EcoStruxure™
Innovation At Every Level

Easy Series

EasyPact™ MVS New Energy

Catalog 2024

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More than 75% of our product sales offer superior transparency on the material content, regulatory information and environmental impact of our products:

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Easy Choice For Reliable Performance

One family and One frame size

EasyPact MVS Type T3 AC Circuit Breaker

> 800 to 4000 A ratings
> Suitable for 1140 Vac applications
> Complete selectivity with Icu=Ics=Icw 1s=66 kA
> Fixed and drawout versions
> 3 poles
> Conforms to IEC60947-2

T3 66kA							
800 A	1000 A	1250 A	1600 A	2000 A	2500 A	3200 A	4000 A

Product Dimension (mm)

Drawout type (H x W x D)

Fixed type (H x W x D)

Easy Choice For Reliable Performance

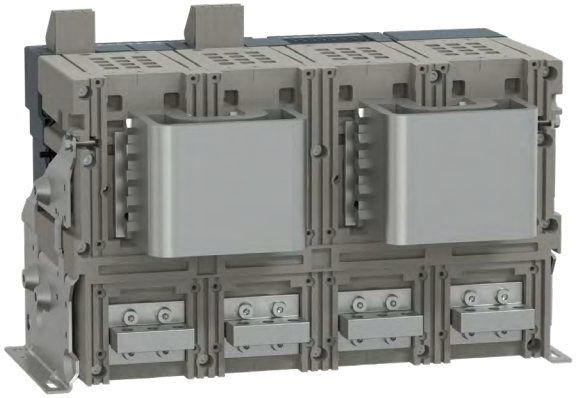
One family and One frame size

EasyPact MVS DA1 DC Switch-disconnector

> 1600 to 4000 A ratings
> Suitable for 1500 Vdc applications
> Complete selectivity with Icm=Icw 1s=100 kA
> Fixed version
> 4 poles
> Conforms to IEC60947-3 (1600-4000A)
UL489B-PV2 (1600-3200 A)
UL489 (1600-3200 A)

Product Dimension (mm)

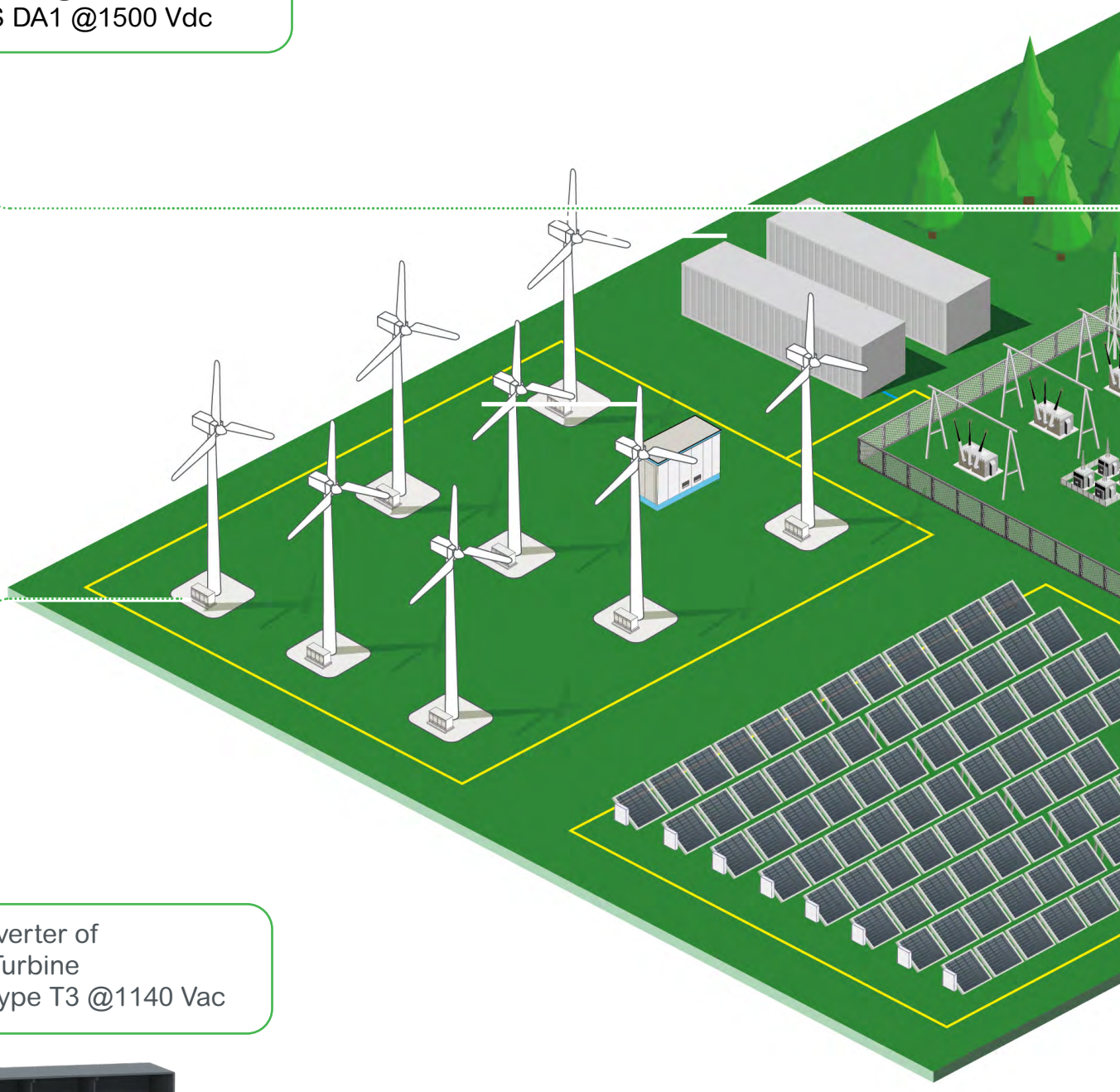
Fixed type (H x W x D)



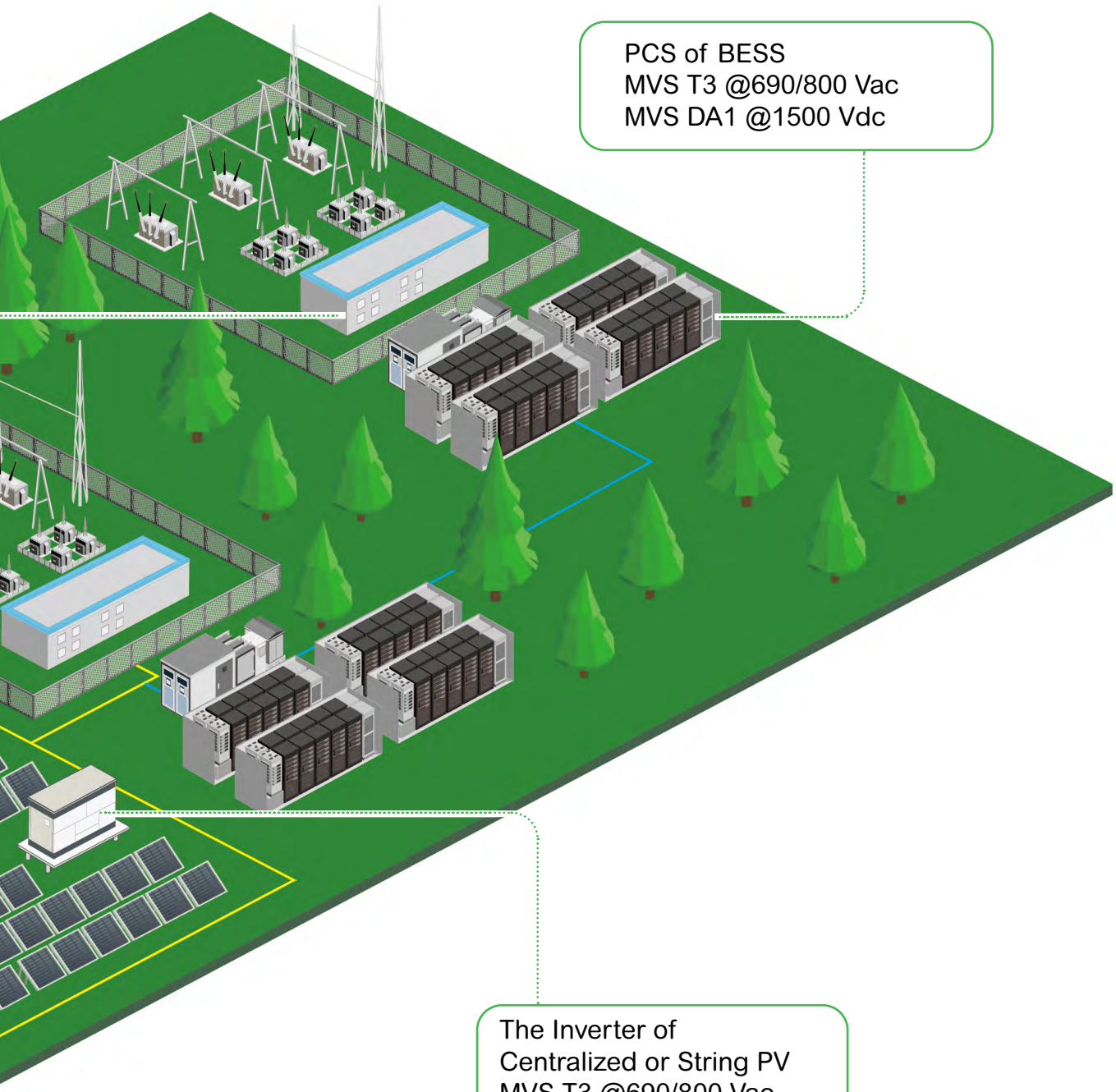
Rear connection

New Energy Application

LV Side of Transformer
MVS T3 @690/800 Vac
MVS DA1 @1500 Vdc



The Inverter of
Wind Turbine
MVS Type T3 @1140 Vac



PCS of BESS
MVS T3 @690/800 Vac
MVS DA1 @1500 Vdc

The Inverter of
Centralized or String PV
MVS T3 @690/800 Vac
MVS DA1 @1500 Vdc

Gain peace of mind
Optimised cost for every installation

Exceptional reliability, flexibility, and convenience

Quality and safety you can trust

Performance without compromise

Outstanding value for an optimized feature set

PV

Wind

BESS

General Contents

EasyPact™ MVS

Functions and Characteristics

Functions and Characteristics

General Overview
Detailed Contents

The overview describes all the functions offered by EasyPact MVS devices.

CPB100000

Circuit Breakers
- Ratings:
  - EasyPact MVS 800 to 4000 A
- Circuit breakers type: T3
- 3 poles
- Fixed or draw-out versions

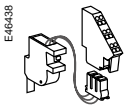
ETA Trip System with Current Measurement
- 6G selective + earth-fault protection
- Standard long-time rating plug:
  - Current setting (A) 0.4 to 1 x In
- External power-supply module

Switch-disconnectors
- Ratings:
  - EasyPact MVS1600 to 4000 A
- Switch-disconnectors type: DA1
- 4 poles
- Fixed versions
- Only one frame size

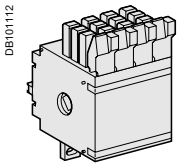
General Overview
Detailed Contents

Indication contacts

- ■ Standard:
- □ ON/OFF indication (OF)
- ■ Optional:
- □ Additional ON/OFF indication (OF)



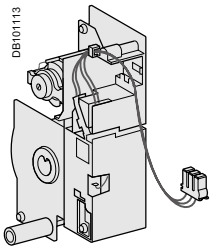
Ready-to-close contact



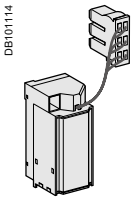
OF contact

Remote operation

- ■ Remote On/OFF
- □ Gear motor MCH
- □ XF closing or MX opening voltage releases
- ■ Remote Tripping function:
- □ MN voltage release
- - Standard
- - Adjustable or non-adjustable delay



Gear motor



MX, XF and MN volage releases

Circuit Breakers and Switch-disconnectors
MVS T3 and DA1

Circuit breaker

AC Circuit Breaker		
Circuit Breaker as per IEC 60947-2		
Rated current (A)	In	at 40 °C
Rated insulation voltage (Vac)	Ui	
Rated operational voltage (Vac)	Ue	
Rated impulse withstand voltage (kVac)	Uimp	
Ultimate breaking capacity (kA rms) Vac 50/60 Hz	Icu	800/1140 Vac
Rated service breaking capacity (kA rms)	Ics	% Icu
Rated short-time withstand current (kA rms) Vac 50/60 Hz	Icw 1s	800/1140 Vac
Rated making capacity (kA peak) Vac 50/60 Hz	Icm	800/1140 Vac
Standards		
Maintenance/Connection/Installation		
Service life C/O cycles x1000	Mechanical	with maintenance
		without maintenance
	Electrical	without maintenance
Connection	Horizontal	
Dimensions (mm) H x W x D	Draw-out	3P
	Fixed	3P
Weight (kg) (approximate)	Draw-out	3P
	Fixed	3P

Switch Disconnector

DC Switch Disconnector		
Circuit Breaker as per IEC 60947-3		
Rated current (A)	In	at 40 °C
Rated insulation voltage (Vdc)	Ui	
Rated operational voltage (Vdc)	Ue	
Rated impulse withstand voltage (kVdc)	Uimp	
Overload operation capacity		
Breaking capacity		
Rated short-time withstand current (kA rms)	Icw 0.2s	1500 Vdc
Rated short-time withstand current (kA rms)	Icw 1s	1500 Vdc
Rated closing capacity (kA peak)	Icm	1500 Vdc
Standards		
Maintenance/Connection/Installation		
Service life	Mechanical	with maintenance
C/O cycles x1000		without maintenance
	Electrical	without maintenance
Connection		
Dimensions (mm) H x W x D	Fixed	4P
Weight (kg) (approximate)	Fixed	4P

	EasyPact MVS T3							
	800	1000	1250	1600	2000	2500	3200	4000
	1250							
	800/1140 V							
	12							
	66	66	66	66	66	66	66	66
	100%	100%	100%	100%	100%	100%	100%	100%
	66	66	66	66	66	66	66	66
	145	145	145	145	145	145	145	145
	IEC60947-2							
	25	25	25	25	20	20	20	20
	12.5	12.5	12.5	12.5	10	10	10	10
	1500	1500	1500	1500	1500	1000	1000	500
	Horizontal							
	439 x 441 x 395							
	395 x 422 x 297							
	70							
	40							

	EasyPact MVS DA1					
		1600	2000	2500	3200	4000
		1600				
		1500				
		15				
		2 In, ON/OFF 25 times				
		10 In, ON/OFF 3 times				
		150	150	150	150	150
		100	100	100	100	100
		100	100	100	100	100
		IEC60947-3 (1600-4000 A), UL489B-PV2 (1600-3200 A), UL489 (1600-3200 A)				
		20	20	20	20	20
		10	10	10	10	10
		2000	2000	2000	2000	1500
		Horizontal and vertical connection				
		352 x 537 x 297				
		80				

Identifying ET Range of Trip System

EasyPact MVS T3 circuit breakers equipped with ETA range of trip system are designed to protect power circuit and connected loads.
Measurement of current help users to maintain continuity of service and optimize installation.

Dependability

Integration of protection functions in an ASIC electronic component used in all trip units guarantees a high degree of reliability and immunity to conducted or radiated disturbances.
On ETA range, measurement functions are managed by an independent microprocessor. Protection functions are independent of measurement functions, ensure system protection even at very low load currents.

Accessories

Certain functions require the addition of trip unit accessories, described on page A-17.

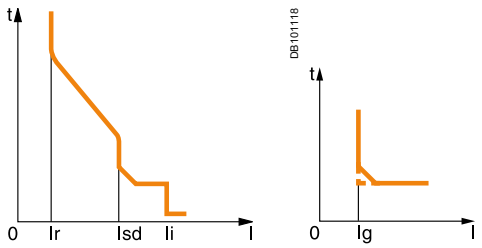
Trip Unit Name Codes

Type of protection
- 6G for selective + earth-fault protection

Type of measurement
- ETA for “Current”

Protection and Measure Function
ETA
■ I_1, I_2, I_3, I_N, $I_{earth-fault}$, and maximeter for these measurements: □ Fault indications □ Settings in amperes and in seconds

ETA6G: Selective + earth-fault protection

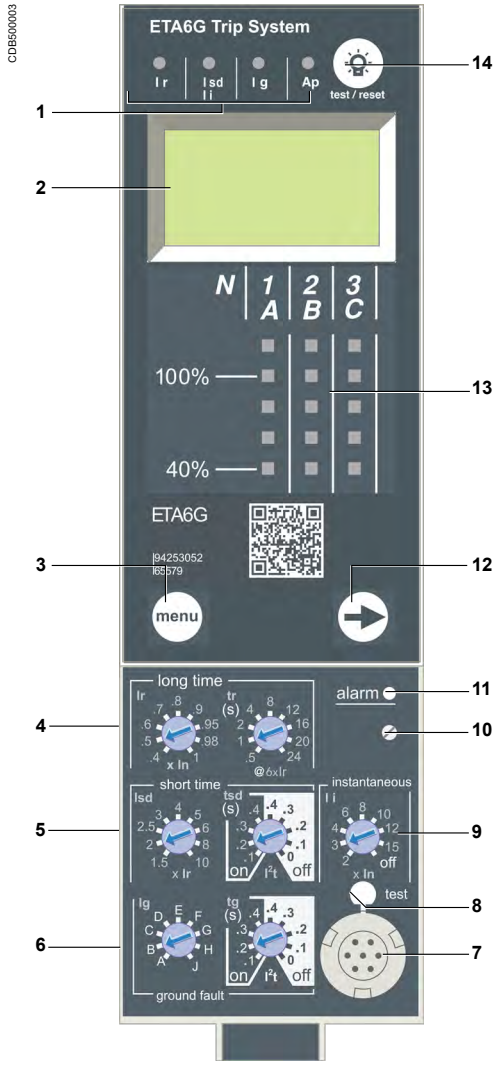


ETA6G

Protection:
long time
+ short time
+ instantaneous
+ earth fault

Overview of Functions
ETA Trip System

ETA trip units include all functions offered by ET trip unit. In addition, they also offer measurements, display and current maximeters.



1 *Indication of tripping cause*
2 *Digital display*
3 *Navigation button to change menu*
4 *Long-time threshold and tripping delay*
5 *Short-time pick-up and tripping delay*
6 *Earth-fault pick-up and tripping delay*
7 *Test connector*
8 *Earth-fault test button*
9 *Instantaneous pick-up*
10 *Long-time rating plug screw*
11 *Overload alarm (LED) at 1,125 Ir*
12 *Navigation button to view menu contents*
13 *Three-phase bargraph and ammeter*
14 *Lamp test, reset and battery test*

(1) The thermal memory continuously accounts for the amount of heat in the cables , both before and after tripping , whatever the value of the current (presence of an overload or not).The thermal memory optimises the long-time protection function of the circuit breaker by taking into account the temperature rise in the cables .The thermal memory assumes a cable cooling time of approximately 20 minutes.
(2) Refer to page D-5 for more details on ZSI.

***Note:** ETA trip units come with a transparent leadseal cover as standard.*

Ammeter Measurements
ETA trip units measure the true (rms) value of currents.
They provide continuous current measurements from 0.2 to 1.2 In and are accurate to within 1.5 % (including the sensors).
A digital LCD screen continuously displays the most heavily loaded phase (Imax) or displays the I_1, I_2, I_3, I_N, I_g, stored-current (maximeter) and setting values by successively pressing the navigation button.
The optional external power supply makes it possible to display currents < 20 % In. Below 0.1 In, measurements are not significant. Between 0.1 and 0.2 In, accuracy changes linearly from 4 % to 1.5 %.

Protection
Protection thresholds and delays are set using the adjustment dials.

Overload Protection
True rms long-time protection.
Protects cables (phase and neutral) against overloads.
Thermal memory(1): thermal image before and after tripping.

Short-time Protection
- The short-time protection function protects the distribution system against impedant short-circuits.
- The short-time tripping delay can be used to ensure discrimination with downstream circuit breaker.
- The I^2t ON and I^2t OFF options enhance discrimination with a downstream protection devices.
- Use of I^2t curves with short-time protection:
  - I^2t OFF selected: the protection function implements a constant time curve.
  - I^2t ON selected: the protection function implements an I^2t inverse-time curve up to 10 Ir. Above 10 Ir, the time curve is constant.

Earth-fault Protection on ETA6G Trip System
Residual earth fault protection.
Selection of I^2t type (ON or OFF) for delay.
A ground fault in the protection conductors can provoke local temperature rise at the site of the fault or in the conductors. The purpose of the ground-fault protection function is to eliminate this type of fault.

Type	Description
Residual	■ The function determines the zero-phase sequence current, i.e. the vectorial sum of the phase and neutral currents. ■ It detects faults downstream of the circuit breaker.

Instantaneous Protection
The Instantaneous-protection function protects the distribution system against solid short-circuits. Contrary to the short-time protection function, the tripping delay for instantaneous protection is not adjustable. The tripping order is sent to the circuit breaker as soon as current exceeds the set value, with a fixed time delay of 20 milliseconds.

Neutral Protection
On three-pole circuit breakers, neutral protection is not possible.

Zone Selective Interlocking (ZSI)
A ZSI(2) terminal block may be used to interconnect a number of control units to provide total discrimination for short-time and earth-fault protection, without a delay before tripping.

Overload Alarm
A yellow alarm LED goes on when the current exceeds the long-time trip threshold.

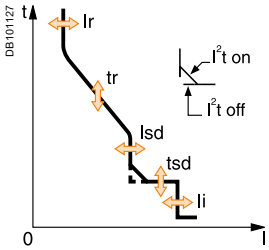
Fault Indications
LEDs indicate the type of fault:
- Overload (long-time protection Ir)
- Short-circuit (short-time Isd or instantaneous Ii protection)
- Earth fault (Ig)
- Internal fault (Ap)

Battery Power
The fault indicating LEDs are powered by an in-built battery. The fault indication LEDs remain on until the test/reset button is pressed.

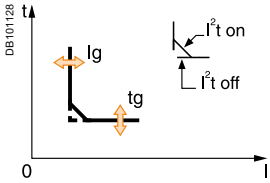
Test
A hand-held test kit may be connected to the test connector on the front to check circuit-breaker operation. For ETA6G trip unit, the operation of earth-fault protection can be checked by pressing the test button located above the test connector.

Overview of Functions
ETA Trip System

Protection			ETA6G								
Long Time			**ETA6G**								
Current setting (A)	**Ir** = In x …		0.4	0.5	0.6	0.7	0.8	0.9	0.95	0.98	1
Tripping between 1.05 and 1.20 x Ir											
Time setting		**tr (s)**	0.5	1	2	4	8	12	16	20	24
Time delay (s)	Accuracy: 0 to -30 %	1.5 x Ir	12.5	25	50	100	200	300	400	500	600
	Accuracy: 0 to -20 %	6 x Ir	0.7(1)	1	2	4	8	12	16	20	24
	Accuracy: 0 to -20 %	7.2 x Ir	0.7(2)	0.69	1.38	2.7	5.5	8.3	11	13.8	16.6
Thermal memory			20 minutes before and after tripping								
(1) 0 to -40 % - (2) 0 to -60 %											
Short Time											
Pick-up (A)	**Isd** = Ir x …		1.5	2	2.5	3	4	5	6	8	10
Accuracy: ±10 %											
Time setting tsd (s)	Settings	I^2t Off	0	0.1	0.2	0.3	0.4				
		I^2t On	-	0.1	0.2	0.3	0.4				
Time delay (ms) at 10 x Ir	**tsd** (max resettable time)		20	80	140	230	350				
(I^2t Off or I^2t On)	**tsd** (max break time)		80	140	200	320	500				
Instantaneous											
Pick-up (A)	**Ii** = In x …		2	3	4	6	8	10	12	15	off
Accuracy: ±10 %											
Time delay			Max resettable time: 20 ms Max break time: 50 ms								



Earth Fault			ETA6G								
Pick-up (A)	**Ig** = In x …		A	B	C	D	E	F	G	H	J
Accuracy: ±10 %	In ⩽ 400 A		0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
	400 A < In ⩽ 1000 A		0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
	In ⩾ 1250 A		500	640	720	800	880	960	1040	1120	1200
Time setting tg (s)	Settings	I^2t Off	0	0.1	0.2	0.3	0.4				
		I^2t On	-	0.1	0.2	0.3	0.4				
Time delay (ms)	**tg** (max resettable time)		20	80	140	230	350				
at In or 1200 A (I^2t Off or I^2t On)	**tg** (max break time)		80	140	200	320	500				

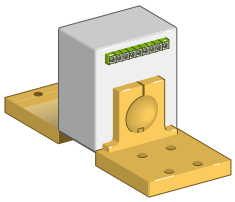


Ammeter		ETA6G	
Type of Measurements		**Range**	**Accuracy**
Instantaneous currents	I1, I2, I3, IN	0.2 x In to 1.2 x In	±1.5 %
	Ig (ETA6G)	0.2 x In to In	±10 %
Current maximeters of	I1, I2, I3, IN	0.2 x In to 1.2 x In	±1.5 %

Note: *All current-based protection functions require no auxiliary source.*
The test / reset button resets maximeters, clears the tripping indication and tests the battery.

ET Range of Trip System
Accessories and Test Equipment

DB101524



External sensor (CT)

PB101026-32A

External 24 Vdc power supply module

External Sensors

External Sensor for Earth-Fault Protection

The sensors, used with the EasyPact MVS T3 3P circuit breakers, are installed on the neutral conductor for:

- Residual type earth-fault protection (with 6G trip units)

The rating of the sensor (CT) must be compatible with the rating of the circuit breaker:

- MVS 08 to MVS 20: TC 400/2000
- MVS25 to MVS40: TC 1000/4000

Voltage Measurement Inputs[(1)]

As standard, the control unit is supplied by internal voltage measurement inputs placed downstream of the pole for voltages between 220 and 690 Vac.

External 24 Vdc Power-Supply Module (AD)

The external power-supply module makes it possible:

- to use the display even if the circuit breaker is open or not supplied (for the exact conditions of use, see the electrical diagrams part of this catalogue)
- to display fault currents after tripping
- to modify settings when the circuit breaker is open (OFF position)

This module is not designed to power on 24 Vdc voltage releases and electric motor mechanism.

We recommended using the AD power supply due to its low stray primary secondary capacitance. Good operation of the Micrologic control unit in noisy environment is not guaranteed with other power supplies.

Characteristics

- Power supply AC-to-DC or DC-to-DC
- Output voltage: 24 Vdc ±5 %
- Output current: 1 A
- DIN rail or platine Fixing with Acti9 form factor
- Conducted emissions power line: class B per EN 61000-6-3

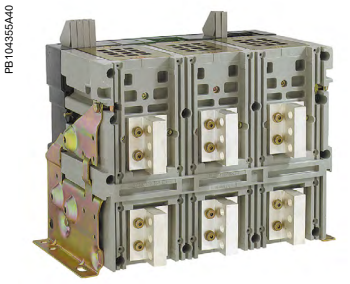
Connections
Overview of Solutions and Accessories

Two available connection types:
- Rear connections: horizontal, vertical and mixed
  The solutions presented are similar in principle for all EasyPact MVS fixed and draw-out devices.

EasyPact MVS T3 Rear Connection

Horizontal

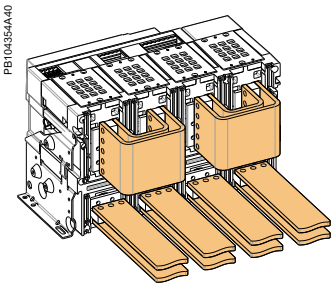
Vertical



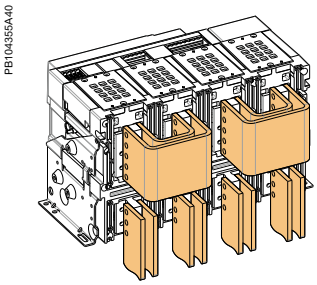
Two available connection types:
- Rear down connections: horizontal, vertical simply turn a horizontal rear connection 90° to make it a vertical connection (except for 4P UL/CCC standard connections)

EasyPact MVS DA1 Rear Connection

Horizontal



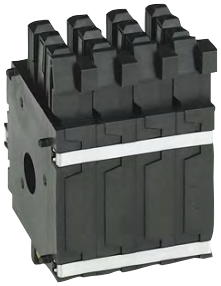
Vertical



Horizontal and vertical switching can be made by rotating except for 4P UL/CCC standard terminals. U shape connection terminal not provided by schneider.

Indication Contacts

Indication contacts are available:
■ in the standard version for relay applications



ON/OFF Indication Contacts (OF) (rotary type)

Fault-trip Indication Contact (SDE)

ON/OFF Indication Contacts OF

Indication contacts indicate the ON or OFF position of the circuit breaker:
■ Rotary type changeover contacts directly driven by the mechanism for EasyPact MVS. These contacts trip when the minimum isolation distance between the main circuit-breaker contacts is reached.

OF				T3	DA1
Supplied as standard				4	4
Maximum number				8	8
Breaking capacity (A) p.f.: 0.3 AC12/DC12	Standard				
		Vac	240/380	10/6 (1)	6/6 (2)
			480	10/6 (1)	
			690	6	
		Vdc	24/48	10/6 (1)	6/6 (2)
			125	10/6 (1)	
			250	3	
	Low-level				
		Vac	24/48	6	
			240	6	
			380	3	
		Vdc	24/48	6	
			125	6	
			250	3	

(1) Standard contacts: 10 A; optional contacts: 6 A.
(2) Standard contacts: 6 A; optional contacts: 6 A.

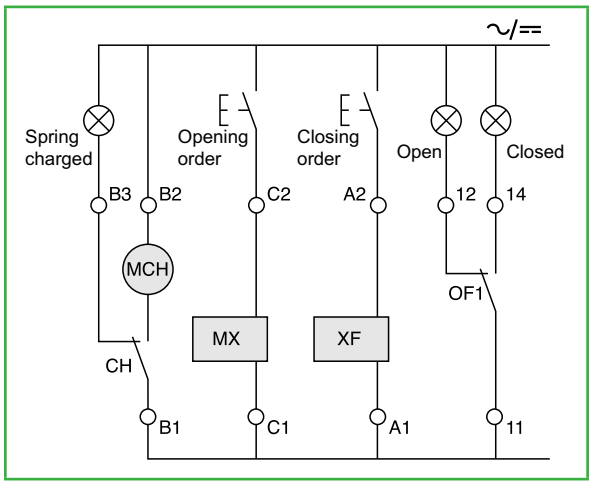
Fault-trip Indication Contacts SDE

Circuit-breaker tripping due to a fault is signalled by:
■ A red mechanical fault indicator (reset)
■ One changeover contact SDE
Following tripping, the mechanical indicator must be reset before the circuit breaker
may be closed. One SDE is supplied as standard.

SDE				MVS T3
Supplied as standard				1
Breaking capacity (A) p.f.: 0.3 AC12/DC12	Standard			Minimum load: 100 mA/24 V
		Vac	240/380	6
			480	2
		Vdc	24/48	3
			125	0.3
			250	0.15

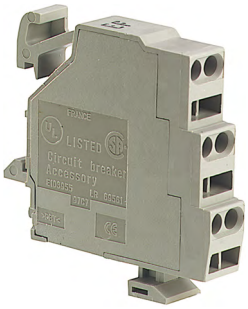
The remote ON / OFF function is used to remotely open and close the circuit breaker. It is made up of:
■ An electric motor MCH equipped with a springs charged limit switch contact CH
■ Two voltage releases:
■ A closing release XF
□ An opening release MX
A remote-operation function is generally combined with:
■ Device ON / OFF indication OF

Wiring diagram of a point-to-point remote ON / OFF function



Indication Contacts

PB100817-32.eps



CE, CD and CT connected/disconnected/test position carriage switches

Connected, Disconnected, and Test Position Carriage Switches CE, CD, and CT

Three series of optional auxiliary contacts are available for the chassis:

- Changeover contacts to indicate the connected position CE.
- Changeover contacts to indicate the disconnected position CD. This position is indicated when the required clearance for isolation of the power and auxiliary circuits is reached.
- Changeover contacts to indicate the test position CT. In this position, the power circuits are disconnected and the auxiliary circuits are connected.

				MVS T3	
Contacts				**CE/CD/CT**	
Maximum number	Standard			3 3 3	
	with additional actuators			9 0 0	
				6 3 0	
				6 0 3	
				3 6 0	
Breaking capacity (A)	Standard			Minimum load: 100 mA/24 V	
p.f.: 0.3		Vac	240	8	8
AC12/DC12			380	8	8
			480	8	8
			690	6	6
		Vdc	24/48	2.5	2.5
			125	0.8	0.8
			250	0.3	0.3
	Low-level			Minimum load: 2 mA/15 V	
		Vac	24/48	5	5
			240	5	5
			380	5	5
		Vdc	24/48	2.5	2.5
			125	0.8	0.8
			250	0.3	0.3

Remote Operation
Remote ON / OFF

PB100808-32

Electric motor MCH for EasyPact MVS

Electric Motor MCH

The electric motor automatically charges and recharges the spring mechanism when the circuit breaker is closed. Instantaneous reclosing of the breaker is thus possible following opening. The spring-mechanism charging handle is used only as a backup if auxiliary power is absent.
The electric motor MCH is equipped as standard with a limit switch contact CH that signals the charged position of the mechanism (springs charged).

Characteristics		
Power supply	Vac 50/60 Hz	100/130 - 200/240 - 380/415
	Vdc	24/30 - 48/60 - 100/125 - 200/250
Operating threshold		0.85 to 1.1 Un
Consumption (VA or W)		180
Motor overcurrent		2 to 3 In for 0.1 s
Charging time		Maximum 4 s
Operating frequency		Maximum 3 cycles per minute
CH contact		10 A at 240 V

PB100809-16

MX voltage releases

XF voltage release

Voltage Releases XF and MX

Their supply can be maintained or automatically disconnected.

Closing Release XF

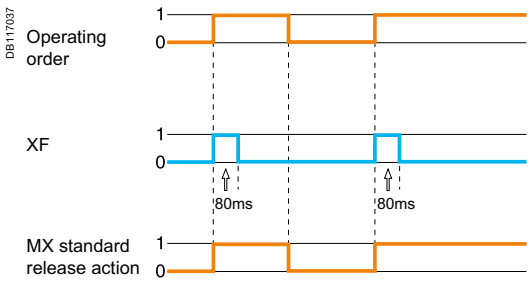
The XF release remotely closes the circuit breaker if the spring mechanism is charged.

Opening Release MX

The MX release instantaneously opens the circuit breaker when energised. It locks the circuit breaker in OFF position if the order is maintained.

Characteristics		XF	MX
Power supply	Vac 50/60 Hz	24 - 48 - 100/130 - 200/250 - 380/480	
	Vdc	12 - 24/30 - 48/60 - 100/130 - 200/250	
Operating threshold		0.85 to 1.1 Un	0.7 to 1.1 Un
Consumption (VA or W)		Hold: 4.5	Hold: 4.5
		Pick-up: 200 (200 ms)	Pick-up: 200 (200 ms)
Response time at Un		50 ms ±10 (04-16)	50 ms ±10
		70 ms ±10 (20-40)	

DB117037



Remote Operation
Remote Tripping

DB100809-16

MN voltage release

056422N

MN delay unit

Instantaneous Voltage Releases MN

The MN release instantaneously opens the circuit breaker when its supply voltage drops to a value between 35 % and 70 % of its rated voltage. If there is no supply on the release, it is impossible to close the circuit breaker, either manually or electrically.

Any attempt to close the circuit breaker has no effect on the main contacts. Circuit breaker closing is enabled again when the supply voltage of the release returns to 85% of its rated value.

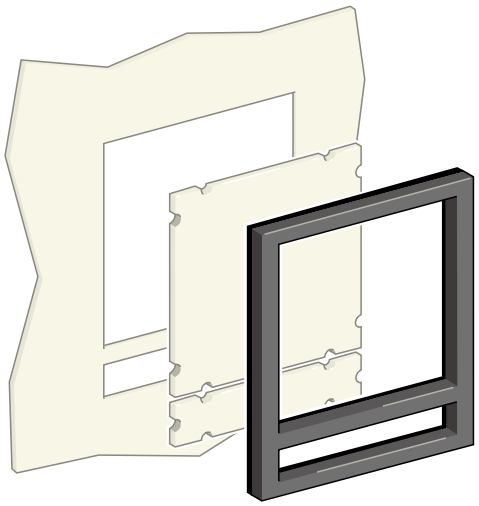
Characteristics			
Power supply	Vac 50/60 Hz	24 - 48 - 100/130 - 200/250 - 380/480	
	Vdc	24/30 - 48/60 - 100/130 - 200/250	
Operating threshold	Opening	0.35 to 0.7 Un	
	Closing	0.85 Un	
Consumption (VA or W)		Pick-up: 200 (200 ms)	Hold: 4.5
MN consumption with delay unit (VA or W)		Pick-up: 200 (200 ms)	Hold: 4.5
T3 response time at Un		90 ms ±5	
DA1 response time at Un		04-16, 40 ms ±5 20-40, 90 ms ±5	

MN Delay Units

To eliminate circuit breaker nuisance tripping during short voltage dips, operation of the MN release can be delayed. This function is achieved by adding an external delay unit in the MN voltage-release circuit. Two versions are available, adjustable and non-adjustable.

Characteristics			
Power supply	Non-adjustable	100/130 - 200/250	
Vac 50-60 Hz /dc	Adjustable	48/60 - 100/130 - 200/250 - 380/480	
Operating threshold	Opening	0.35 to 0.7 Un	
	Closing	0.85 Un	
Delay unit consumption		Pick-up: 200 (200 ms)	Hold: 4.5
Response time at Un	Non-adjustable	0.25 s	
	Adjustable	0.5 s - 0.9 s - 1.5 s - 3 s	

Accessories



Escutcheon CDP

Escutcheon CDP

Standard equipment mounted on the door of the cubicle, the escutcheon increases the degree of protection to IP 40 (circuit breaker installed free standing: IP30).
It is available in fixed and draw-out versions.

Blanking Plate For Escutcheon OP

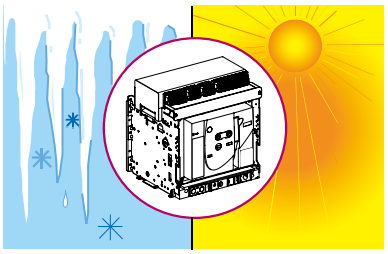
Used with the escutcheon, this option closes off the door cut-out of a cubicle not yet equipped with a device. It may be used with the escutcheon for both fixed and draw-out devices.

Installation Recommendations

Installation Recommendations

EasyPact MVS
Operating Conditions

EasyPact MVS T3 and DA1 have been tested for operation in industrial atmospheres. It is recommended that the equipment be cooled or heated to the proper operating temperature and kept free of excessive vibration and dust.



Ambient Temperature

EasyPact MVS devices can operate under the following temperature conditions:
- The electrical and mechanical characteristics are stipulated for an ambient temperature of -5 ... +60 °C
- Closing is guaranteed down to -35 °C

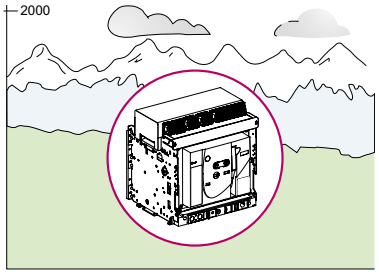
Storage conditions are as follows:
- -40 ... +85 °C for a Easypact MVS device without its control unit
- -25 ... +85 °C for the control unit

MVS T3 Altitude

At altitudes higher than 2000 m, the modifications in the ambient air (electrical resistance, cooling capacity) lower the following characteristics as follows:

Altitude (m)	2000	3000	4000	5000
Ue (V)	1140	1022	914	808
Ui (V)	1250	1111	994	878
In at 40 °C	1 x In	0.99 x In	0.96 x In	0.94 x In

Intermediate values may be obtained by interpolation.

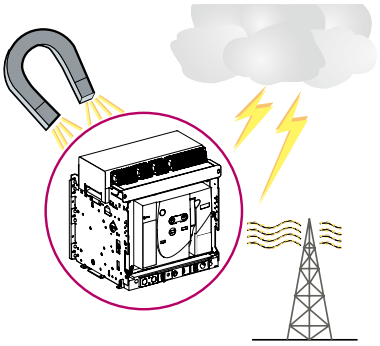


MVS DA1 Altitude

At altitudes higher than 2000 m, the modifications in the ambient air (electrical resistance, cooling capacity) lower the following characteristics as follows:

Altitude (m)		0	2000	3000	4000	5000
Impulse withstand voltage uimp (kV)	Uimp	15	15	14	12	10
Average insulation level (V)	Ui	1600	1600	1600	1600	1600
voltage 50/60 Hz Ue (V)	Ue	1500	1500	1500	1500	1500
Rated current 40 °C		1×In	1×In	0.98×In	0.96×In	0.94×In

Intermediate values may be obtained by interpolation.



Electromagnetic Disturbances

EasyPact MVS devices are protected against:
- Overvoltages caused by devices that generate electromagnetic disturbances
- Overvoltages caused by atmospheric disturbances or by a distribution system outage (e.g. failure of a lighting system)
- Devices emitting radio waves (radios, walkie-talkies, radar, etc.)
- Electrostatic discharges produced by users

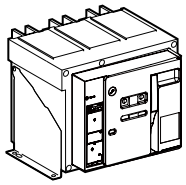
EasyPact MVS devices have successfully passed the electromagnetic-compatibility tests (EMC) defined by the following international standards:
- IEC 60947-2, appendix F

The above tests guarantee that:
- No nuisance tripping occurs
- Tripping times are respected

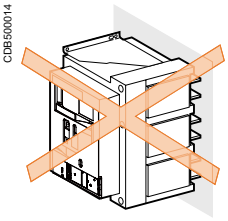
Installation in Switchboard

Possible Positions

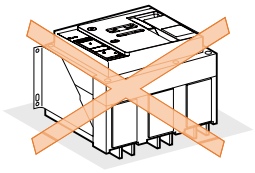
CDB500013



CDB500014



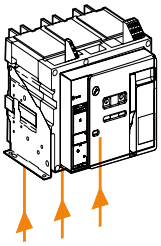
CDB500015



Power Supply

EasyPact MVS Type T3 devices can be supplied either from the top or from the bottom without reduction in performance, in order to facilitate connection when installed in a switchboard.

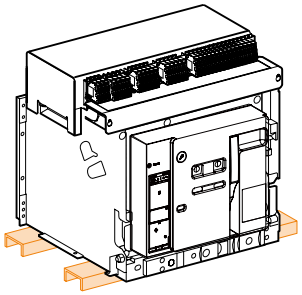
CDB500016



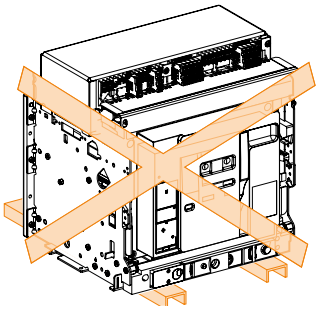
Mounting the Circuit Breaker

It is important to distribute the weight of the device uniformily over a rigid mounting surface such as rails or a base plate.
This mounting plane should be perfectly flat (tolerance on support flatness: 2 mm). This eliminates any risk of deformation which could interfere with correct operation of the circuit breaker.
EasyPact devices can also be mounted on a vertical plane using the special brackets.

CDB500017



CDB500018

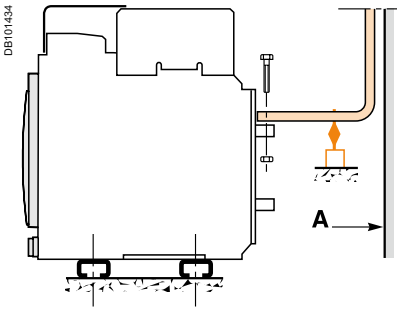


Mounting on Rails

Installation in Switchboard

Partitions

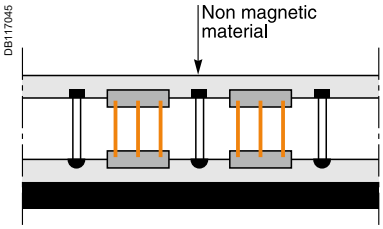
Sufficient openings must be provided in partitions to ensure good air circulation around the circuit breaker. Any partition between upstream and downstream connections of the device must be made of nonmagnetic material.
For high currents, of 2500 A and higher, the metal supports or barriers in the immediate vicinity of a conductor must be made of non-magnetic material **A**. Metal barriers through which a conductor passes must not form a magnetic loop.

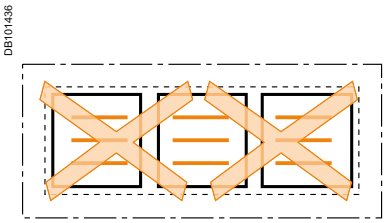


A : *Non magnetic material.*

Busbars

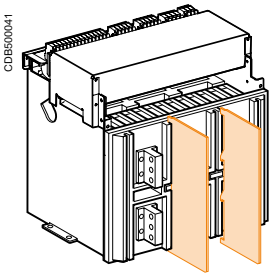
The mechanical connection must exclude the possibility of formation of a magnetic loop around a conductor.

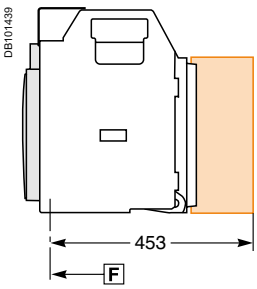




Interphase Barrier

If the insulation distance between phases is not sufficient (≤ 14 mm), it is advised to install phase barriers (taking into account the safety clearances).





Control Wiring

Wiring of Voltage Releases

During pick-up, the power consumed is approximately 150 to 200 VA. For low control voltages (12, 24, 48 V), maximum cable lengths are imposed by the voltage and the
cross-sectional area of cables.

Recommended Maximum Cable Lengths (m)

		12 V		24 V		48 V	
		2.5 mm²	1.5 mm²	2.5 mm²	1.5 mm²	2.5 mm²	1.5 mm²
MN	U source 100 %	–	–	58	35	280	165
	U source 85 %	–	–	16	10	75	45
MX-XF	U source 100 %	21	12	115	70	550	330
	U source 85 %	10	6	75	44	350	210

Note: *The indicated length is that of each of the two wires.*

24 Vdc Power Supply Module

External 24 Vdc power supply module (F1-, F2+)

- Do not connect the positive terminal (F2+) to earth.
- The negative terminal (F1-) can be connected to earth.
- A number of trip units can be connected to the same 24 Vdc power supply (the consumption of a trip unit is approximately 100 mA).
- Do not connect any devices other than a trip unit.
- The maximum length for each conductor is ten m. For greater distances, it is advised to twist the supply wires together.
- The 24 Vdc supply wires must cross the power cables perpendicularly. If this is difficult, it is advised to twist the supply wires together.
- The technical characteristics of the external 24 Vdc power supply module are indicated on page A-14.

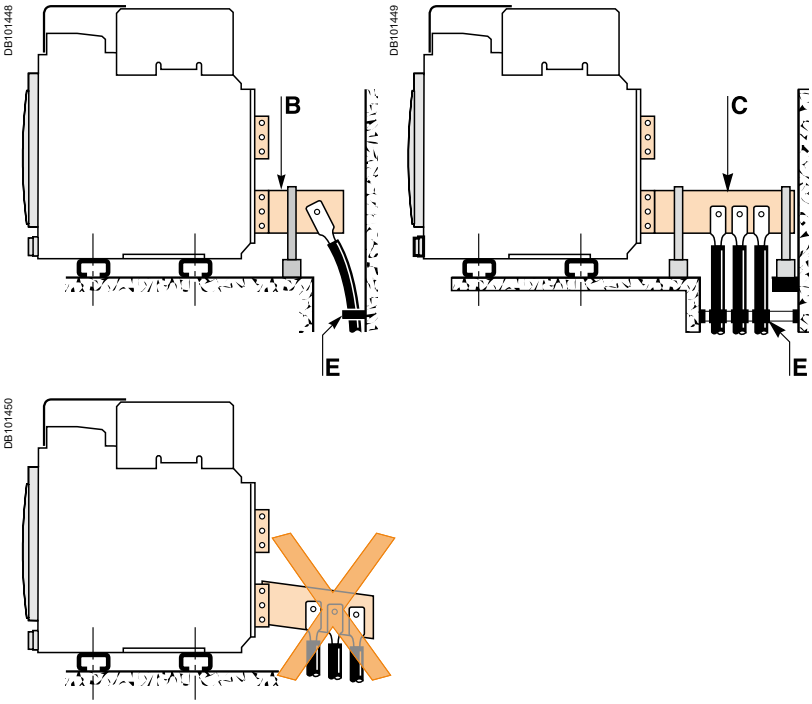
Note: *Wiring of ZSI: it is recommended to use twisted shielded cable. The shield must be connected to earth at both ends.*

Power Connection

Cables Connections

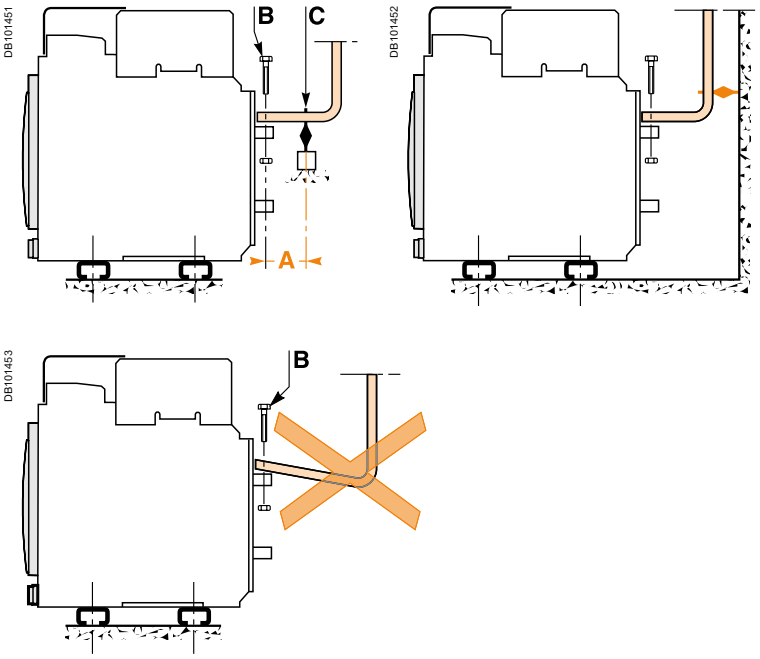
If cables are used for the power connections, make sure that they do not apply excessive mechanical forces to the circuit breaker terminals.
For this, make the connections as follows:

- ■ Extend the circuit breaker terminals using short bars designed and installed according to the recommendations for bar-type power connections:
  - □ For a single cable, use solution **B**
  - □ For multiple cables, use solution **C**
- ■ In all cases, follow the general rules for connections to busbars:
  - □ Position the cable lugs before inserting the bolts
  - □ The cables should firmly secured to the framework **E**



Busbars Connections

The busbars should be suitably adjusted to ensure that the connection points are positioned on the terminals before the bolts are inserted **B.**
The connections are held by the support which is fixed to the framework of the switchboard, such that the circuit breaker terminals do not have to support its weight **C** (This support should be placed close to the terminals).



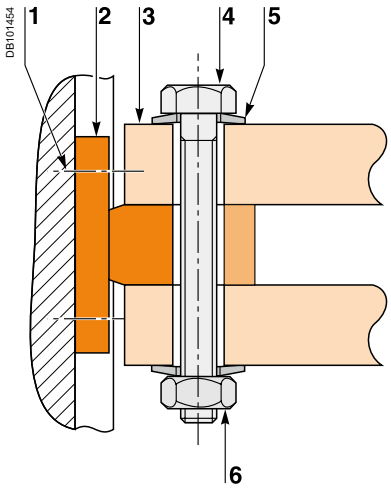
Electrodynamic Stresses

The first busbar support or spacer shall be situated within a maximum distance from the connection point of the breaker (see table below). This distance must be respected so that the connection can withstand the electrodynamic stresses between phases in the event of a short circuit.

Maximum distance A between busbar to circuit breaker connection and the first busbar support or spacer with respect to the value of the prospective short-circuit current.

Isc (kA)	30	50	65
Distance A (mm)	350	300	250

Power Connection

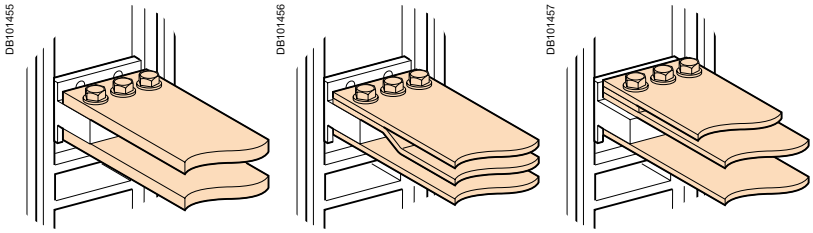


1 *Terminal screw factory-tightened to 16 Nm*
2 *Breaker terminal*
3 *Busbar*
4 *Bolt*
5 *Washer*
6 *Nut*

Clamping

Correct clamping of busbars depends on other things, on the tightening torques used for the nuts and bolts. Over-tightening may have the same consequences as under-tightening.
For connecting busbars (Cu ETP-NFA51-100) to the circuit breaker, the tightening torques to be used are shown in the table below.
These values are for use with copper busbars and steel nuts and bolts, class 8.8.
The same torques can be used with AGS-T52 quality aluminium bars (French standard NFA 02-104 or American National Standard H-35-1).

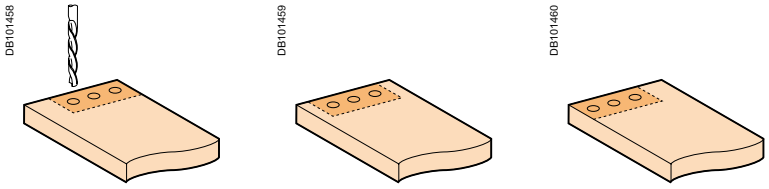
Examples



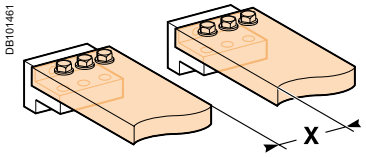
Tightening Torques			
Ø (mm) Nominal	**Ø (mm) Drilling**	**Tightening torques (Nm) with grower or flat washers**	**Tightening torques (Nm) with contact or corrugatec washers**
10	11	37.5	50

Busbar Drilling

Examples



Isolation Distance

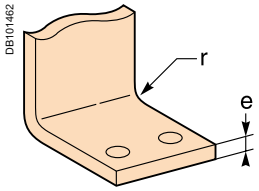


Dimensions (mm)

Ui	X min
600 V	8 mm
1000 V	14 mm

Busbar Bending

When bending busbars, maintain the radius indicated below (a smaller radius would cause cracks).



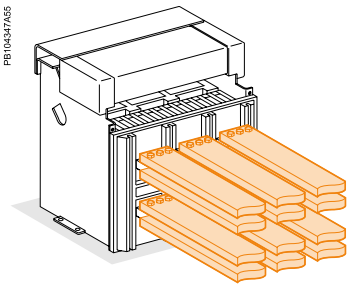
Dimensions (mm)

e	Radius of Curvature r	
	Min	Recommended
5	5	7.5
10	15	18 to 20

Busbar Sizing

Basis of Tables:
- Maximum permissible busbars temperature: 100 °C
- Ti: temperature around the ciruit breaker and its connection
- Busbar material is unpainted Copper/Aluminium

Rear Horizontal Connection



Example

Conditions:
- Drawout version
- Horizontal busbars
- T_i: 50 °C
- Service current: 1600 A

Solution:

For T_i = 50 °C, use an MVS16 which can be connected with 2 bars-63 x10 mm copper (or) 3 bars-80 x10 mm Aluminium.

Unpainted Copper(Rear Horizontal Connection)

EasyPact	Maximum service current (A)	Ti: 40 °C		Ti: 50 °C	
		No. of 5 mm thick bars	No. of 10 mm thick bars	No. of 5 mm thick bars	No. of 10 mm thick bars
MVS08	800	2b.50 x 5	1b. 50 x 10	2b.50 x 5	1b. 50 x 10
MVS10	1000	3b.50 x 5	1b. 63 x 10	3b.50 x 5	2b. 50 x 10
MVS12	1250	3b.50 x 5 2b.80 x 5	2b. 40 x 10	3b.50 x 5 2b 80 x 5	2b. 50 x 10
MVS16	1600	3b.80 x 5	2b. 63 x 10	3b.80 x 5	2b. 63 x 10
MVS20	2000	3b.100 x 5	2b. 63 x 10	3b.100 x 5	2b. 80 x 10
MVS25	2500	4b.100 x 5	2b. 80 x 10	4b.100 x 5	2b. 100 x 10
MVS32	3200	6b.100 x 5	3b. 100 x10	8b.100 x 5	3b. 100 x 10
MVS40(T3)	4000	-	5b. 100 x10	-	5b. 100 x 10
MVS40(DA1)	4000	-	4b. 100 x10	-	4b. 100 x 10

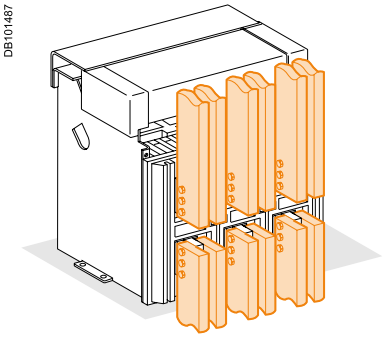
Note: *The values indicated in these tables have been extrapolated from test data and theoretical calculations. These tables are only intended as a guide and cannot replace industrial experience or a temperature rise test.*

Busbar Sizing

Basis of Tables:

- Maximum permissible busbars temperature: 100 °C
- Ti: temperature around the ciruit breaker and its connection
- Busbar material is unpainted Copper/Aluminium

Rear Vertical Connection



Unpainted Copper (Vertical Connection)

EasyPact	Maximum service current (A)	Ti: 40 °C		Ti: 50 °C	
		No. of 5 mm thick bars	No. of 10 mm thick bars	No. of 5 mm thick bars	No. of 10 mm thick bars
MVS08	800	2b. 50 x 5	1b. 50 x 10	2b.50 x 5	1b. 50 x 10
MVS10	1000	2b. 50 x 5	1b. 50 x 10	2b.50 x 5	1b. 50 x 10
MVS12	1250	2b. 63 x 5	2b. 40 x 10	3b.50 x 5	2b. 40 x 10
MVS16	1600	3b. 63 x 5	2b. 50 x 10	3b.63 x 5	2b. 50 x 10
MVS20	2000	3b.100 x 5	2b. 63 x 10	3b.100 x 5	2b. 63 x 10
MVS25	2500	4b.100 x 5	2b. 80 x 10	4b.100 x 5	2b. 80 x 10
MVS32	3200	6b.100 x 5	3b. 100 x 10	6b.100 x 5	3b. 100 x 10
MVS40	4000	-	4b. 100 x 10	-	4b. 100 x 10

Note: *The values indicated in these tables have been extrapolated from test data and theoretical calculations. These tables are only intended as a guide and cannot replace industrial experience or a temperature rise test.*

EasyPact MVS T3
Temperature Derating / Power Dissipation

Temperature Derating

The table below indicates the maximum current rating, for each connection type, as a function of Ti around the circuit breaker and the busbars. For Ti greater than 60 °C, consult us. Ti: temperature around the circuit breaker and its connection.

Version	Draw-out										Fixed									
Connection	Rear horizontal					Rear vertical					Rear horizontal					Rear vertical				
Temp. Ti	40 °C	45 °C	50 °C	55 °C	60 °C	40 °C	45 °C	50 °C	55 °C	60 °C	40 °C	45 °C	50 °C	55 °C	60 °C	40 °C	45 °C	50 °C	55 °C	60 °C
MVS08	800					800					800					800				
MVS10	1000					1000					1000					1000				
MVS12	1250					1250					1250					1250				
MVS16	1600					1600					1600					1600				
MVS20	2000			1900	1800	2000				1900	2000				1920	2000				
MVS25	2500	2450	2400	2300	2200	2500	2450	2400	2300		2500					2500				
MVS32	3200		3100	3000	2900	3200					3200					3200				
MVS40	4000		3900	3750	3650	4000				3900	4000			3900	3800	4000				

Power Dissipation

Total power dissipation is the value measured at I_N, 50/60 Hz, for a 3 pole or 4 pole breaker (values above the power $P = 3RI^2$). The resistance between input/output is the value measured per pole (cold state).

Type	Draw-out		Fixed	
MVS T3	Power loss (W)	Input/output resistance (µohm)	Power loss (W)	Input/output resistance (µohm)
MVS08	100	30	42	13
MVS10	150	30	70	13
MVS12	230	30	100	13
MVS16	390	30	170	13
MVS20	470	30	250	13
MVS25	600	19	260	8
MVS32	670	13	420	8
MVS40	900	11	650	8

EasyPact MVS DA1 Temperature Derating / Power Dissipation

Temperature Derating

The table below indicates the maximum current rating, for each connection type, as function of Ti around the circuit breaker and the busbars. For Ti greater than 70 °C, consult us. Temperature around the circuit breaker and its connection: Ti (IEC 60947-2)

Version	Fixed													
Connection	Rear horizontal							Mixed connection						
Temp. Ti	40 °C	45 °C	50 °C	55 °C	60 °C	65 °C	70 °C	40 °C	45 °C	50 °C	55 °C	60 °C	65 °C	70 °C
MVS16	1600							1600						
MVS20	2000							2000						
MVS25	2500							2500						
MVS32	3200					3140	2950	3200					3000	2820
MVS40	4000					3800	3530	4000				3800	3600	3400

Power Dissipation

Total power dissipation is the value measured at I_N, 50/60 Hz, for a 4 pole breaker (values above the power $P = 3RI^2$). The resistance between input/output is the value measured per pole (cold state).

Type	Fixed	
MVS DA1	Power loss (W)	Input/output resistance (µohm)
MVS16	215	8
MVS20	335	8
MVS25	540	8
MVS32	550	8
MVS40	860	8
MVS25	260	8

Dimensions and Connections

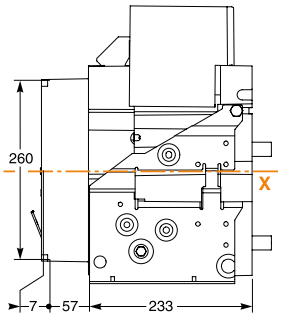
Dimensions and Connections

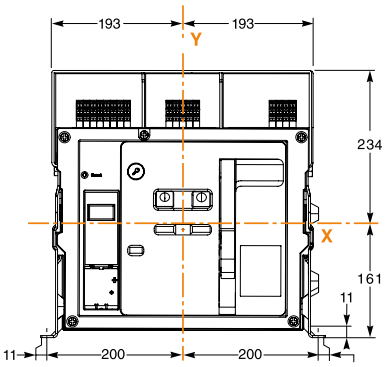
EasyPact MVS T3 (800 to 3200 A) Circuit Breakers

Fixed 3-Poles Device

Dimensions

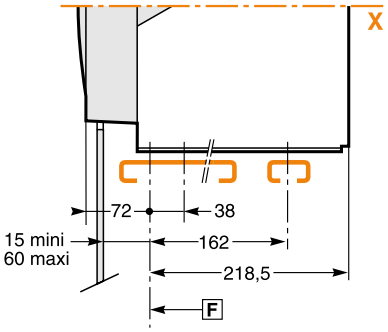
DB101267





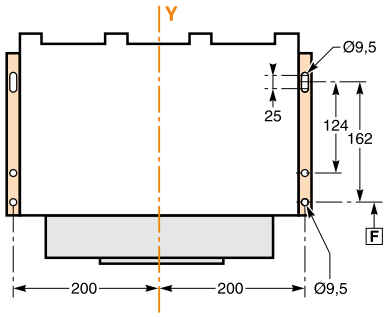
Mounting on base plate or rails

DB101269



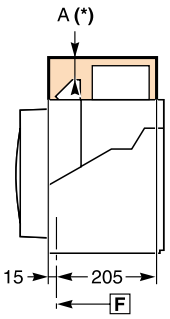
Mounting detail

DB101270

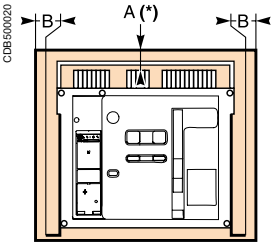


Safety clearances

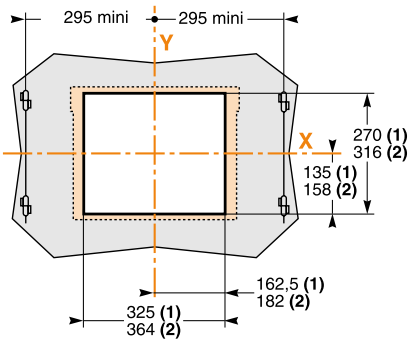
DB101271



CDB500020



DB101273



	Insulated parts	Metal parts	Energised parts
A	0	0	100
B	0	0	60

F : *Datum.*

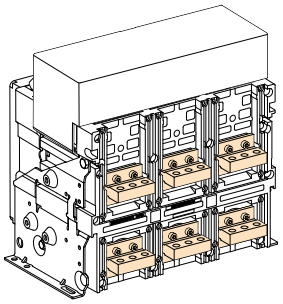
(1) Without escutcheon.
(2) With escutcheon.
***Note: X** and **Y** are the symmetry planes for a 3-pole device.*
***A(*)** An overhead clearance of 50 mm is required to remove the arc chutes.*
An overhead clearance of 20 mm is required to remove the terminal block.

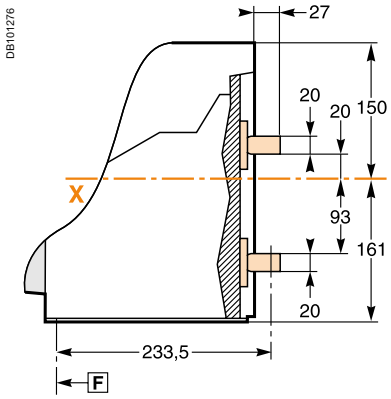
EasyPact MVS T3 (800 to 3200 A) Circuit Breakers

Fixed 3-Poles Device

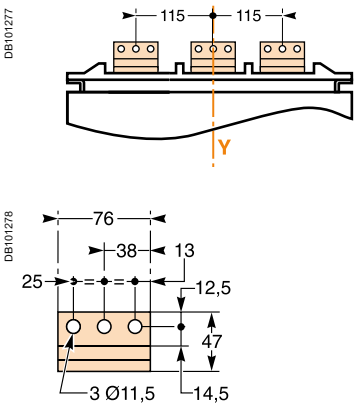
Connections

Horizontal rear connection

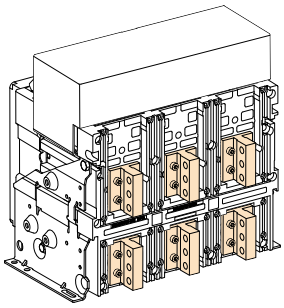


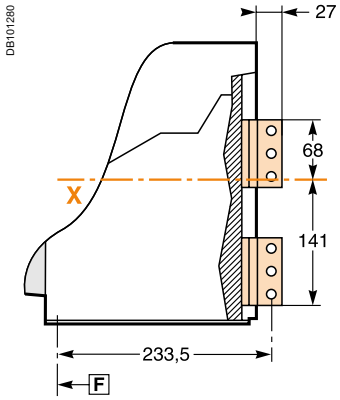


Detail

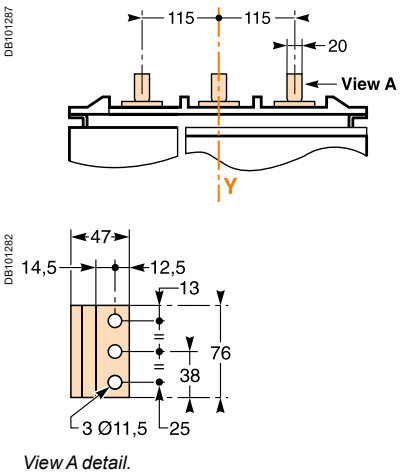


Vertical rear connection





Detail



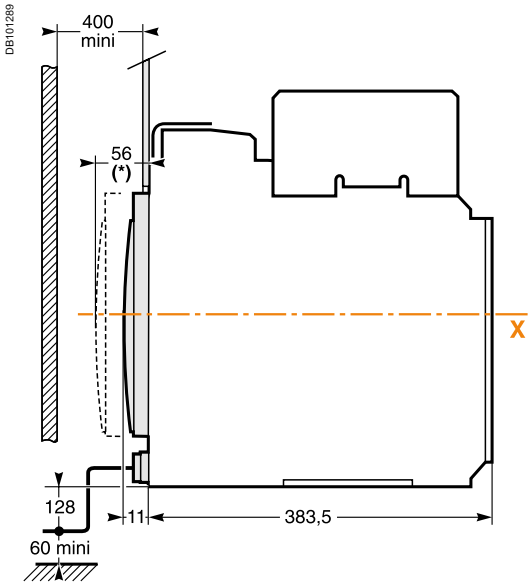
View A detail.

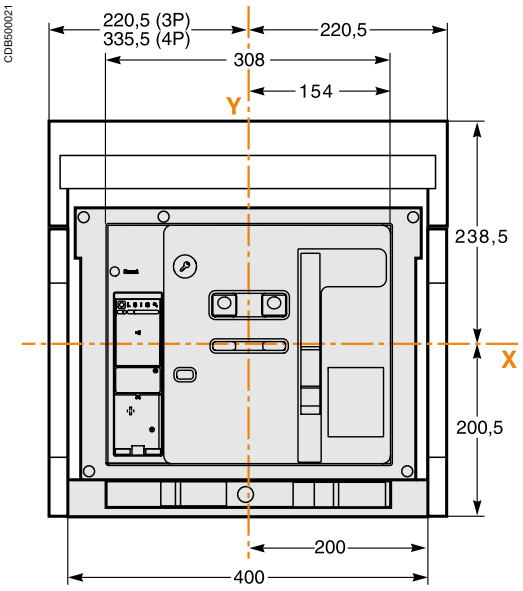
Note: *Recommended connection screws:* ***M10*** *class 8.8.*
Tightening torque: ***50 Nm*** *with contact washer.*

EasyPact MVS T3 (800 to 3200 A) Circuit Breakers

Draw-out 3-Poles Device

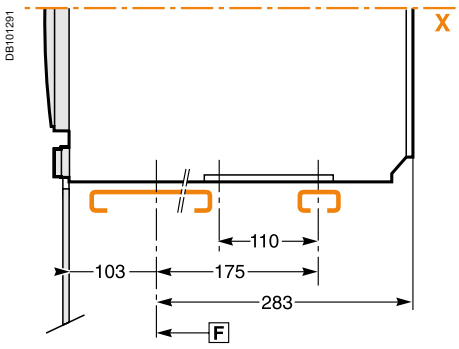
Dimensions



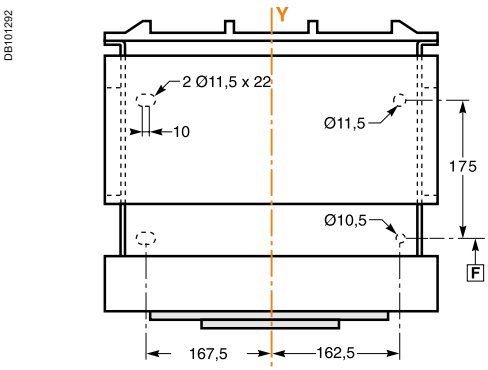


(*) Disconnected position.

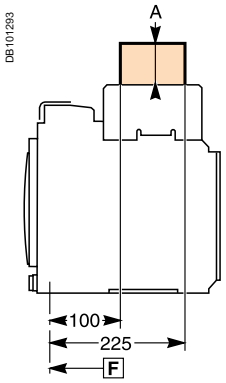
Mounting on base plate or rails

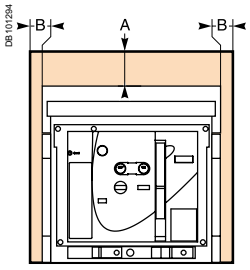


Mounting detail



Safety clearances

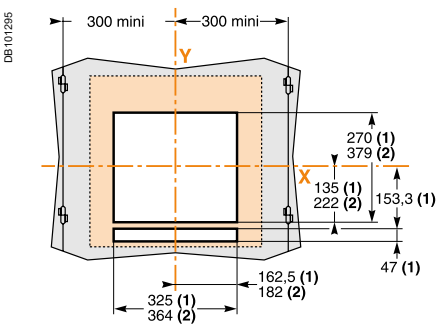




	Insulated parts	Metal parts	Energised parts
A	0	0	0
B	0	0	60

F : *Datum.*

Door cutout



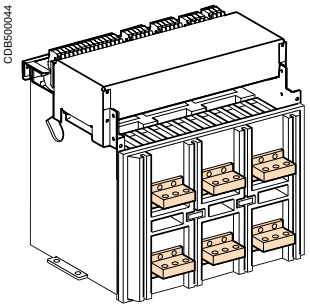
(1) Without escutcheon.
(2) With escutcheon.
***Note: X** and **Y** are the symmetry planes for a 3-pole device.*

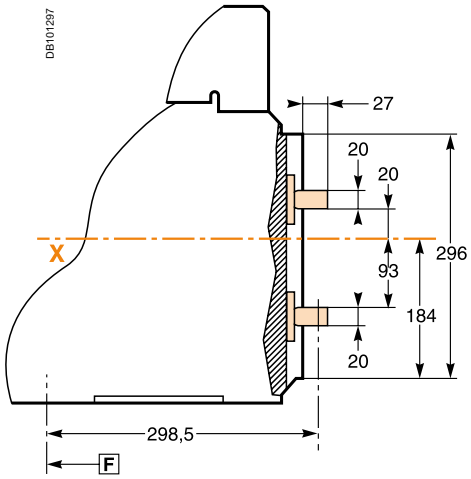
EasyPact MVS T3 (800 to 3200 A) Circuit Breakers

Draw-out 3-Poles Device

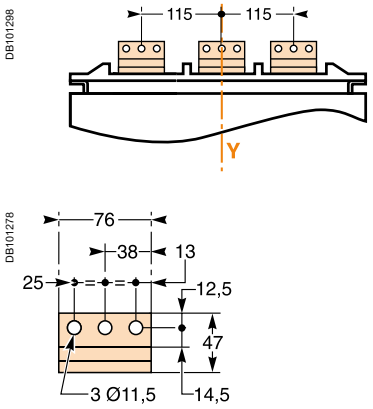
Connections

Horizontal rear connection

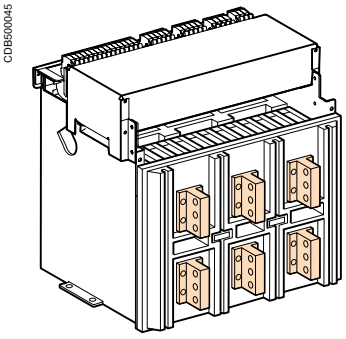


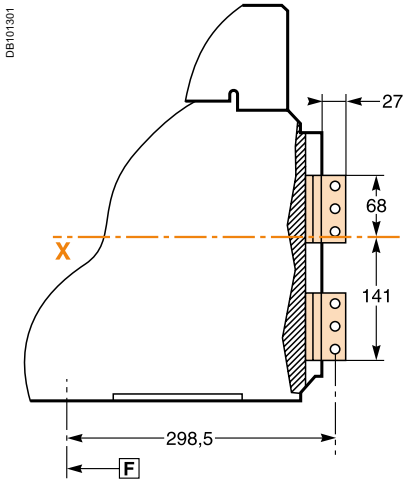


Detail

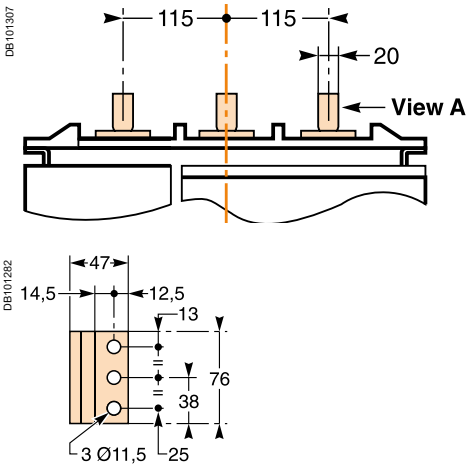


Vertical rear connection





Detail



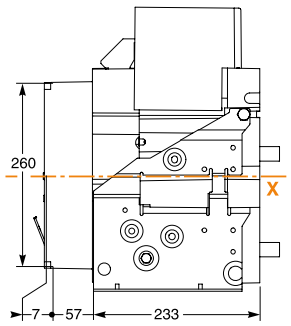
View A detail.

Note: *Recommended connection screws:* ***M10*** *class 8.8.*
Tightening torque: ***50 Nm*** *with contact washer.*

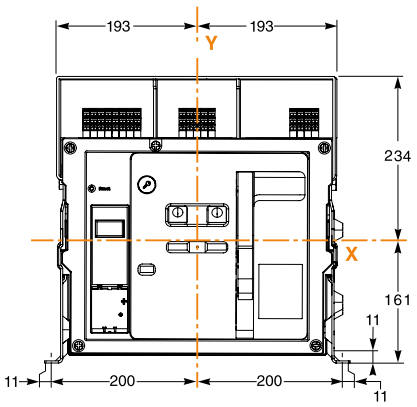
EasyPact MVS T3(4000 A) Circuit Breakers
Fixed 3-Poles Device

Dimensions

DB101267

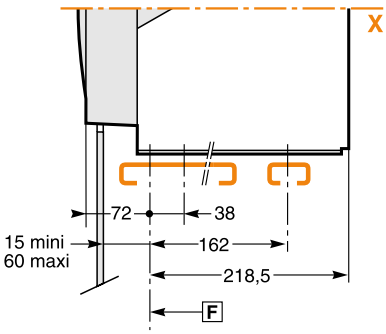


CDB500019

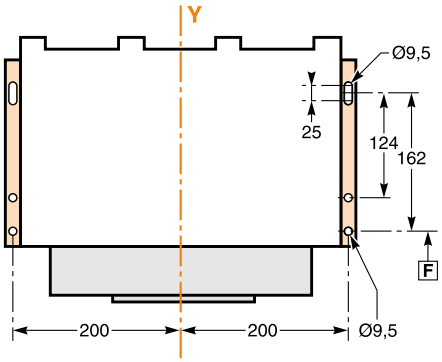


Mounting on base plate or rails

DB101269

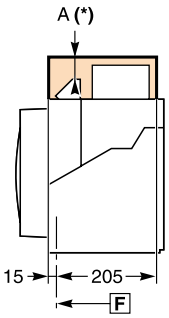


Mounting detail

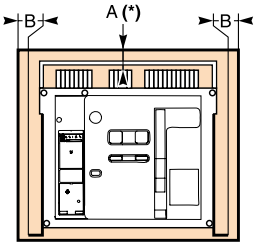


Safety clearances

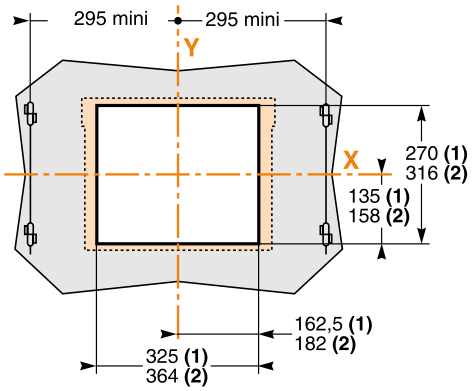
DB101271



CDB500020



Door cutout



	Insulated parts	Metal parts	Energised parts
A	0	0	100
B	0	0	60

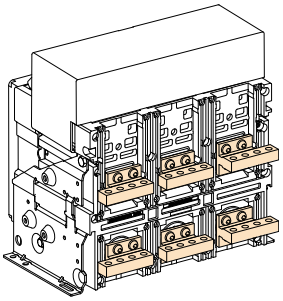
F : Datum.

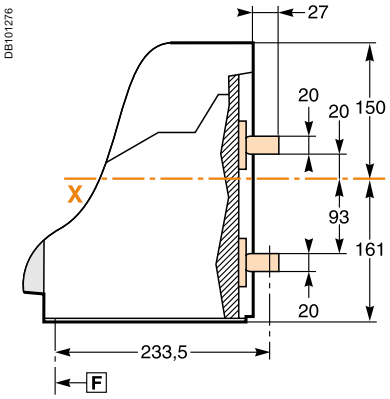
(1) Without escutcheon.
(2) With escutcheon.
Note: X and Y are the symmetry planes for a 3-pole device.
A(*) An overhead clearance of 110 mm is required to remove the arc chutes.
An overhead clearance of 20 mm is required to remove the terminal block.

EasyPact MVS T3(4000 A) Circuit Breakers
Fixed 3-Poles Device

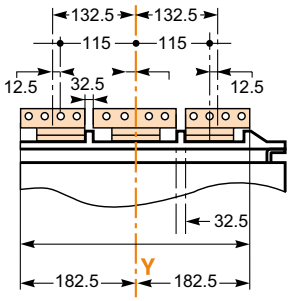
Connections

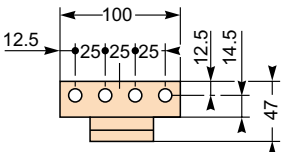
Horizontal rear connection

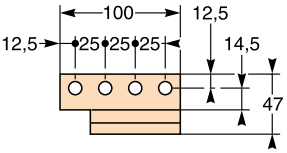




Detail





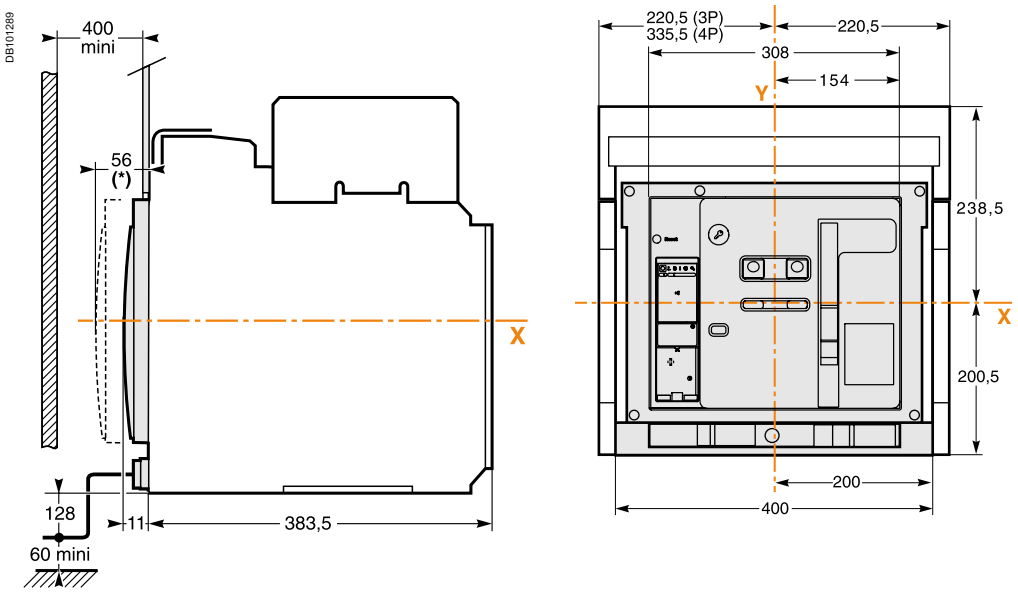


Note: *Recommended connection screws:* ***M10*** *class 8.8.*
Tightening torque: ***50 Nm*** *with contact washer.*

EasyPact MVS T3(4000 A) Circuit Breakers

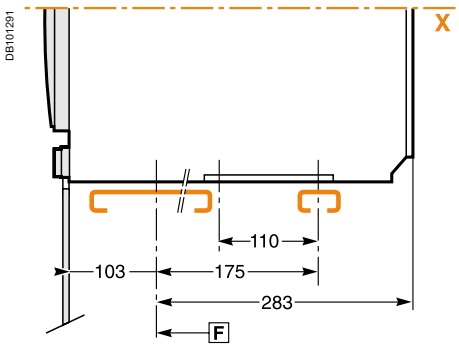
Draw-out 3-Poles Device

Dimensions

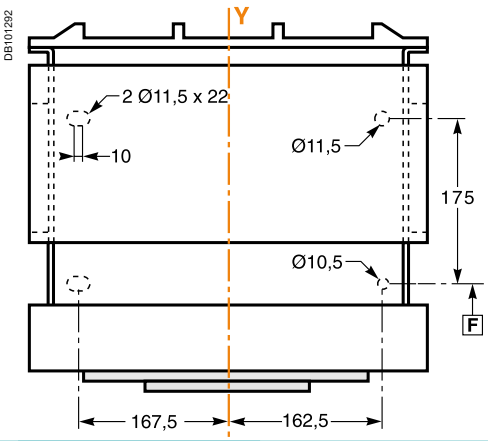


(*) Disconnected position.

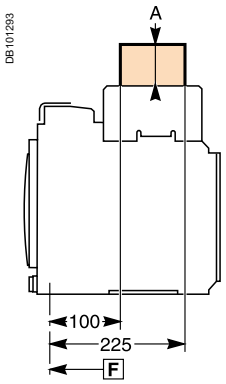
Mounting on base plate or rails

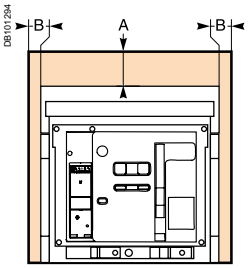


Mounting detail



Safety clearances

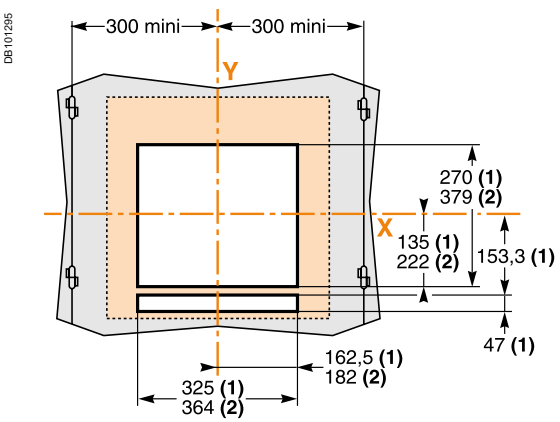




	Insulated parts	Metal parts	Energised parts
A	0	0	60
B	0	0	60

F : *Datum.*

Door cutout



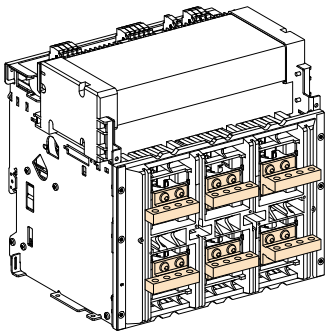
(1) Without escutcheon.
(2) With escutcheon.
***Note: X** and **Y** are the symmetry planes for a 3-pole device.*
The safety clearances take into account the space required to remove the arc chutes.

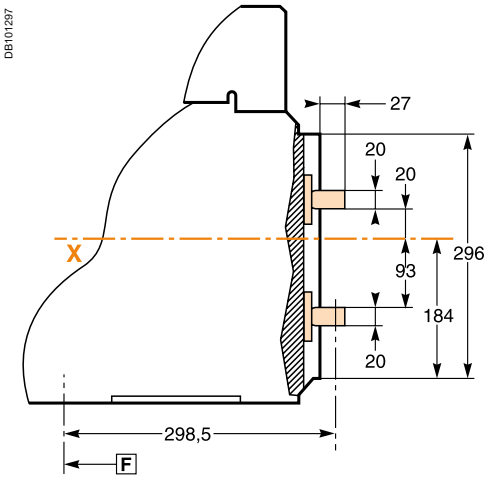
EasyPact MVS T3 (4000 A) Circuit Breakers

Draw-out 3-Poles Device

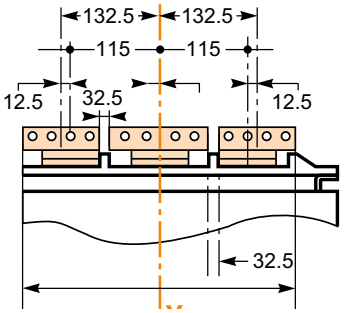
Connections

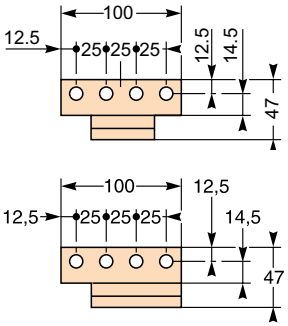
Horizontal rear connection





Detail



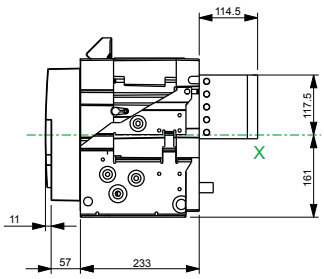


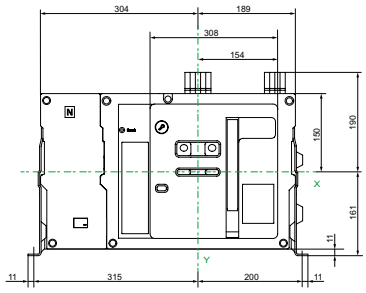
Note: *Recommended connection screws:* ***M10*** *class 8.8.*
Tightening torque: ***50 Nm*** *with contact washer.*

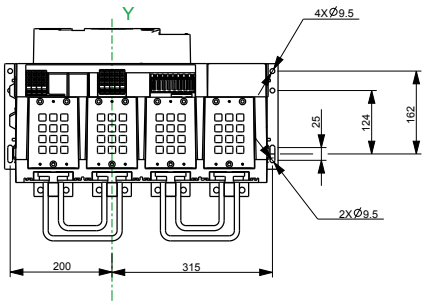
EasyPact MVS DA1 (1600 to 4000 A) Switch-disconnectors

Fixed 4-Poles Device

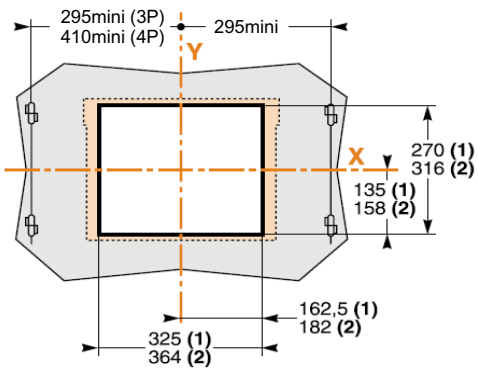
Dimensions



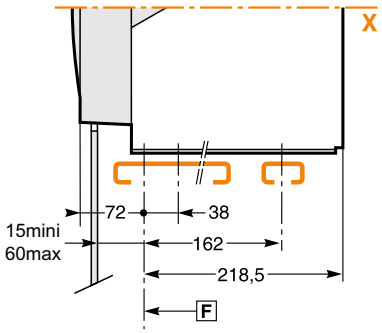




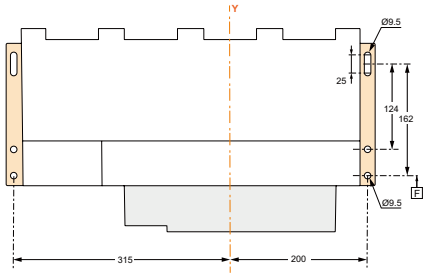
Door cutout



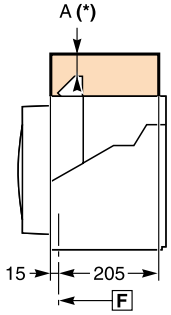
Mounting on base plate or rails

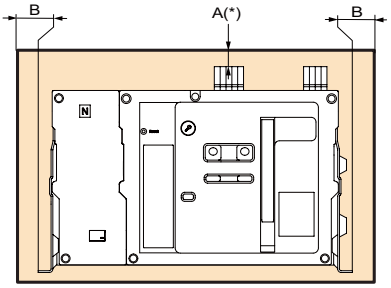


Mounting detail



Safety clearances





	Insulated parts	Metal parts	Energised parts
A	0	0	100
B	0	0	60

F: Datum.

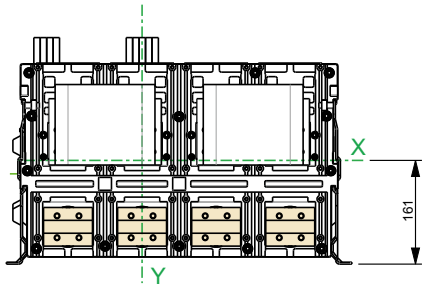
(1) Without escutcheon.
(2) With escutcheon.
Note: X and Y are the symmetry planes for a 3-pole device.
A (*) The safe spacing takes into account the space required to remove the arc extinguishing cover by 50 mm.
The safe spacing when removing the terminal block is 20 mm.

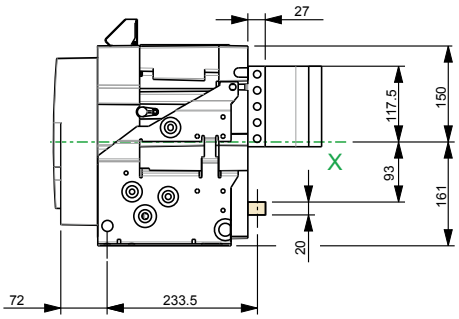
EasyPact MVS DA1 (1600 to 4000 A) Switch-disconnectors

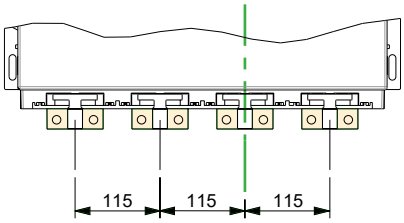
Fixed 4-Poles Device

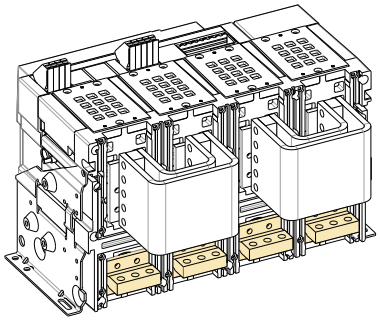
Connections

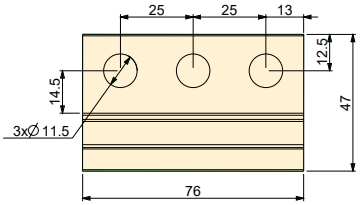
Horizontal rear connection (1600-3200A) **Details**







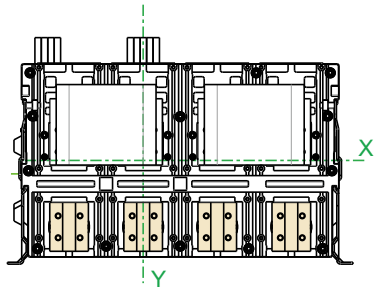


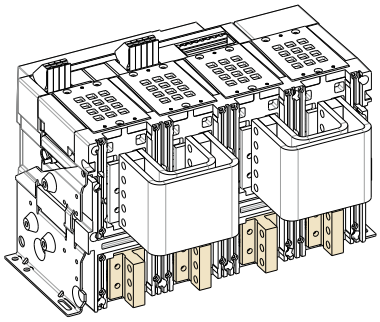


EasyPact MVS DA1 (1600 to 4000 A) Switch-disconnectors

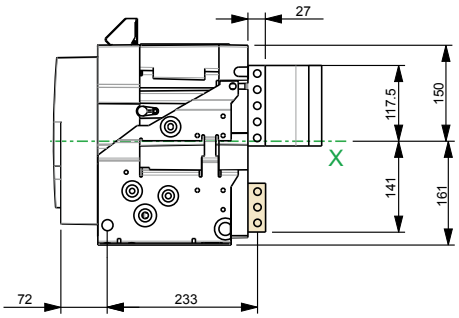
Fixed 4-Poles Device

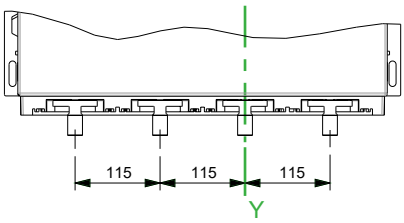
Vertical rear connection (1600-3200 A)

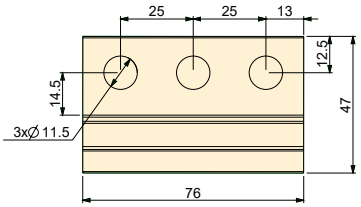




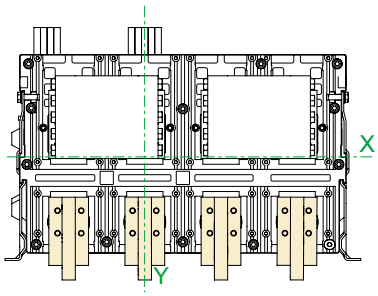
Details

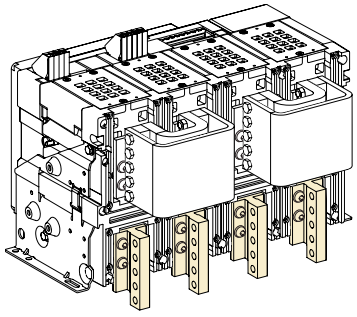




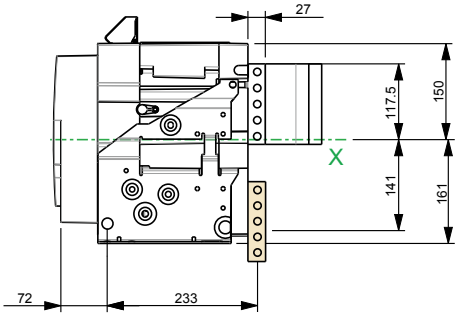


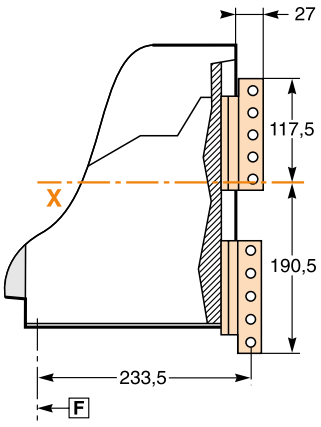
Vertical rear connection (4000 A)

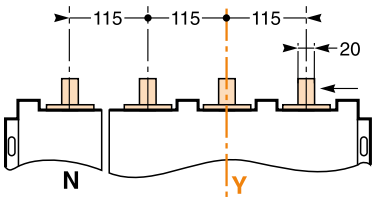


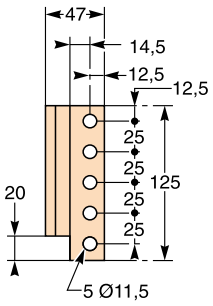


Details





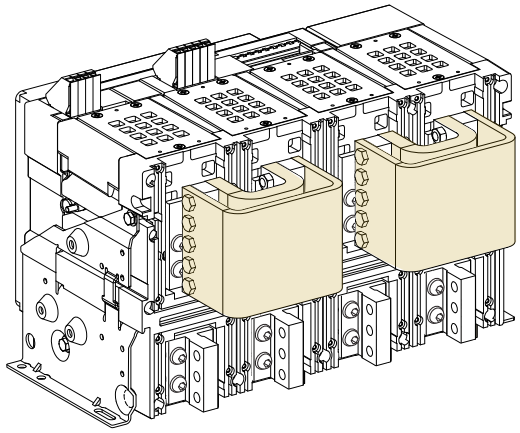




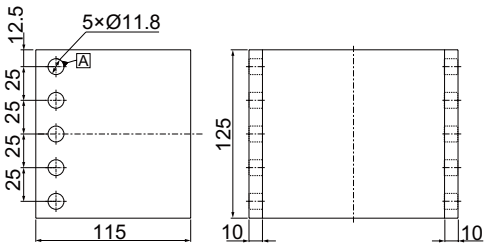
EasyPact MVS DA1 (1600 to 4000 A) Switch-disconnectors

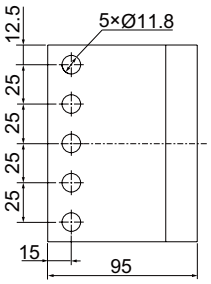
Fixed 4-Poles Device

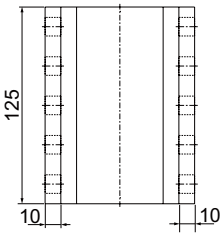
U shape connection

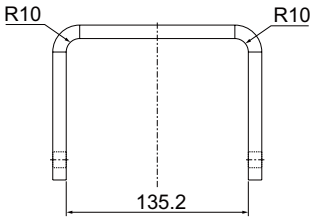


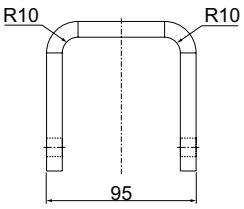
M0DC00020*







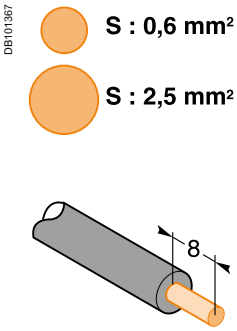


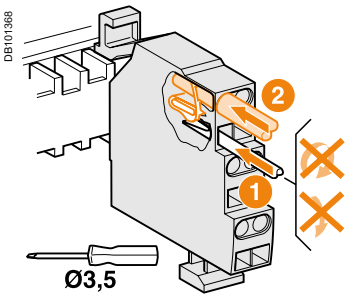


*U shape connection terminal not provided by Schneider.

EasyPact MVS T3
External Modules

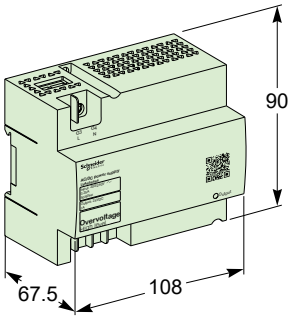
Connection of auxilary wiring to terminal block

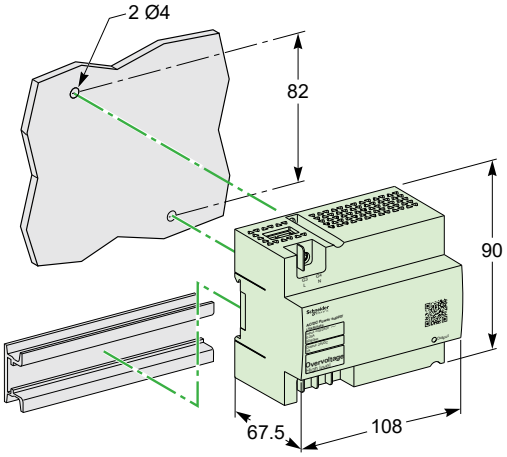




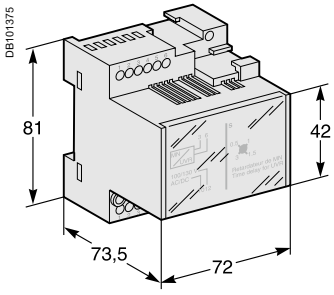
One conductor only per connection point.

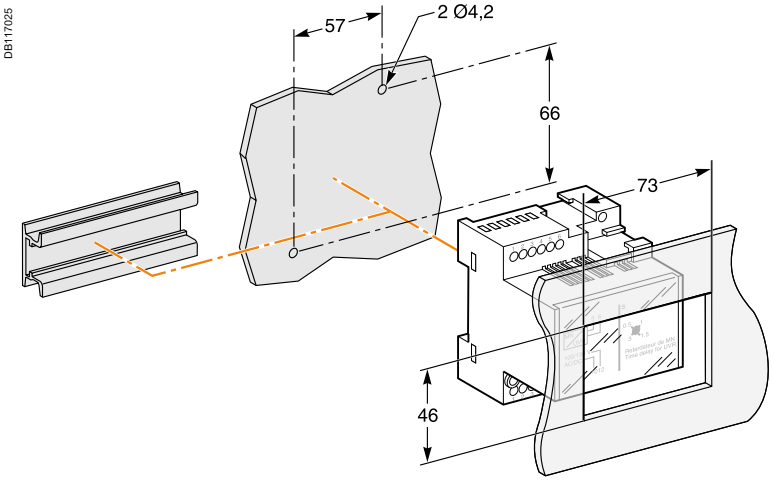
External power supply module (AD)





Delay unit for MN release



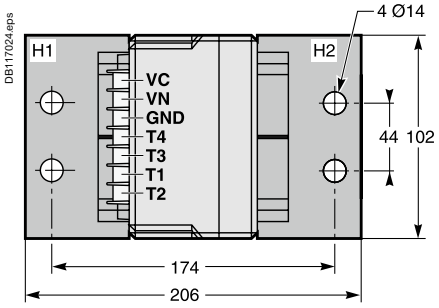


EasyPact MVS T3
External Modules

External sensor for external neutral

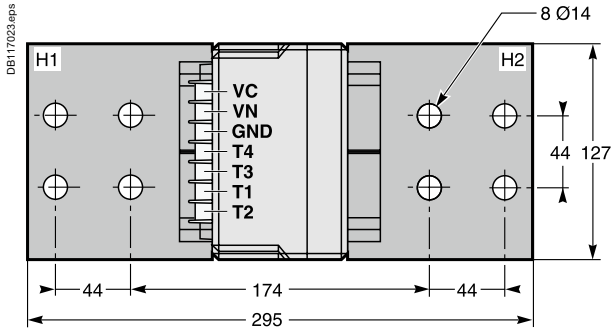
Dimensions

400/2000 A (MVS)



High: 162 mm.

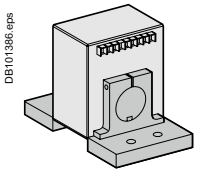
1000/4000 A (MVS)



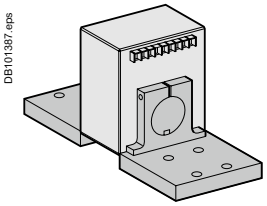
High: 162 mm.

Installation

400/2000 A (MVS)



1000/4000 A (MVS)



Note: *Only for MVS T3*

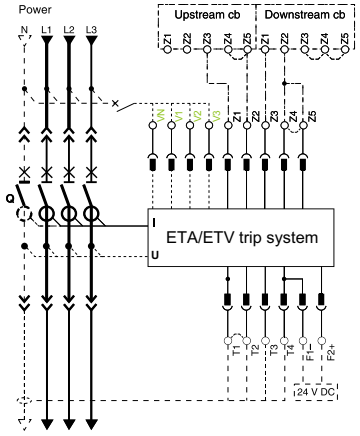
Electrical Diagrams

Electrical Diagrams

EasyPact MVS T3
Fixed and Draw-out Devices

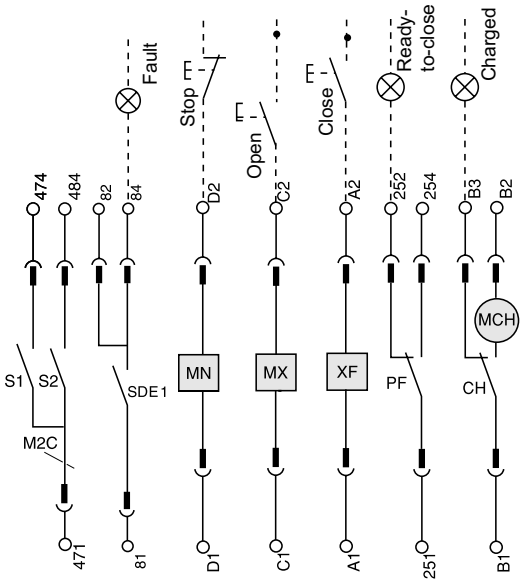
The diagram is shown with circuits de-energised, all devices open, connected and charged and relays in normal position.

Power



Note: V1...VN Voltage connections are available in ETV trip system.

ETA Trip System



Remote Operation

ETA Trip System				
Com	**UC1**	**UC2**	**UC3**	**M2C**
E5 E6	Z5 M1	M2 M3	F2+	484
E3 E4	Z3 Z4	T3 T4	VN	474
E1 E2	Z1 Z2	T1 T2	F1 –	471

Remote Operation					
SDE	**MN**	**MX**	**XF**	**PF**	**MCH**
84	D2	C2	A2	254	B2
82				252	B3
81	D1	C1	A1	251	B1

ETA Trip System

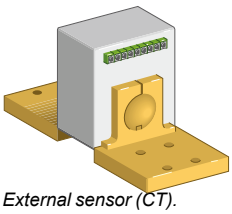
UC1 :
Z1-Z5 zone selective interlocking
Z1=ZSI OUT SOURCE
Z2=ZSI OUT ; Z3 = ZSI IN SOURCE
Z4 =ZSI IN ST (short time)
Z5 =ZSI IN GF (earth fault)
COM :E1-E6
communication

UC2 :
T1, T2, T3, T4=external neutral
MC2 : 2 programmable contacts (external relay)
ext. 24 Vdc power supply required.
UC3 :
F2+, F1-: external 24 Vdc power supply

Remote Operation

SDE: Fault-trip indication contact (supplied as standard)
MN: Undervoltage release
MX: Shunt release (standard for Electrical breaker)
XF: Closing release (standard for Electrical breaker)
PF: Ready to close contact
MCH: Gear motor (standard for Electrical breaker)

E47477



External sensor (CT).

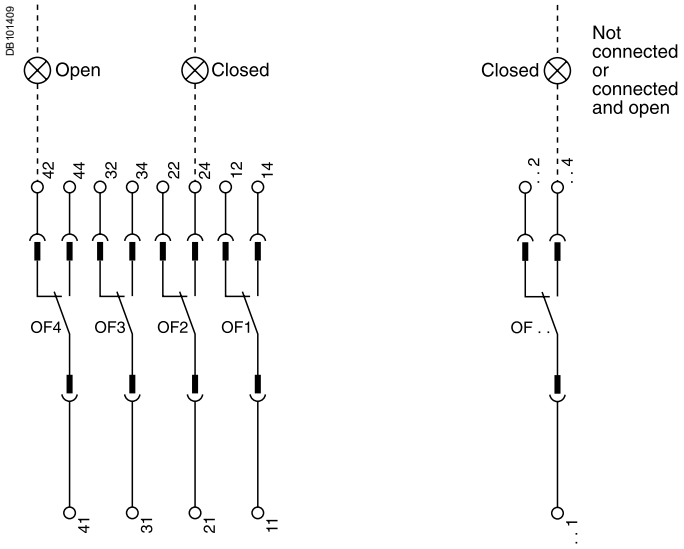
External Sensors (Neutral CT)

External sensor for earth-fault protection
The sensors, used with the 3P circuit breakers, are installed on the neutral conductor for:
1. Residual type earth-fault protection (ETA 6G trip system)

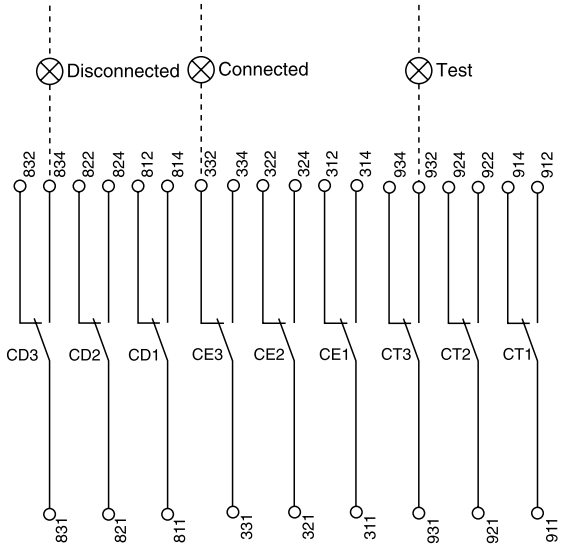
The rating of the sensor (CT) must be compatible with the rating of the circuit breaker:
1. MVS: CT 400/2000;
2. MVS: CT 1000/4000;

EasyPact MVS T3
Fixed and Draw-out Devices

Indication Contacts



Chassis Contacts



Indication Contacts

OF4	OF3	OF2	OF1
44	34	24	14
42	32	22	12
41	31	21	11

Standard

OF14	OF13	OF12	OF11
144	134	124	114
142	132	122	112
141	131	121	111

Optional

Chassis Contacts

CD3	CD2	CD1	CE3	CE2	CE1	CT3	CT2	CT1
834	824	814	334	324	314	934	924	914
832	822	812	332	322	312	932	922	912
831	821	811	331	321	311	931	921	911

Optional

Indication Contacts

OF 4	Standard
OF 3	ON/OFF
OF 2	Indication contacts
OF 1	

OF 14	Optional
OF 13	ON/OFF
OF 12	Indication contacts
OF 11	

Chassis Contacts

CD3 Disconnected	CE3 Connected	CT3 Test
CD2 Position	CE2 Position	CT2 Position
CD1 Contacts	CE1 Contacts	CT1 Contacts

Key:

Draw-out device only

XXX *SDE1, OF1, OF2, OF3, OF4 supplied as standard*

Interconnected connections (only one wire per connection point)

EasyPact MVS T3
Earth-Fault Protection
Neutral Protection

External Sensor (CT) for Residual Earth-fault Protection

Connection of current-transformer secondary circuit for external neutral

EasyPact MVS equipped with a ETA6G:

- Shielded cable with two twisted pairs
- T1 twisted with T2
- Maximum length 4 meters
- Cable cross-sectional area 0.4 to 1.5 mm^2
- Recommended cable: Belden 9552 or equivalent

For proper wiring of neutral CT, refer to instruction bulletin 48041-082-03 shipped with it.

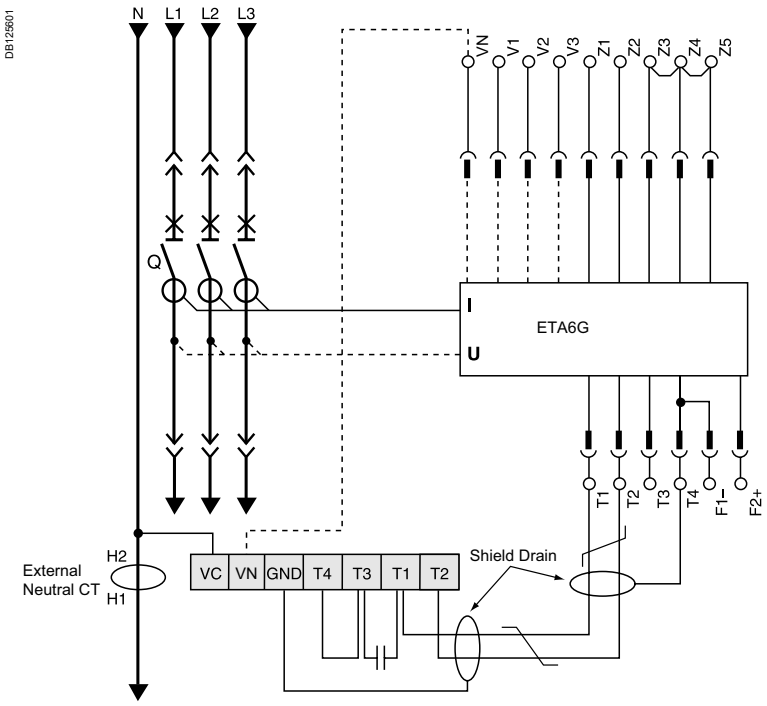
Do not remove factory-installed jumper between T1 and T2 unless neutral CT is connected.

If supply is via the top, follow the shematics.

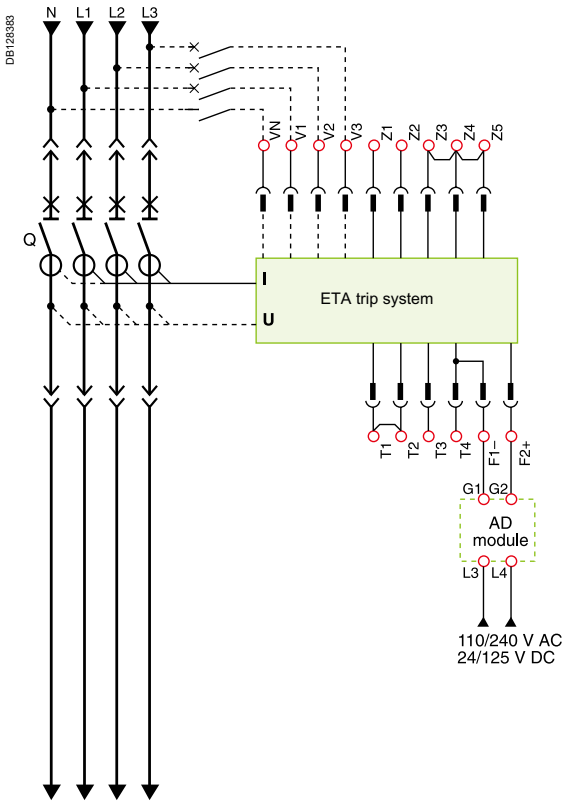
If supply is via the bottom, control wiring is identical.

For the power wiring, H1 is connected to the source side, H2 to the load side.

For four-pole versions, for residual earth-fault protection, the current transformer for the external neutral is not necessary.



EasyPact MVS T3
24 Vdc External Power Supply AD Module



- With ETA, it is recommended to connect 24 Vdc external power-supply (AD module) to the Micrologic control unit (F1- F2+) in order to keep available the display and the energy metering, even if Current < 20 % In
- If the 24 Vdc external power supply (AD module) is used to supply ET trip system, this power supply shall be used only for supplying ET trip system.

Connections

The maximum length for each conductor supplying power to the trip unit is 10 m.

Do not ground F2+, F1-, or power supply output:

- The positive terminal (F2+) on the trip unit must not be connected to earth ground.
- The negative terminal (F1-) on the trip unit must not be connected to earth ground.
- The output terminals (- and +) of the 24 Vdc power supply must not be grounded.

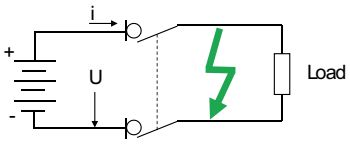
Reduce electromagnetic interference:

- The input and output wires of the 24 Vdc power supply must be physically separated as much as possible.
- If the 24 Vdc power supply wires cross power cables, they must cross perpendicularly. If this is not physically possible, the power supply conductors must be twisted together.
- Power supply conductors must be cut to length. Do not loop excess conductor.

EasyPact MVS DA1
Fixed Devices

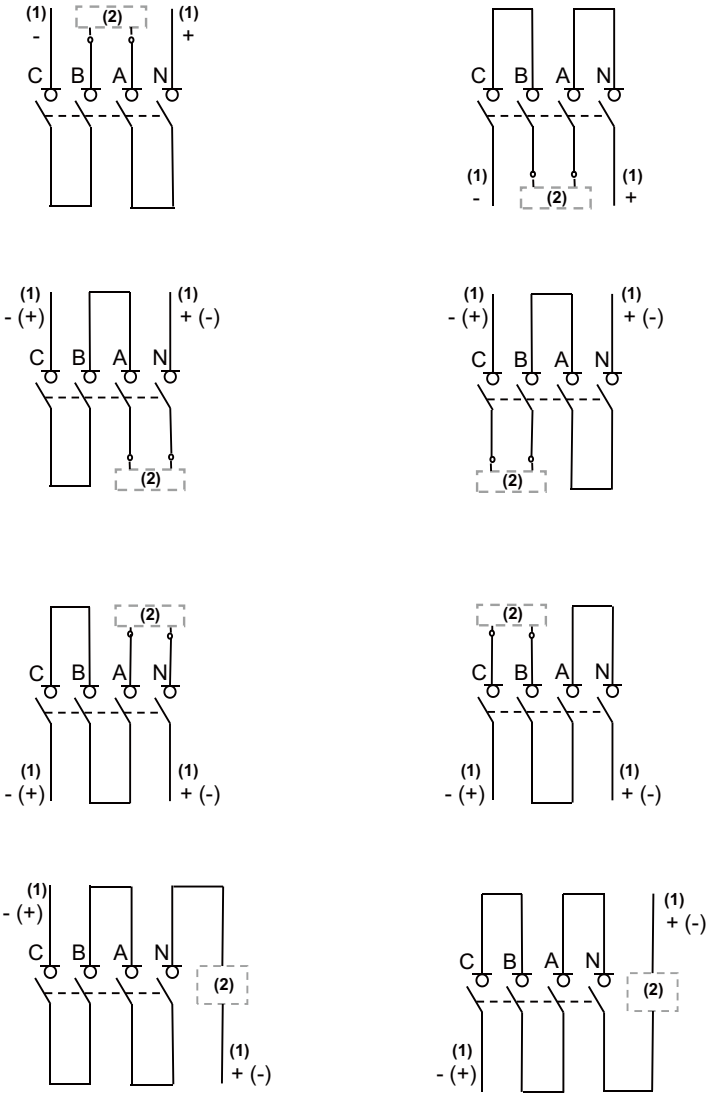
The diagram is shown with circuits de-energised, all devices open, connected and charged and relays in normal position.

Power



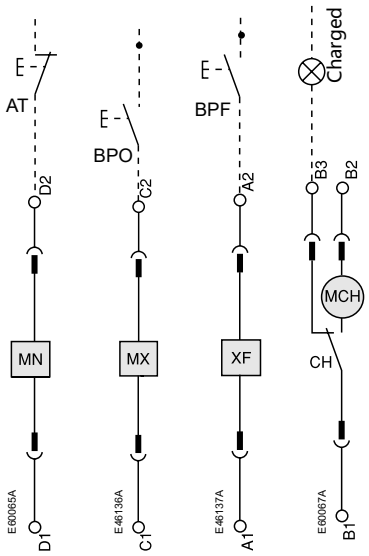
Note:
MVSDA-PV2 disconnectors for photovoltaic applications are designed and certified to cut off the rated current at 1500 Vdc when all three or four poles are connected in series, which is a mandatory condition. This means that the PV system using DA1 disconnector must be isolated from the ground. If it is applied to the grounding system, it may break the current at full voltage (1500 Vdc) when only 1 or 2 poles are connected in series, and the disconnector may suffer irreparable damage.

Diagram of MVSDC 4P



Note: the positive and negative poles of the power can be reversed

Remote Operation



Remote Operation

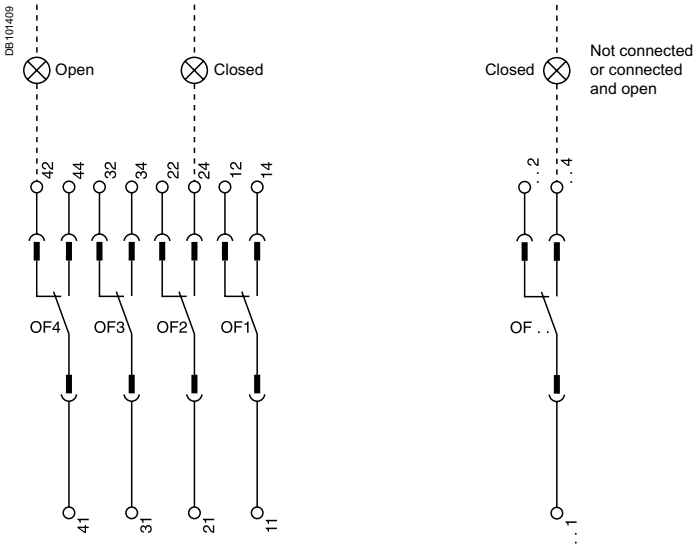
MN	MX	XF	MCH
D2	C2	A2	B2
			B3
D1	C1	A1	B1

Remote Operation

MN: Undervoltage release
MX: Shunt release (standard for Electrical breaker)
XF: Closing release (standard for Electrical breaker)
MCH: Gear motor (standard for Electrical breaker)

EasyPact MVS DA1
Fixed Devices

Indication Contacts



Indication Contacts

OF4	OF3	OF2	OF1
44	34	24	14
42	32	22	12
41	31	21	11

Standard

OF14	OF13	OF12	OF11
144	134	124	114
142	132	122	112
141	131	121	111

Optional

Indication Contacts

OF4	Standard
OF3	ON/OFF
OF2	Indication contacts
OF1	

OF 14	Optional
OF 13	ON/OFF
OF 12	Indication contacts
OF 11	

Key:

XXX OF1、OF2、OF3、OF4 supplied as standard

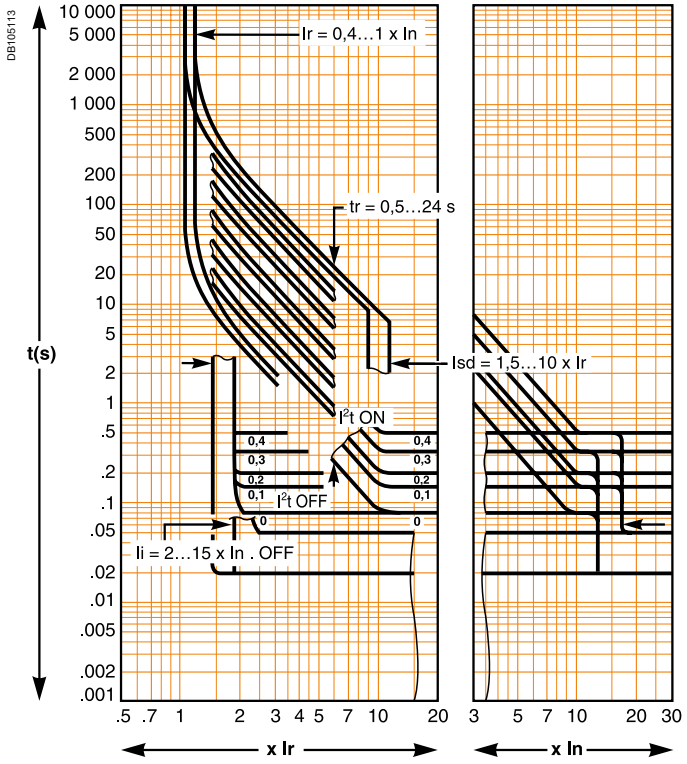
Interconnected connections (only one wire per connection point)

Additional Characteristics

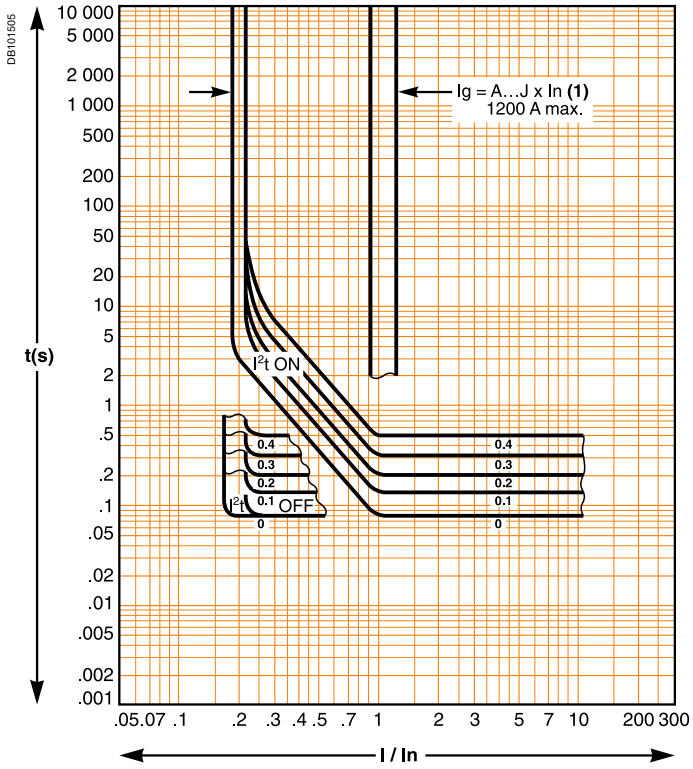
Additional characteristics

Tripping Curves

ETA Range of Trip System - 6G



Earth Fault Protection (ETA Range of Trip System - 6G)



(1)

Ig = In x...	A	B	C	D	E	F	G	H	I
In y 400 A	0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
400 A < In y 1000 A	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
In u 1250A	500	640	720	800	880	960	1040	1120	1200

Tripping Curves

Catalogue Numbers and Order Form

Catalogue Numbers and Order Form

EasyPact MVS T3

EasyPact MVS T3

Range	Current Rating	Type	Pole	Installation	Protection		Aux. Voltage
					No.	Type	
EasyPact MVS (from 800 to 4000 A)							
MVS	08 10 12 16 20 25 32 40	T3	3	F D	6	A	2

2: Electrical operated 200/240Vac (MCH + XF+MX)

A: Ammeter (current measurment)

6: 6.0 LSIG protection

F: Fixed
D: Drawout

Number of poles
3P: 3 Poles

Type based on breaking capacity
T3: 66 kA(1140V)

Current rating
08: 800 A
10: 1000 A
12: 1250 A
16: 1600 A
20: 2000 A
25: 2500 A
32: 3200 A
40: 4000 A

Example 1 MVS20T33D6A2

MVS	20	T3	3	D	6A	2
EasyPact MVS	2000A	66KA	3 poles	Drawout	ETA 6G Trip System	2: Electrical operated 200/240Vac

EasyPact Type T3 with ETA6G trip unit(3P)

	Current rating (A)	Fixed	Drawout
Electrical 200/240Vac	800	MVS08T33F6A2	MVS08T33D6A2
	1000	MVS10T33F6A2	MVS10T33D6A2
	1250	MVS12T33F6A2	MVS12T33D6A2
	1600	MVS16T33F6A2	MVS16T33D6A2
	2000	MVS20T33F6A2	MVS20T33D6A2
	2500	MVS25T33F6A2	MVS25T33D6A2
	3200	MVS32T33F6A2	MVS32T33D6A2
	4000	MVS40T33F6A2	MVS40T33D6A2

EasyPact MVS DA1

EasyPact MVS DA1

Range	Current Rating	Type	Pole	Installation			Aux. Voltage
EasyPact MVS (from 1600 to 4000 A)							
MVS	16 20 25 32 40	DA1	4	F			2 2 : Electrical operated 200/240 Vac (MCH+XF+MX) 7 : Electrical operated 24/30 Vdc (MCH+XF+MX)
				F: Fixed			
			Number of poles 4P: 4 Poles				
		Type based on breaking capacity DA1: 100kA (1500V)					
	Current rating 16: 1600 A 20: 2000 A 25: 2500 A 32: 3200 A 40: 4000 A						

Example 2 MVS32DA14F7

MVS	32	DA1	4	F	7
EasyPact MVS	3200A	100kA	4 poles	Fixed	7: Electrical operated 24/30Vdc

EasyPact Type DA1 (4P)

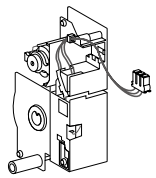
	Current rating (A)	Fixed
Electrical 200/240Vac	1600	MVS16DA14F2
	2000	MVS20DA14F2
	2500	MVS25DA14F2
	3200	MVS32DA14F2
	4000	MVS40DA14F2
Electrical 20/30 Vdc	1600	MVS16DA14F7
	2000	MVS20DA14F7
	2500	MVS25DA14F7
	3200	MVS32DA14F7
	4000	MVS40DA14F7

EasyPact MVS T3 and DA1
Remote Operation

Remote Operation

Gear motor

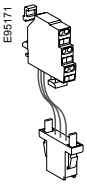
E95172



E95169

Fixed.

E95171

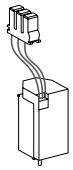


Draw-out.

MCH (1 part)		
AC 50/60 Hz	100/130 V	47893
	200/240 V	47894
	380/415 V	47896
DC	24/30 V	47888
	48/60 V	47889
	100/125 V	47890
	200/250 V	47891
Terminal block (1 part)	For fixed circuit breaker	47074
	For draw-out circuit breaker	47849

Closing Release (XF)

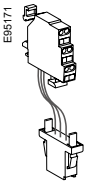
E95170



E95169

Fixed.

E95171

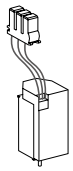


Draw-out.

Standard coil (1 part)		
AC 50/60 Hz	24/30 V DC, 24 V AC	33659
DC	48/60 V DC, 48 V AC	33660
	100/130 V AC/DC	MVS15511
	200/250 V AC/DC	MVS15512
	380/480 V AC	MVS15513
Terminal block (1 part)	For fixed circuit breaker	47074
	For draw-out circuit breaker	47849

Opening Release (MX)

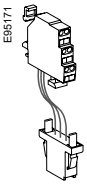
E95170



E95169

Fixed.

E95171

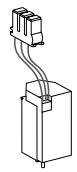


Draw-out.

Standard coil (1 part)		
AC 50/60 Hz	24/30 V DC, 24 V AC	33659
DC	48/60 V DC, 48 V AC	33660
	100/130 V AC/DC	33661
	200/250 V AC/DC	33662
	380/480 V AC	33664
Terminal block (1 part)	For fixed circuit breaker	47074
	For draw-out circuit breaker	47849

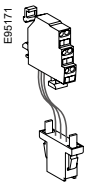
Remote Operation

Undervoltage Release MN



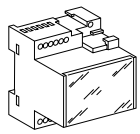
Undervoltage release (1 part)		
AC 50/60 Hz DC	24/30 V DC, 24 V AC	33668
	48/60 V DC, 48 V AC	33669
	100/130 V AC/DC	33670
	200/250 V AC/DC	33671
	380/480 V AC	33673
Terminal block (1 part)	For fixed circuit breaker	47074
	For draw-out circuit breaker	47849

Fixed.



Draw-out.

MN Delay Unit



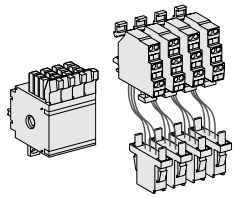
MN delay unit (1 part)			
		R (non-adjustable)	**Rr** (adjustable)
AC 50/60 Hz DC	48/60 V AC/DC		33680
	100/130 V AC/DC	33684	33681
	200/250 V AC/DC	33685	33682
	380/480 V AC/DC		33683

EasyPact MVS T3 and DA1
Indication Contacts

Indication Contacts

ON/OFF Indication Contacts (OF) / 12 parts

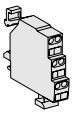
E46689



1 additional block of 4 contacts		47887
Wiring	For fixed circuit breaker	47074
	For draw-out circuit breaker	47849

Connected, Disconnected, and Test Position Indication Contact (Carriage Switches) / 1 part

E46661



Changeover contacts	6 A - 240 V	33170

Auxiliary Terminals for Chassis Alone

3 wire terminal (1 part)	47849
6 wire terminal (1 part)	47850
Jumpers (10 parts)	47900

EasyPact MVS T3 and DA1
Accessory

Accessory

Top cover of arc chamber	M0MVS14111

U shape connection terminal	M0DC00020

Life Is On Schneider Electric

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