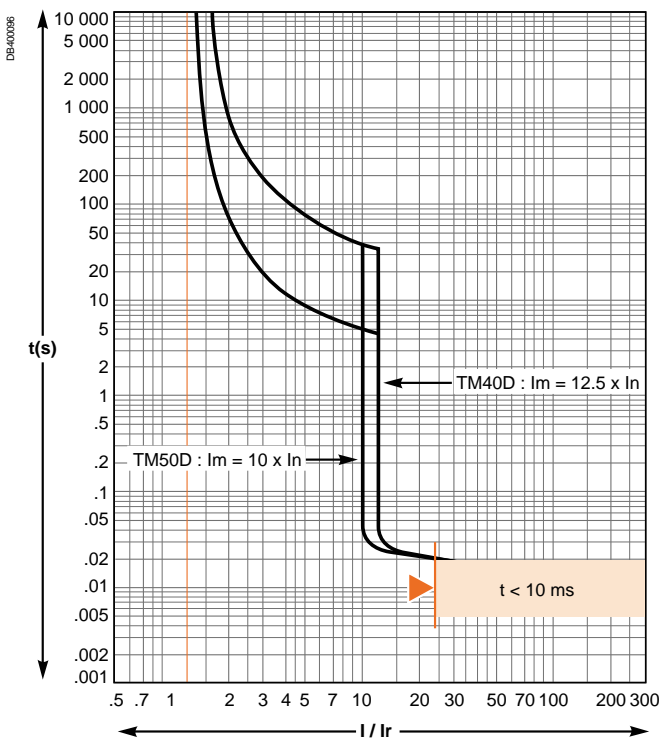
Reflex tripping.

### TM32D



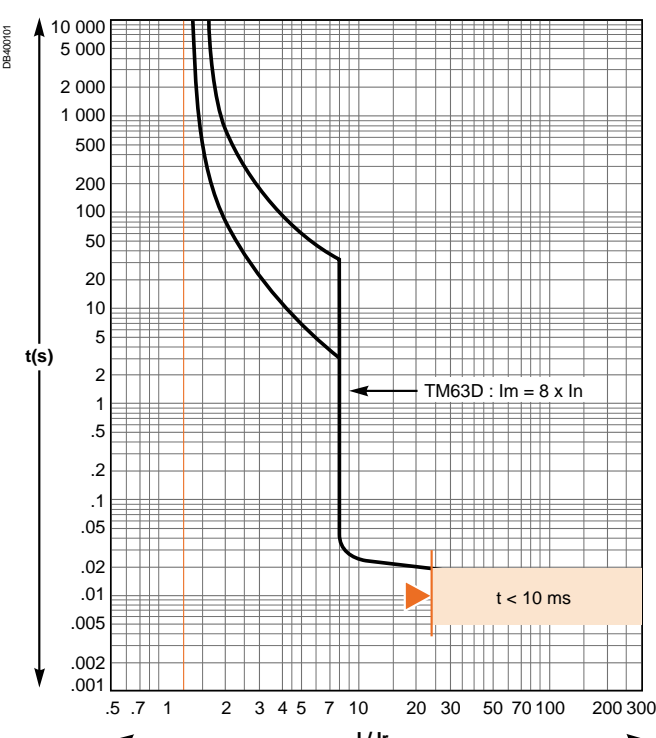
Reflex tripping.

### TM40D/50D



Reflex tripping.

### TM63D



Reflex tripping.

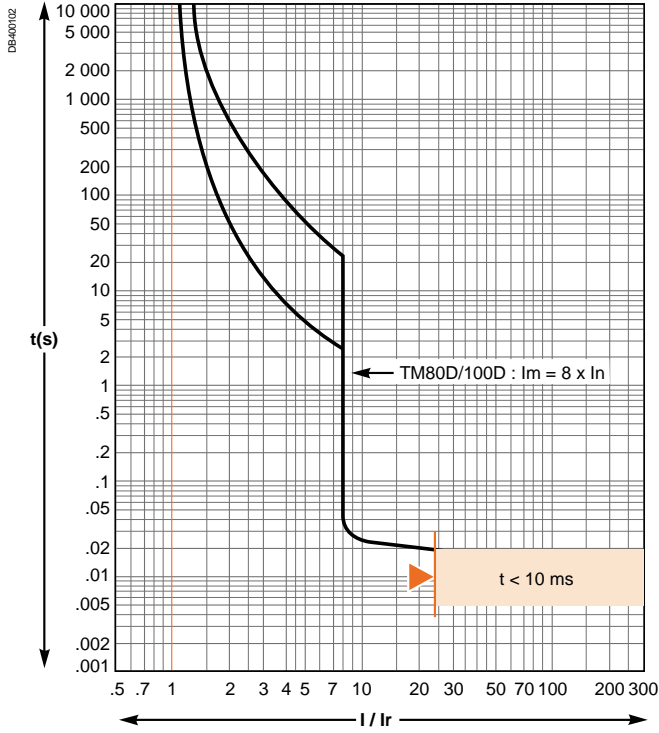
# Tripping curves

EasyPact CVS 100 to 800A

Protection of distribution systems

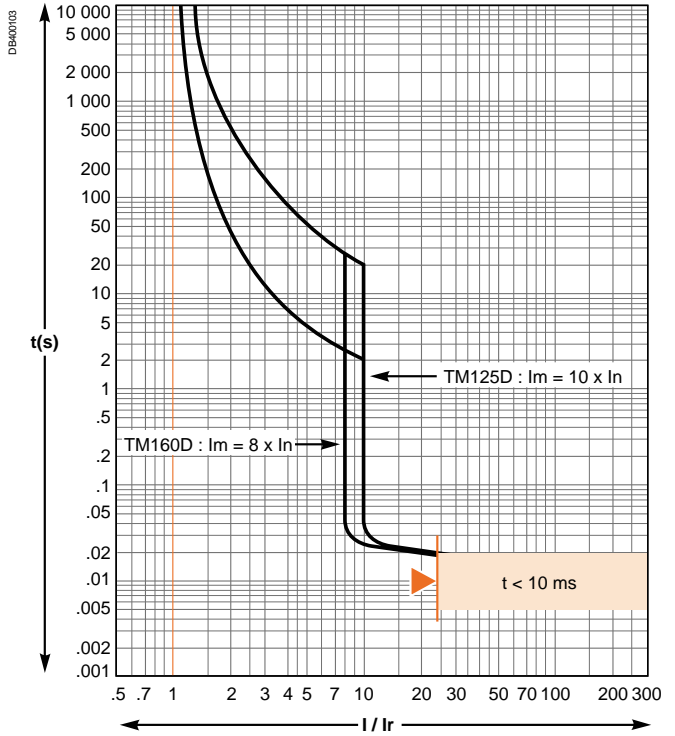
## TM magnetic trip units

### TM80D/100D



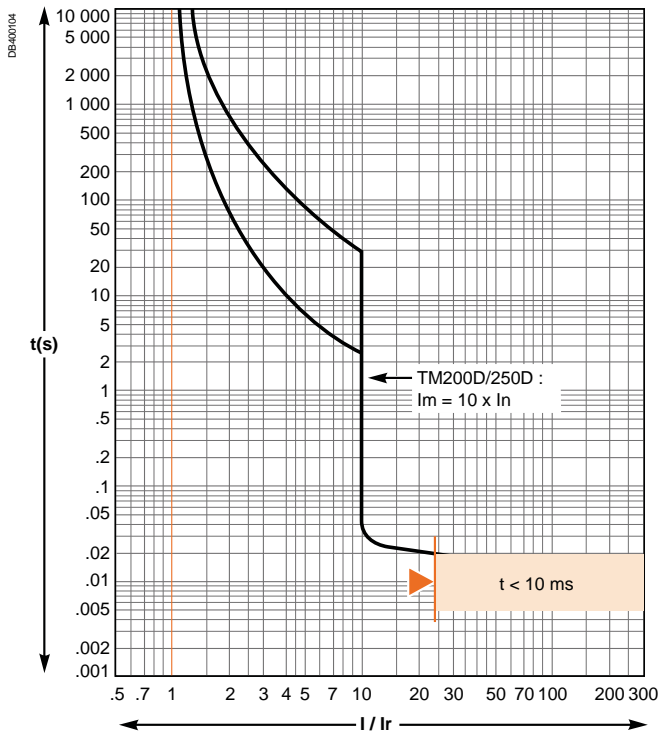
Reflex tripping.

### TM125D/160D



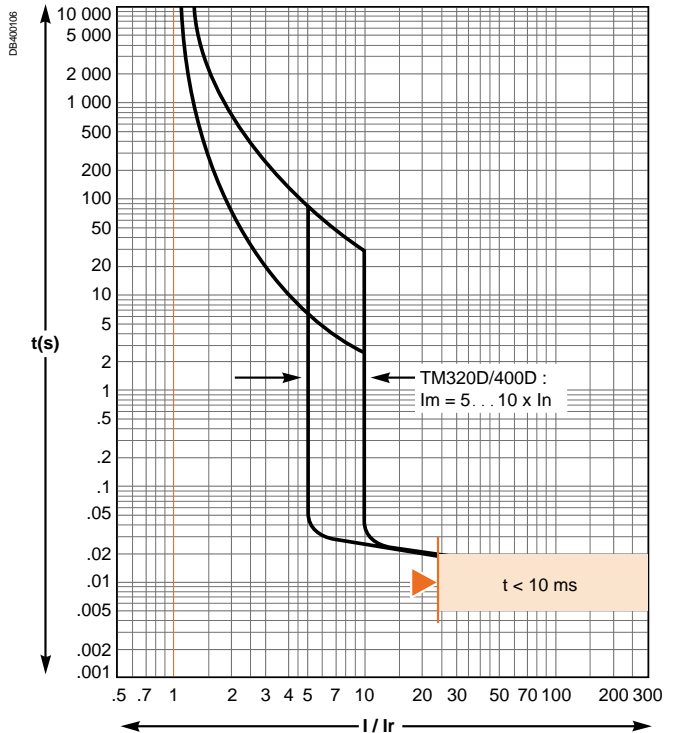
Reflex tripping.

### TM200D/250D



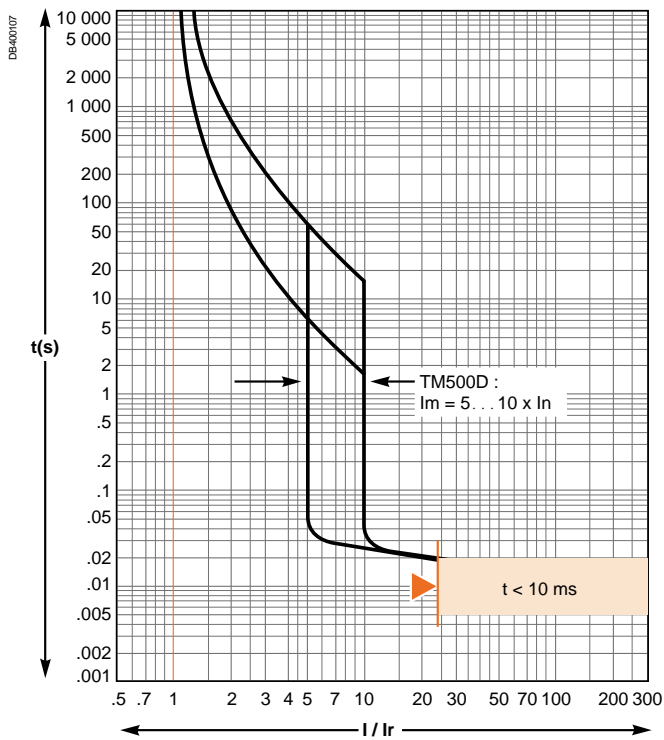
Reflex tripping.

### TM320D/400D



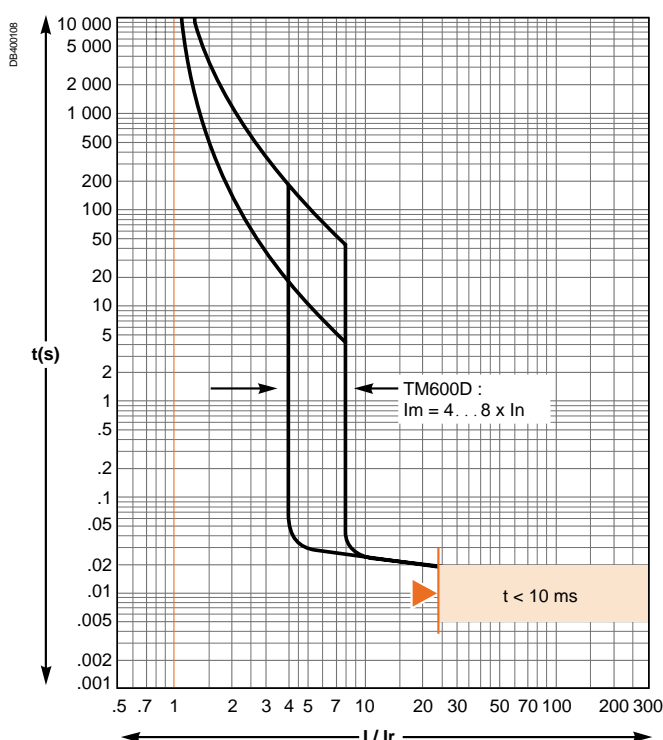
Reflex tripping.

### TM500D



Reflex tripping.

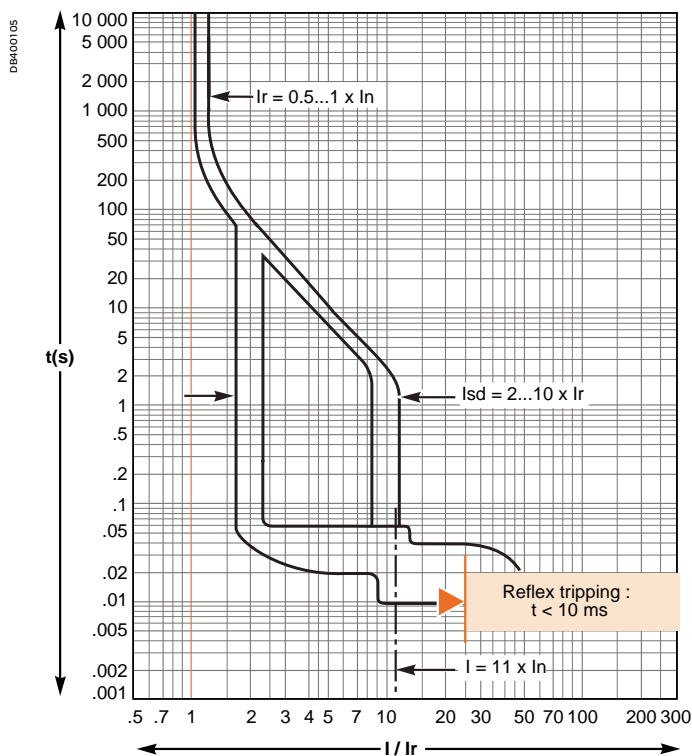
### TM600D



Reflex tripping.

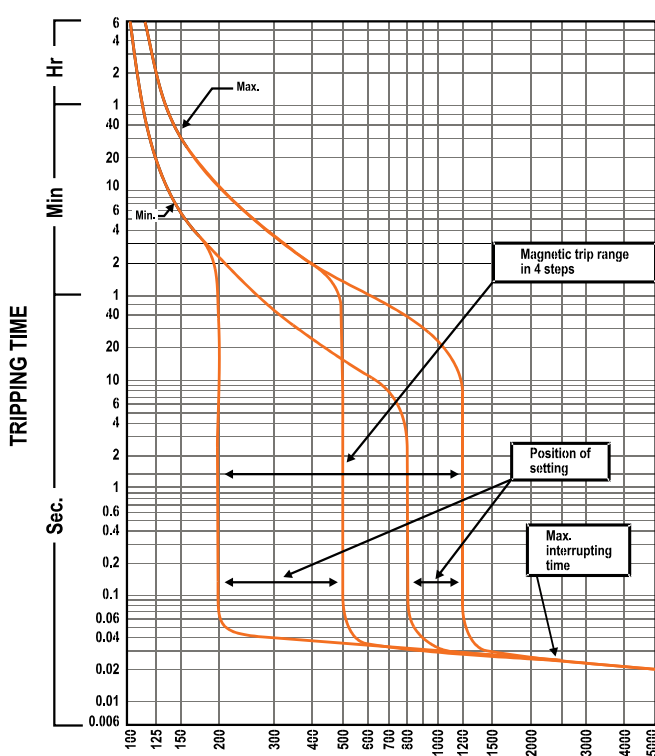
### ETS 2.3 electronic trip units

200 - 400A  
315 - 630A



### TM Magnetic Trip Unit

TM800D



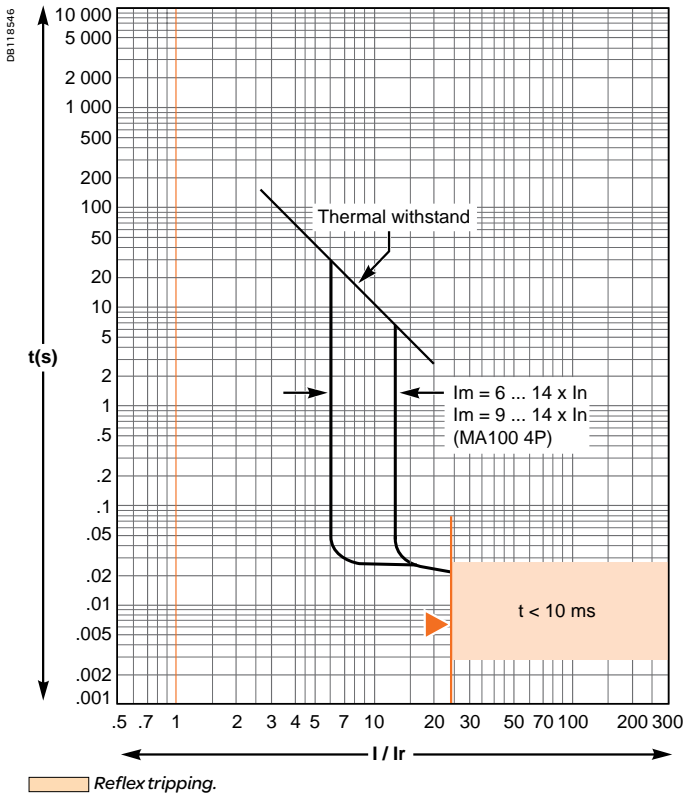
# Tripping curves

EasyPact CVS100 to 250

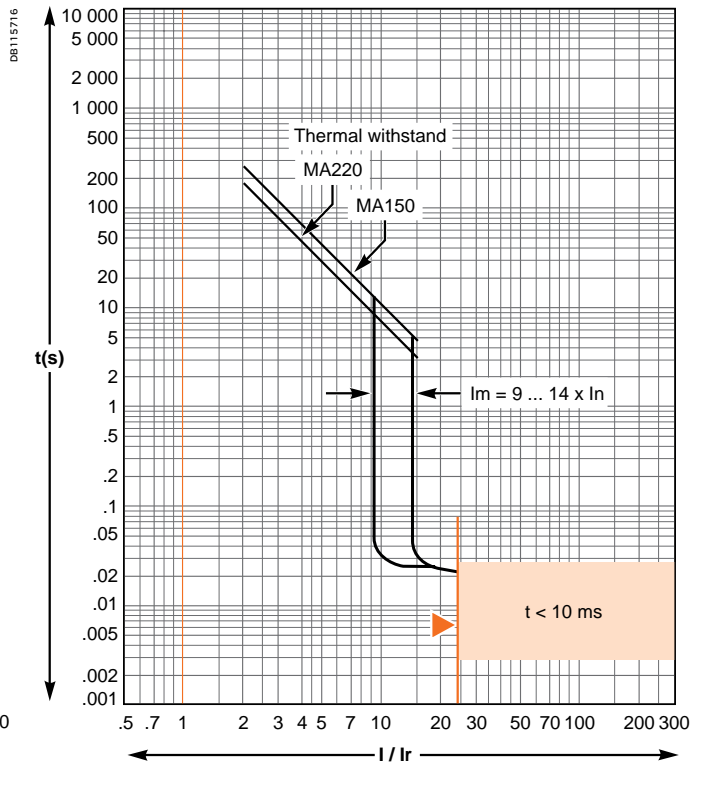
Motor protection

## MA magnetic trip units

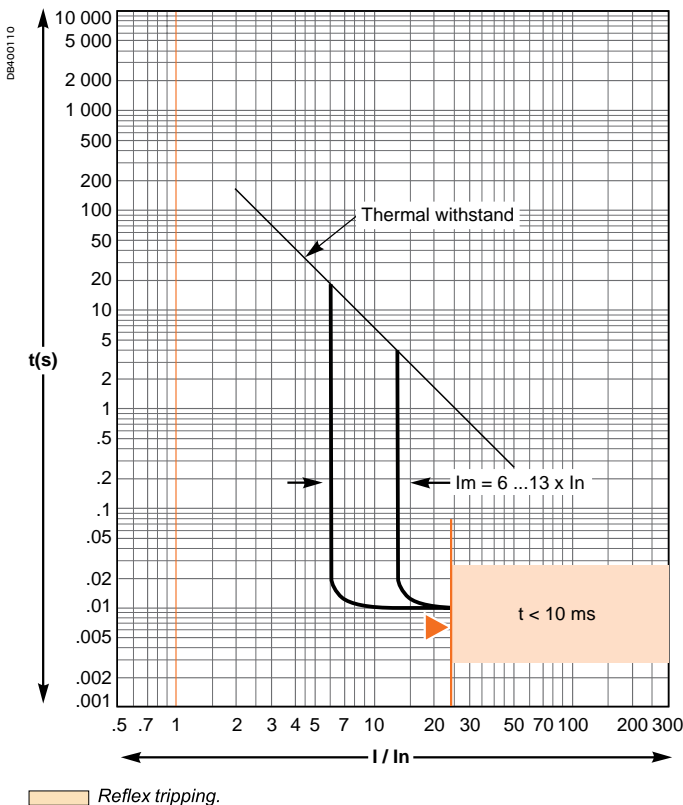
### MA2.5... MA100



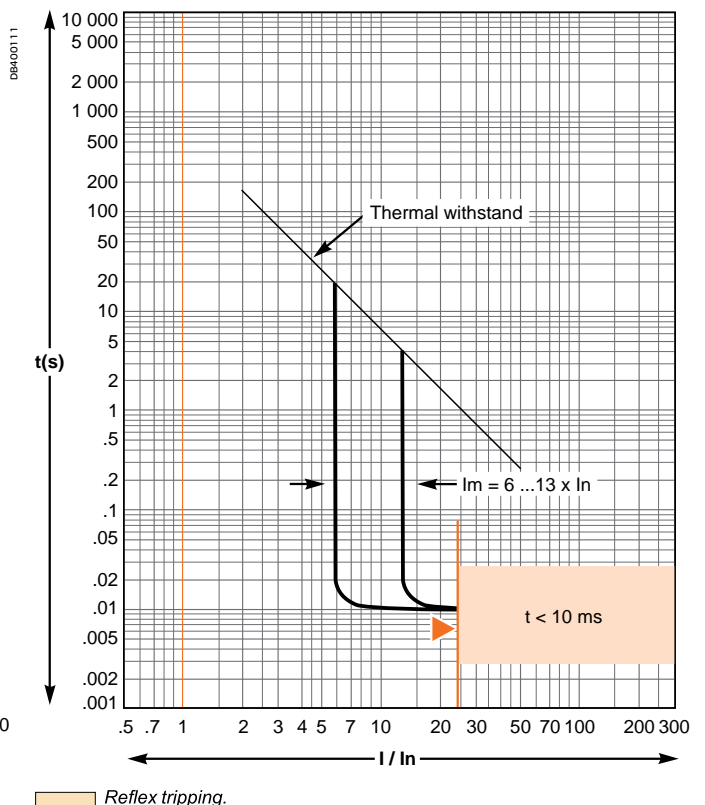
### MA150 and MA220



### MA320



### MA500



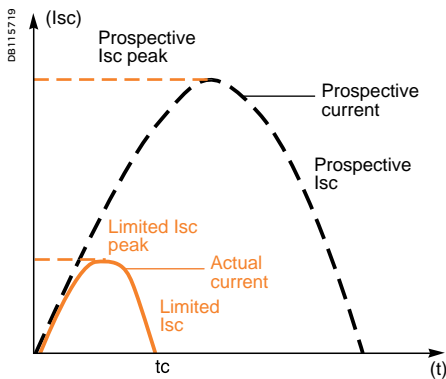
# Additional characteristics

100 to 800A

# Tripping curves

Current and energy limiting curves

The limiting capacity of a circuit breaker is its aptitude to let through a current, during a short-circuit, that is less than the prospective short-circuit current.



The exceptional limiting capacity of the EasyPact CVS range is due to the rotating double-break technique (very rapid natural repulsion of contacts and the appearance of two arc voltages in-series with a very steep wave front).

### Ics = 100 % Icu

The exceptional limiting capacity of the EasyPact CVS range greatly reduces the forces created by fault currents in devices.

The result is a major increase in breaking performance.

In particular, the service breaking capacity Ics is equal to 100 % of Icu.

The Ics value, defined by IEC standard 60947-2, is guaranteed by tests comprising the following steps:

- break three times consecutively a fault current equal to 100% of Icu
- check that the device continues to function normally, that is:
  - it conducts the rated current without abnormal temperature rise
  - protection functions perform within the limits specified by the standard
  - suitability for isolation is not impaired.

### Longer service life of electrical installations

Current-limiting circuit breakers greatly reduce the negative effects of short-circuits on installations.

#### Thermal effects

Less temperature rise in conductors, therefore longer service life for cables.

#### Mechanical effects

Reduced electrodynamic forces, therefore less risk of electrical contacts or busbars being deformed or broken.

#### Electromagnetic effects

Fewer disturbances for measuring devices located near electrical circuits.

### Current and energy limiting curves

The limiting capacity of a circuit breaker is expressed by two curves which are a function of the prospective short-circuit current (the current which would flow if no protection devices were installed):

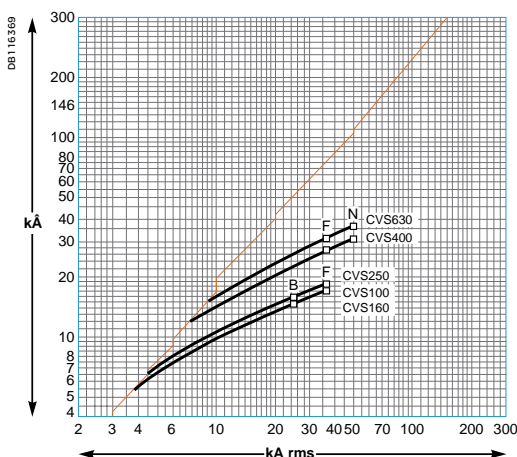
- the actual peak current (limited current)
- thermal stress (A<sup>2</sup>s), i.e. the energy dissipated by the short-circuit in a conductor with a resistance of 1  $\mu$ .

### Maximum permissible cable stresses

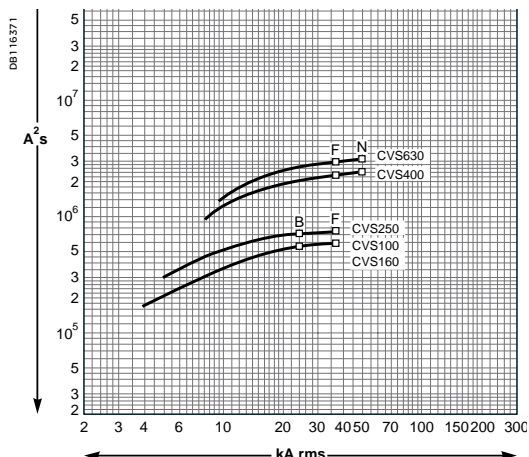
The table below indicates the maximum permissible thermal stresses for cables depending on their insulation, conductor (Cu or Al) and their cross-sectional area (CSA). CSA values are given in mm<sup>2</sup> and thermal stresses in A<sup>2</sup>s.

CSA		1.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	4 mm <sup>2</sup>	6 mm <sup>2</sup>	10 mm <sup>2</sup>
PVC	Cu	2.97x10 <sup>4</sup>	8.26x10 <sup>4</sup>	2.12x10 <sup>5</sup>	4.76x10 <sup>5</sup>	1.32x10 <sup>6</sup>
	Al					5.41x10 <sup>5</sup>
PRC	Cu	4.10x10 <sup>4</sup>	1.39x10 <sup>5</sup>	2.92x10 <sup>5</sup>	6.56x10 <sup>5</sup>	1.82x10 <sup>6</sup>
	Al					7.52x10 <sup>5</sup>
CSA		16 mm <sup>2</sup>	25 mm <sup>2</sup>	35 mm <sup>2</sup>	50 mm <sup>2</sup>	
PVC	Cu	3.4x10 <sup>6</sup>	8.26x10 <sup>6</sup>	1.62x10 <sup>7</sup>	3.31x10 <sup>7</sup>	
	Al	1.39x10 <sup>6</sup>	3.38x10 <sup>6</sup>	6.64x10 <sup>6</sup>	1.35x10 <sup>7</sup>	
PRC	Cu	4.69x10 <sup>6</sup>	1.39x10 <sup>7</sup>	2.23x10 <sup>7</sup>	4.56x10 <sup>7</sup>	
	Al	1.93x10 <sup>6</sup>	4.70x10 <sup>6</sup>	9.23x10 <sup>6</sup>	1.88x10 <sup>7</sup>	

### Current-limiting curves



### Energy-limiting curves



# Catalogue numbers

EasyPact CVS

Catalogue numbers

Contents

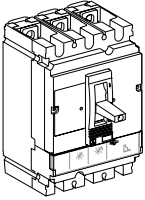
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<b>EasyPact CVS400 to 630</b>	<b>E-9</b>
<b>EasyPact CVS 800</b>	<b>E-15</b>



## EasyPact CVS100/160/250B

With TM-D thermal-magnetic trip unit

DB400150



### EasyPact CVS100B (25 kA at 380/415 V)

Rating	3P	4P
TM16D	LV510300	LV510310
TM25D	LV510301	LV510311
TM32D	LV510302	LV510312
TM40D	LV510303	LV510313
TM50D	LV510304	LV510314
TM63D	LV510305	LV510315
TM80D	LV510306	LV510316
TM100D	LV510307	LV510317

### EasyPact CVS160B (25 kA at 380/415 V)

Rating	3P	4P
TM100D	LV516301	LV516311
TM125D	LV516302	LV516312
TM160D	LV516303	LV516313

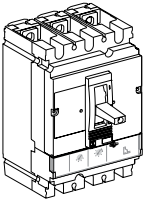
### EasyPact CVS250B (25 kA at 380/415 V)

Rating	3P	4P
TM160D	LV525301	LV525311
TM200D	LV525302	LV525312
TM250D	LV525303	LV525313

## EasyPact CVS100/160/250F

With TM-D thermal-magnetic trip unit

DB400150



### EasyPact CVS100F (36 kA at 380/415 V)

Rating	3P	4P
TM16D	LV510330	LV510340
TM25D	LV510331	LV510341
TM32D	LV510332	LV510342
TM40D	LV510333	LV510343
TM50D	LV510334	LV510344
TM63D	LV510335	LV510345
TM80D	LV510336	LV510346
TM100D	LV510337	LV510347

### EasyPact CVS160F (36 kA at 380/415 V)

Rating	3P	4P
TM100D	LV516331	LV516341
TM125D	LV516332	LV516342
TM160D	LV516333	LV516343

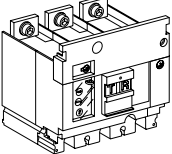
### EasyPact CVS250F (36 kA at 380/415 V)

Rating	3P	4P
TM160D	LV525331	LV525341
TM200D	LV525332	LV525342
TM250D	LV525333	LV525343

## + Vigi module for insulation monitoring

Vigi module

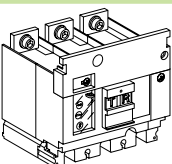
DB112249



	3P	4P
ME type for CVS/NSX100/160 (200 to 440 V)	LV429212	LV429213
MH type for CVS/NSX100/160 (200 to 440 V)	LV429210	LV429211
MH type for CVS/NSX250 (200 to 440 V)	LV431535	LV431536
MH type for CVS/NSX100/160 (440 to 550 V)	LV429215	LV429216
MH type for CVS/NSX250 (440 to 550 V)	LV431533	LV431534
Connection for a 4P Vigi on a 3P breaker		LV429214

Insulation monitoring module

DB112249



	3P	4P
200 to 440 V AC	LV429459	LV429460
Connection for a 4P insulation monitoring module on a 3P breaker		LV429214

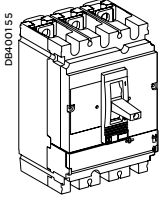


# EasyPact CVS100/160/250N: complete fixed/FC device

MA magnetic trip unit (50 kA 380/415 V)

## EasyPact CVS100/160/250F

### With MA magnetic trip unit



#### EasyPact CVS100N (50 kA at 380/415 V)

Rating	3P
MA2.5	LV510450
MA6.3	LV510451
MA12.5	LV510452
MA25	LV510453
MA50	LV510454
MA100	LV510455

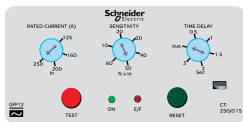
#### EasyPact CVS160N (50 kA at 380/415 V)

Rating	3P
MA150	LV516451

#### EasyPact CVS250N (50 kA at 380/415 V)

Rating	3P
MA220	LV525442

## Ground Fault Protection

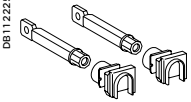


	Ref. 32/40/50/63/80/100	Ref. 125/160/200/250
3 PH 3W	GFP11CT13P	GFP12CT23P
3 PH 4W	GFP11CT14P	GFP12CT24P

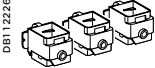
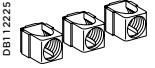

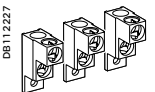

**Note:** Kindly order one nos. shunt coil along with one Ground Fault Protection

Connection accessories (Cu or Al)

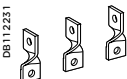

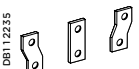
Rear connections

	2 short		LV429235
	2 long		LV429236

Bare cable connectors

	Steel connectors	1 x (1.5 to 95 mm <sup>2</sup> ); y 160 A	Set of 3	LV429242
		Set of 4	LV429243	
	Aluminium connectors	1 x (25 to 95 mm <sup>2</sup> ); y 250 A	Set of 3	LV429227
			Set of 4	LV429228
		1 x (120 to 185 mm <sup>2</sup> ); y 250 A	Set of 3	LV429259
			Set of 4	LV429260
	Clips for connectors		Set of 10	LV429241
	Aluminium connectors for 2 cables <sup>(1)</sup>	2 x (50 to 120 mm <sup>2</sup> ); y 250 A	Set of 3	LV429218
			Set of 4	LV429219
	6.35 mm voltage tap for steel or aluminium connectors		Set of 10	LV429348

Terminal extensions

	Edgewise terminal extensions <sup>(1)</sup>		Set of 4	LV429309
	Right-angle terminal extensions <sup>(1)</sup>		Set of 3	LV429261
			Set of 4	LV429262
	Straight terminal extensions <sup>(1)</sup>		Set of 3	LV429263
			Set of 4	LV429264
	Spreaders from 35 to 45 mm pitch <sup>(1)</sup>		3P	LV431563
			4P	LV431564

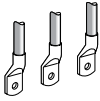
<sup>(1)</sup> Supplied with 2 or 3 interphase barriers.

# Accessories

## EasyPact CVS100/160/250

### Crimp lugs for copper cable <sup>(1)</sup>

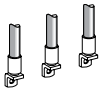
DB112237



For cable 120 mm <sup>2</sup>	Set of 3	LV429252
	Set of 4	LV429256
For cable 150 mm <sup>2</sup>	Set of 3	LV429253
	Set of 4	LV429257
For cable 185 mm <sup>2</sup>	Set of 3	LV429254
	Set of 4	LV429258

### Crimp lugs for aluminium cable <sup>(1)</sup>

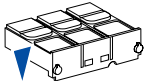
DB112238



For cable 150 mm <sup>2</sup>	Set of 3	LV429504
	Set of 4	LV429505
For cable 185 mm <sup>2</sup>	Set of 3	LV429506
	Set of 4	LV429507

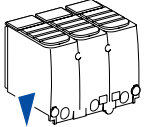
### Insulation accessories

DB400161



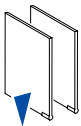
1 short terminal shield for breaker	3 P	LV429515
	4 P	LV429516

DB400162



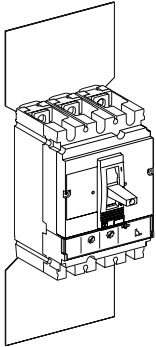
1 long terminal shield for breaker	3 P	LV429517
	4 P	LV429518

DB112241



Interphase barriers for breaker	Set of 6	LV429329
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DB400163




2 insulating screens for breaker (45 mm pitch)	3 P	LV429330
	4 P	LV429331


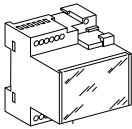

<sup>(1)</sup> Supplied with 2 or 3 interphase barriers.

## Electrical auxiliaries

### Auxiliary contacts (changeover)

DB112254 	OF or SD or SDE or SDV	29450
	OF or SD or SDE or SDV low level	29452
	SDE adaptor, mandatory for trip unit TM, MA	LV429451

### Voltage releases

DB111464 	AC	Voltage	<b>MX</b>	<b>MN</b>
		24 V 50/60 Hz	LV429384	LV429404
	48 V 50/60 Hz	LV429385	LV429405	
	110-130 V 50/60 Hz	LV429386	LV429406	
	220-240 V 50/60 Hz and 208-277 V 60 Hz	LV429387	LV429407	
	380-415 V 50 Hz and 440-480 V 60 Hz	LV429388	LV429408	
DB115631  	DC	12 V	LV429382	LV429402
		24 V	LV429390	LV429410
		30 V	LV429391	LV429411
		48 V	LV429392	LV429412
		60 V	LV429383	LV429403
		125 V	LV429393	LV429413
		250 V	LV429394	LV429414
<b>MN 48 V 50/60 Hz with fixed time delay</b>				
Composed of:	MN 48 V DC		LV429412	
	Delay unit 48 V 50/60 Hz		LV429426	
<b>MN 220-240 V 50/60 Hz with fixed time delay</b>				
Composed of:	MN 250 V DC		LV429414	
	Delay unit 220-240 V 50/60 Hz		LV429427	

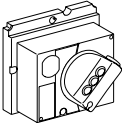
# Accessories

## EasyPact CVS100/160/250

### Rotary handles

#### Direct rotary handle

DB112259

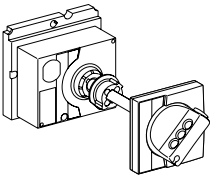


With black handle

LV429337

#### Extended rotary handle

DB112260



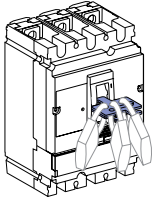
With black handle

LV429338

### Locks

#### Toggle locking device for 1 to 3 padlocks

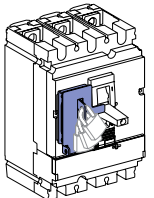
DB400164



By removable device

29370

DB400165

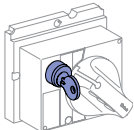


By fixed device

29371

#### Locking of rotary handle

DB112263



Keylock adaptor (keylock not included)

LV429344

Keylock (keylock adaptor not included)

Ronis 1351B.500

41940

Profalux KS5 B24 D4Z

42888

**Interlocking**

**Mechanical interlocking for circuit breakers**

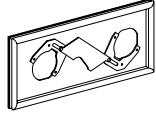
DB11486



With toggles

29354

DB11487

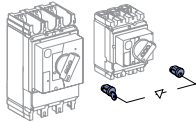


With rotary handles

LV429369

**Mechanical interlocking for circuit breakers**

DB11268



Keylock kit (keylock not included) (1)

LV429344

1 set of 2 keylocks

Ronis 1351B.500

41950

(1 key only, keylock kit not included)

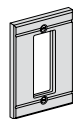
Profalux KS5 B24 D4Z

42878

**Installation accessories**

**Front-panel escutcheons**

EZ1641



IP40

IP40 toggle escutcheon (small cut-out)

29315

IP40 escutcheon for Rotary handle

LV429317

IP40 escutcheon for Vigi module

LV429316

**Lead-sealing accessories**

DB115615

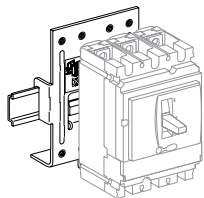


Bag of accessories

LV429375

**Din rail adaptor**

DB112739

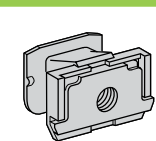


1 adaptor

LV429305

**Spare parts**

E18624



10 toggle extensions

LV429313

Bag of screws

LV429312

12 snap-in nuts (fixed/FC)

M6 for CVS100B/F

LV510100

M8 for CVS160/250B/F

LV516060

1 set of 10 identification labels

LV429226

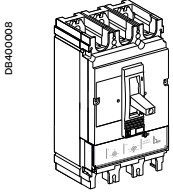
For only 1 device.

# CVS400/630: complete fixed/FC device

EasyPact CVS400/630F/N

## EasyPact CVS400/630F

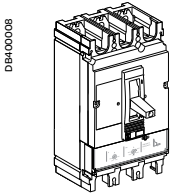
With TM-D thermal-magnetic trip unit



EasyPact CVS400F (36 kA at 380/415 V)			
Rating		3P	4P
TM320D		LV540305	LV540308
TM400D		LV540306	LV540309
EasyPact CVS630F (36 kA at 380/415 V)			
Rating		3P	4P
TM500D		LV563305	LV563308
TM600D		LV563306	LV563309

## EasyPact CVS400/630N

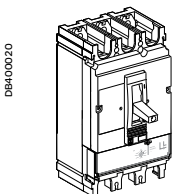
With TM-D thermal-magnetic trip unit



EasyPact CVS400N (50 kA at 380/415 V)			
Rating		3P	4P
TM320D		LV540315	LV540318
TM400D		LV540316	LV540319
EasyPact CVS630N (50 kA at 380/415 V)			
Rating		3P	4P
TM500D		LV563315	LV563318
TM600D		LV563316	LV563319

## EasyPact CVS400/630N

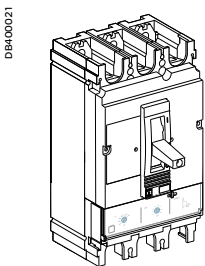
With MA magnetic trip unit



EasyPact CVS400N (50 kA at 380/415 V)			
Rating		3P	
MA320		LV540552	
EasyPact CVS630N (50 kA at 380/415 V)			
Rating			
MA500		LV563552	

## EasyPact CVS400/630F

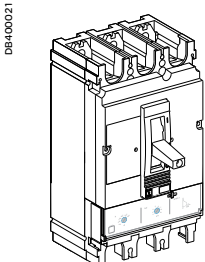
ETS 2.3 electronic trip unit (protection)



EasyPact CVS400F (36 kA at 380/415 V)			
		3P	4P
EasyPact CVS400F (36 kA at 380/415 V)	400 A	LV540505	LV540506
EasyPact CVS630F (36 kA at 380/415 V)	630 A	LV563505	LV563506

## EasyPact CVS400/630N

ETS 2.3 electronic trip unit (protection)



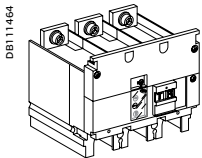
EasyPact CVS400N (50 kA at 380/415 V)			
		3P	4P
EasyPact CVS400N (50 kA at 380/415 V)	400 A	LV540510	LV540511
EasyPact CVS630N (50 kA at 380/415 V)	630 A	LV563510	LV563511

# CVS400/630: complete fixed/FC device

EasyPact CVS400/630N (36 kA 380/415 V)

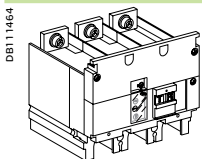
**+ Vigi module or insulation monitoring module**

**Vigi module**



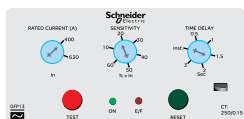
Type MB		3P	4P
	200 to 440 V	LV432455	LV432456
	440 to 550 V	LV432453	LV432454
Connection for a 4P Vigi on a 3P breaker			LV432457

**Insulation monitoring module**



		3P	4P
	200 to 440 V AC	LV432659	LV432660
Connection for a 4P insulation monitoring module on a 3P breaker			LV432457

**Ref. 400/630**



3 PH 3W	GFP13CT33P
3 PH 4W	GFP13CT34P

**Note:** Kindly order one nos. shunt coil along with one Ground Fault Protection




# Accessories



## EasyPact CVS400/630

### Connection accessories (Cu or Al)




#### Rear connections

DB112225		2 short		LV432475
		2 long		LV432476


#### Cable connectors<sup>(1)</sup>

E22040		Aluminium connector 1x (35 to 300 mm <sup>2</sup> )	Set of 3	LV432479
			Set of 4	LV432480
E22041		Aluminium connector 2x (35 to 300 mm <sup>2</sup> )	Set of 3	LV432481
			Set of 4	LV432482
		Voltage plug for aluminium connector 1 or 2 cables	Set of 10	LV429348

#### Terminal extension<sup>(1)</sup>

E21276		Right-angle terminal extension	Set of 3	LV432484
			Set of 4	LV432485
E21012		Edgewise terminal extensions	Set of 3	LV432486
			Set of 4	LV432487
E21012		Spreaders	52.5 mm 3P	LV432490
			4P	LV432491
		70 mm	3P	32492
			4P	32493




#### Crimp lugs for copper cable<sup>(1)</sup>

E19602		For cable 240 mm <sup>2</sup>	Set of 3	LV432500
			Set of 4	LV432501
		For cable 300 mm <sup>2</sup>	Set of 3	LV432502
			Set of 4	LV432503
		Supplied with 2 (or 3) interphase barriers		

#### Crimp lugs for aluminium cable<sup>(1)</sup>


E30908		For cable 240 mm <sup>2</sup>	Set of 3	LV432504
			Set of 4	LV432505
		For cable 300 mm <sup>2</sup>	Set of 3	LV432506
			Set of 4	LV432507
		Supplied with 2 (or 3) interphase barriers		

#### Insulation accessories


E18618		Short terminal shield, 45 mm (1 piece)	3P	LV432591
			4P	LV432592
E18606		Long terminal shield, 45 mm (1 piece)	3P	LV432593
			4P	LV432594
		Interphase barriers	Set of 6	LV432570
E18606		2 insulating screens (70 mm pitch)	52,5 mm 3P	LV432595
			4P	LV432596
		70 mm	3P	LV432578
			4P	LV432579

**Electrical auxiliaries**

**Auxiliary contacts (changeover)**

	OF or SD or SDE or SDV	29450
	OF or SD or SDE or SDV low level	29452
	SDE adaptor mandatory for trip unit TM, MA and ETS2.3	LV540050

**Voltage releases**

		<b>Voltage</b>	<b>MX</b>	<b>MN</b>
	AC	24 V 50/60 Hz	LV429384	LV429404
		48 V 50/60 Hz	LV429385	LV429405
		110-130 V 50/60 Hz	LV429386	LV429406
		220-240 V 50/60 Hz and 208-277 V 60 Hz	LV429387	LV429407
		380-415 V 50 Hz and 440-480 V 60 Hz	LV429388	LV429408
		DC	Voltage	
	DC	12 V	LV429382	LV429402
		24 V	LV429390	LV429410
		30 V	LV429391	LV429411
		48 V	LV429392	LV429412
		60 V	LV429383	LV429403
		125 V	LV429393	LV429413
		250 V	LV429394	LV429414
		<b>MN 48 V 50/60 Hz with fixed time delay</b>		
Composed of:	MN 48 V DC		LV429412	
	Delay unit 48 V 50/60 Hz		LV429426	
<b>MN 220-240 V 50/60 Hz with fixed time delay</b>				
Composed of:	MN 250 V DC		LV429414	
	Delay unit 220-240 V 50/60 Hz		LV429427	

# Accessories

## EasyPact CVS400/630

### Rotary handle

#### Direct rotary handle



E18611		Standard black handle	LV432597
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#### Extended rotary handle


E18612		Standard extended rotary handle	LV432598
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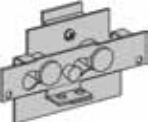





### Locks

#### Toggle locking device for 1 to 3 padlocks

E18621		By removable device	29370
E18613		By fixed device	32631

#### Locking of the rotary handle

E18620		Keylock adaptor (keylock not included)	LV432604
		Keylock (keylock adaptor not included)	41940
		Ronis 1351B.500	41940
		Profalux KS5 B24 D4Z	42888

Interlocking			
<b>Mechanical interlocking for circuit breakers</b>			
 	With toggles	32614	
	With rotary handles	LV432621	
<b>Interlocking with key (2 keylocks/1 key) for rotary handles</b>			
	Keylock kit (keylock not included) <sup>(1)</sup>	LV432604	
	1 set of 2 keylocks (1 key only, keylock kit not included)	Ronis 135 1B.500	41950
		Profalux KS5 B24 D4Z	42878
	(1) for only 1 device		
<b>Installation accessories</b>			
<b>Front-panel escutcheons</b>			
	IP40 Toggle escutcheon (small cut-out)	32556	
	IP40 escutcheon for rotary handle	LV432558	
	IP40 escutcheon for Vigi module	LV429316	
<b>Lead-sealing accessories</b>			
		LV429375	
<b>Spare parts</b>			
<b>Front-panel escutcheons</b>			
	Toggle extension	LV432553	
	Bag of screws	LV432552	
	1 set of 10 identification labels	LV429226	
<b>Test</b>			
<b>Test kits</b>			
	Mini test kit for STR trip units	43362	
	Portable test kit for STR trip units	34547	
	Spare test plug for portable test kit 34547	34503	
	Wiring kit (spare part)	34546	

# EasyPact CVS MCCBs and accessories catalogue nos. for 800A

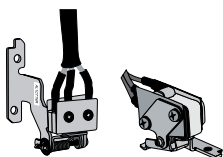
## EasyPact CVS 800

### With TM-D thermal -magnetic trip unit



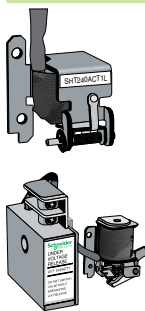
<b>EasyPact CVS 800 (35kA at 380/415 V)</b>		
<b>Rating</b>	<b>3P</b>	<b>4P</b>
TM800D	LV580300	LV580301
<b>EasyPact CVS 800 (50kA at 380/415 V)</b>		
<b>Rating</b>	<b>3P</b>	<b>4P</b>
TM800D	LV580302	LV580303

### Auxiliary contacts ON/OFF/Trip (change - over)



	Ref.
Auxiliary Contact 1 C/O	LV580075
Auxiliary Contact 2 C/O	LV580076
Alarm Contact 1 C/O	LV580077
Alarm Contact 2 C/O	LV580078
Alarm Auxiliary Contact	LV580079

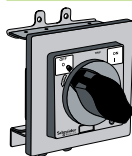
### Shunt/Under voltage coil



	Shunt/Under voltage	Ref. Shunt (MX)	Ref. Under Voltage (MN)
AC 50Hz	110-130 V	LV580060	LV580070
	220-240 V	LV580061	LV580071
	380-415 V	LV580062	LV580072
	440 V	LV580063	
	<b>voltage</b>	<b>Reference</b>	
DC	24 V	LV580064	
	48 V	LV580065	
	110 V	LV580066	
	220 V	LV580067	

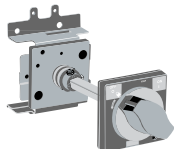
### Rotary handles

#### Direct rotary handles



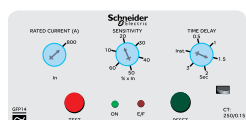
Ref.
LV580080

#### Extended rotary handle



Ref.
LV580081

### Ground Fault Protection



	Ground Fault Relay + CT Ref.
3 Phase 3 Wire	GFP14CT43P
3 Phase 4 Wire	GFP14CT44P

**Note:** Kindly order one nos. shunt coil along with one Ground Fault Protection  
Order one auxilliary contact alongwith shunt coil for CVS800.



Make the most of your energy



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