

Safety enclosures

Normal atmospheres

steel enclosures from 50 to 1600 A



The solution for

- > Steel works
- > Cement works
- > Paper mills
- > Sawmills
- > Hydropower plants
- > Automotive
- > Mining



Strong points

- > Operator safety
- > Quick and easy implementation
- > Robust product
- > Operating continuity
- > Highly inductive load breaking

Conformity to standards

- > IEC 60364
- > IEC 60947-3
- > IEC 60204-1
- > IEC 61439-2



Specific requirements

- > SOCOMEC can offer customised solutions to meet your specific requirements. Please contact your Socomec office for further information.

Function

Safety enclosures equipped with SOCOMEC switches provide emergency switching-off, breaking for mechanical maintenance and safety isolation and lockout in the vicinity of any low voltage final circuit.

Advantages

Operator safety

- Protects operators against accidental start-up of machines.
- Ease of operation without risk of error for unqualified operators.
- Maximum security for all types of simple mechanical and electrical maintenance operations.
- The space available within the enclosure and the dimensions of the closing plates facilitate connection.
- A reversible (internal or external) grounding bar is used to connect grounding wires.

Durability

The product is designed for harsh industrial environments with mechanical risks or non-explosive dust hazards.

Operating continuity

- Local disconnection: only the targeted machine is switched off, the rest of the installation can continue operating.
- Reduced costs related to production downtime.

Highly inductive load breaking

The safety enclosure is intended for use with any size in AC23 (highly inductive load, motor cut-off).

General characteristics

Box

The robustness of the safety enclosure is ensured by its 2 mm thick sheet steel construction. Corrosion protection is provided by a 70 µm thick polyester powder coating (RAL 7035). The door is hinge-mounted (120° opening) and is secured with a key lock (8 mm square key). The enclosure has an IP65 degree of protection.



Breaking device

Safety enclosures are equipped with SOCOMEC load break switches which provide visible indication of the contact's open position. They make and break under load conditions and provide safe isolation for any low voltage circuit. Visible disconnection and visible breaking indication through the door window and a factory-fitted mechanical flag indicator, provide guaranteed position indication of the contacts.

Operating handle

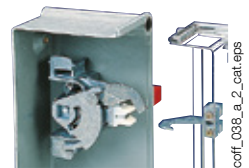
The safety enclosure is fitted with a steel operating handle, which is used for both normal and emergency cut-off operations. The handle can be locked with up to 3 padlocks with a diameter of between 4 and 8 mm. The safety enclosure can also be factory fitted with a plastic handle with a metal padlocking lever, or a red metallic handle.

Double locking

Double locking prevents the door from opening when the switch is closed and the switch from closing when the door is open. With the use of a tool authorised personnel can bypass this system when the door is open for maintenance purposes.

The locking system comprises a single guard moulded from zamak (aluminium alloy).

This function is achieved through a simple and robust mechanism using an extension shaft.



Auxiliary control

Auxiliary controls can be mounted on a dedicated plate. Several wiring combinations can be factory-fitted or supplied for customer's fit. Available as standard on enclosures from 50 to 160 A.

Connections

Two removable top and bottom plates are intended for cable inputs and cable connection. Cables are connected either to cage terminals or directly to the terminals. From 200 A, the input is connected on a descending sets of busbars.

Others

A grounding bar is used to connect grounding wires. These cables can be connected to the same device inside or outside the enclosure. The enclosures are fitted with a protective screen on live parts to avoid direct contact.

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References

Safety enclosure, bottom/bottom connection



Rating (A)	Motor power output (kW) ⁽¹⁾⁽²⁾		No. of poles	Bottom/bottom
	400 V	690 V		References
50	15	-	3 P	3273 3005
			4 P	3273 4005
			6 P	3273 6005
80	22	7.5	3 P	3273 3008
			4 P	3273 4008
			6 P	3273 6008
125	63	75	3 P	3273 3012
			4 P	3273 4012
160	63	75	3 P	3273 3016
			4 P	3273 4016
200	110	150	3 P	3273 3020
			4 P	3273 4020
			6 P	3273 6020
400	220	295	3 P	3273 3040
			4 P	3273 4040
630	375	90	3 P	3273 3063
			4 P	3273 4063
800	375	110	3 P	3273 3080
			4 P	3273 4080
1250	600	185	3 P	3273 3120
			4 P	3273 4120
1600	600	185	3 P	3273 3160
			4 P	3273 4160

(1) Without pre-break option.

(2) The power value is given for information only; the current values vary from one manufacturer to another.

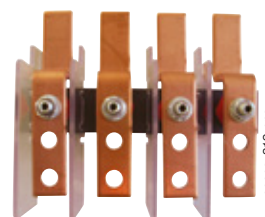
Accessories

Terminal connection kit for 125 and 160 A enclosures

Use

Kit for connecting to the terminals of 125 and 160 A safety enclosures. Enables you to connect up to 2 x 35 mm² cables or 1 x 70 mm² cable. Supplied with terminal separation screens and connection cables to the unit.

Description	No. of poles	References
Enclosure terminal block	3 P	3290 1015
Enclosure terminal block	4 P	Please contact us



Accessories (continued)

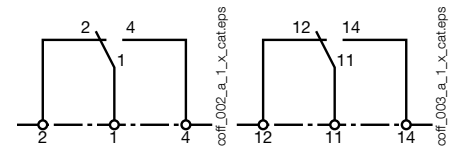
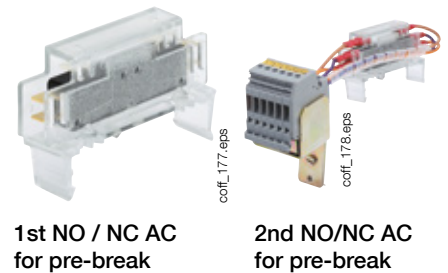
Auxiliary contacts

Use
For pre-breaking and signalling of positions O and I of the load break switch.

Mounting
• On the double locking system.

Description	Rating (A)	References ⁽¹⁾
		References
2 AC for pre-break and signalling O and I	50 ... 1600	2999 0012
2 AC low level for pre-break and signalling O and I	50 ... 1600	2999 0112
2 AC for pre-break and signalling O and I, wired	50 ... 1600	3290 6003
2 AC low level for pre-break and signalling O and I, wired	50 ... 1600	3290 6113

(1) Mounting not compatible with an auxiliary control interface.



Auxiliary control interface from 50 to 1600 A

Use
To control and command the equipment.

Mounting
• Push buttons are wired to sprung terminals, with 2 onsite connection points. 1 NO/NC pre-break auxiliary contact is provided for and wired.
• The plate is mounted on the right side of the enclosure below the operating handle.



Control diagrams ⁽¹⁾	Auxiliary control ⁽²⁾	Button allocation	References ⁽³⁾
Start/Stop	2 pushbuttons, 22 mm Ø (1 green, 1 red). Identification labels "Start" and "Stop"		3290 2110
Start/Stop and Local/Remote	2 pushbuttons, 22 mm Ø (1 green, 1 red), 1 selector with 2 positions. Identification labels "Start" and "Stop" - "Local/Remote"		3290 2112
Forward/Reverse	3 pushbuttons, 22 mm Ø (2 green, 1 red). Identification labels "Start", "Stop" and "Reverse"		3290 2114
Start/Stop/Reverse and Local/Remote	3 pushbuttons, 22 mm Ø (2 green, 1 red), 1 selector with 2 positions. Identification labels "On" - "Off" - "Direction2" - "Local/0/Remote" and "Start" - "Stop" - "Reverse" - "Auto/0/Manu"		3290 2116 ⁽⁴⁾

(1) See "Control diagrams".

(2) Labels are available in French and English.

(3) Mounting not compatible with mounting an auxiliary contact.

(4) The mounting of a key handle interlocking system is not compatible with this auxiliary control interface for 50 and 80 A ratings.

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Accessories (continued)

Handle key interlocking accessories

Use

Locking prevents handle operation.

Type of lock	Reference
Ronis EL11AP	4409 8511
Serv Trayvou NXOP10	4409 8601
Mounting kit (lock not included) ⁽¹⁾	
Rating (A)	Reference
50 ... 160	3290 7007
200 ... 1600	3290 7009

⁽¹⁾ Mounting compatible with the control interface and a maximum of 3 auxiliary contacts.
Please contact us for further information.

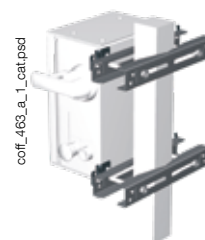


Post mounting

Use

For mounting the safety enclosure to a round or square post.

Rating (A)	Reference
50 ... 80	3290 7252
125 ... 160	3290 7254



Enclosure Canopy

Use

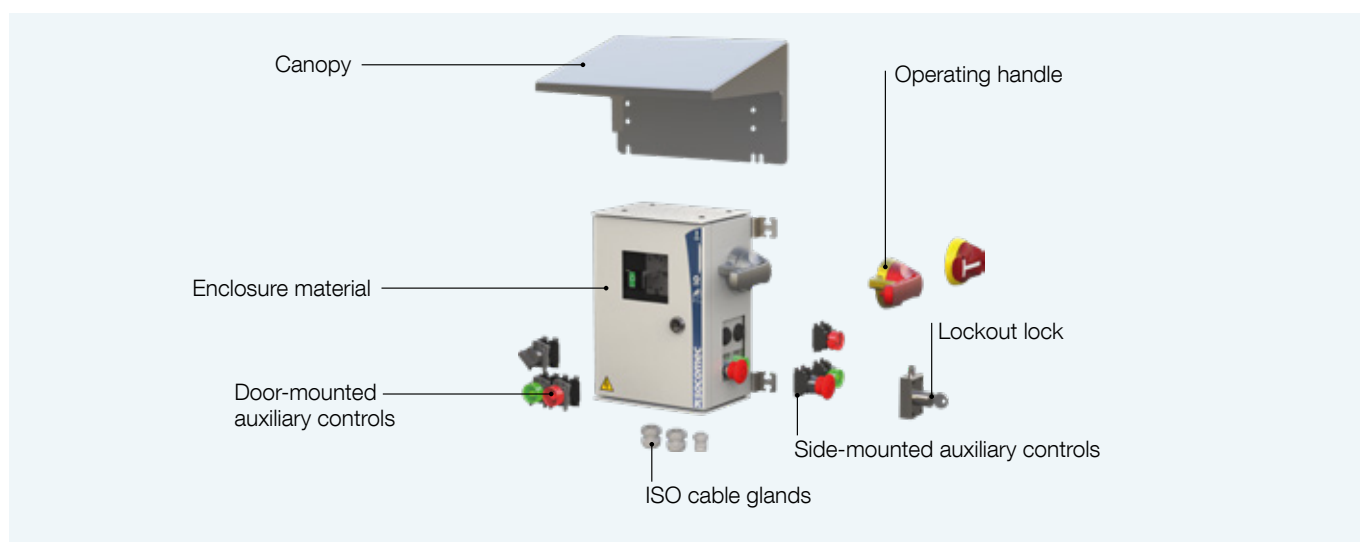
To protect the enclosure against extreme weather.

Rating (A)	Reference
50 ... 80	3290 7212
125 ... 160	3290 7214



Enclosure(s) configurable on request

The CTO (Configure to Order) offer, enables customisation of steel safety enclosures to specific requirements. This offer includes a range of predefined options such as control/command accessories or connections. This flexibility ensures that each enclosure is perfectly adapted to the various expectations expressed.

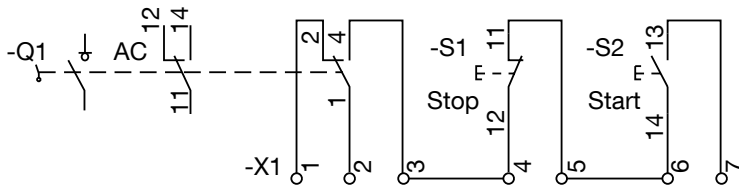


For additional information, contact your local Socomec sales agent.

Control diagrams

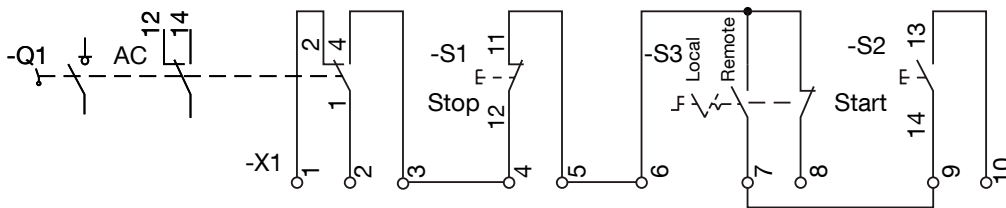
On/off

coeff_465_b_1_gb_cat.ai



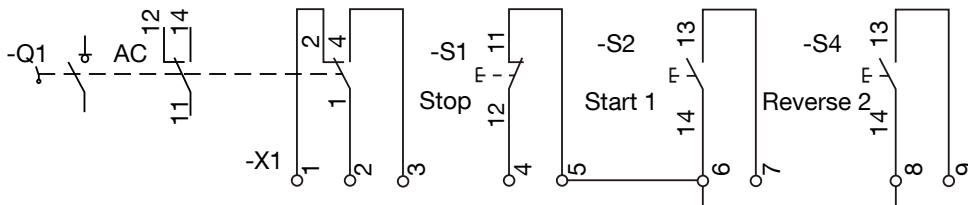
Start/stop and local/remote

coeff_466_b_1_gb_cat.ai



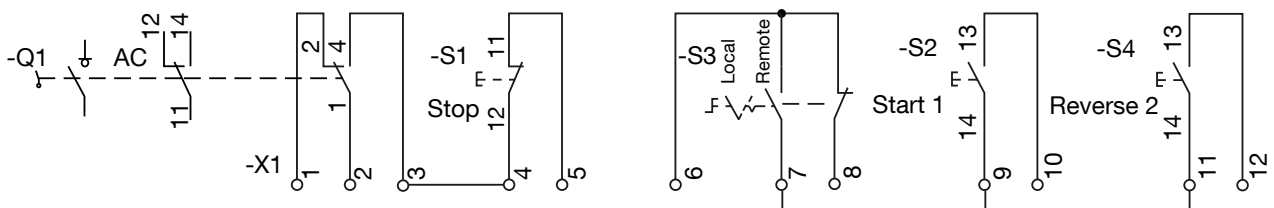
2 working directions

coeff_467_b_1_gb_cat.ai



2 working directions and local/remote

coeff_468_b_1_gb_cat.ai



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Characteristics

Characteristics according to IEC 60947-3

Rating (A)		50 A	80 A	125 A	160 A	200 A	400 A	630 A	800 A	1250 A	1600 A
Rated operating current I_o (A)											
Rated voltage	Utilisation category	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
400 VAC	AC-21A	50	80	125	160	200	400	630	800	1250	1600
400 VAC	AC-22A	50	63	125	160	200	400	630	800	1250	1250
400 VAC	AC-23A	32	40	125	125	200	400	630	630	1000	1000
690 VAC	AC-21A	40	63	125	160	160	400	630	800	1000	1250
690 VAC	AC-22A	25	63	80	100	160	400	315	315	400	400
690 VAC	AC-23A	-	10	80	80	80	80	100	100	200	200
Operational power (kW)⁽¹⁾											
At 400 VAC without pre-break AC		15	22	63	63	110	220	375	375	600	600
At 690 VAC without pre-break AC		-	7.5	75	75	150	295	90	110	185	185
At 400 VAC with pre-break AC		25	33	63	80	110	220	375	475	750	750
At 690 VAC with pre-break AC		22	55	75	90	150	400	295	295	400	400

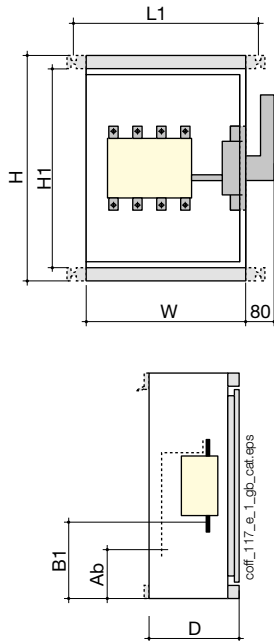
according to IEC 61439

Rating (A)	50 A	80 A	125 A	160 A	200 A	400 A	630 A	800 A	1250 A	1600 A
Max. operating current I_o (A) 400 V	50	80	125	160	200	400	630	800	1250	1600
Max. operating current I_o (A) 690 V	50	80	125	160	200	400	630	800	1250	1600
Rated insulation voltage U_i (V)	690	690	800	800	800	800	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	6	6	8	8	8	8	12	12	12	12
Rated frequency (Hz)	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Mechanical characteristics										
Connection										
Minimum copper cable cross-section (mm ²)	6	16	10	10	-	-	2x150	2x185	-	-
Maximum copper cable cross-section (mm ²)	16	35	70	70	120	2x150	2x300	2x300	4x185	4x240
Min./max. tightening torque (Nm)	2	2	4 / 4.4	4 / 4.4	8.3/13	20/26	20/26	20/26	20/26	40/45

(1) The power value is given for information only, the current values vary from one manufacturer to another.

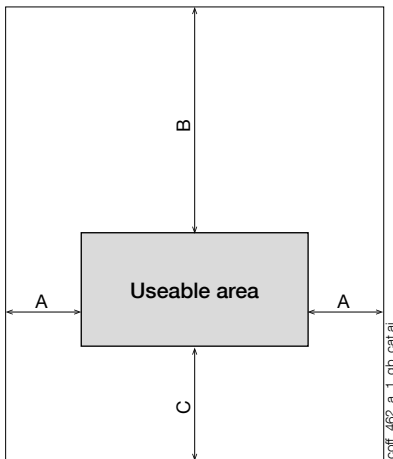
Dimensions

50 to 1600 A



Rating (A)	No. of poles	H x W x D (mm)	Mounting		Connection		Weight (kg)
			H1 (mm)	L1 (mm)	Ab (mm)	B1 (mm)	
50 A	3 P	310 x 215 x 150	258	263	-	168	9
	4 P	310 x 215 x 150	258	263	-	168	9.5
	6 P	300 x 400 x 200	252	448	-	160	10
80 A	3 P	310 x 215 x 150	258	263	-	168	9
	4 P	310 x 215 x 150	258	263	-	168	9.5
	6 P	300 x 400 x 200	252	448	-	140	10
125 A	3 P	400 x 275 x 165	348	323	-	200	17
	4 P	400 x 300 x 165	348	348	-	200	18
	6 P	400 x 400 x 200	460	448	240	275	21
160 A	3 P	400 x 275 x 165	348	323	-	200	17
	4 P	400 x 300 x 165	348	348	-	200	18
200 A	3 P	400 x 350 x 200	348	405	155	188	21
	4 P	400 x 350 x 200	348	405	155	188	21
	6 P	500 x 400 x 200	448	455	222	254	23
400 A	3 P	700 x 500 x 250	648	555	315	345	35
	4 P	700 x 500 x 250	648	555	315	345	35
630 A	3 P	900 x 550 x 330	848	605	308	401	82
	4 P	900 x 550 x 330	848	605	308	401	85
800 A	3 P	900 x 550 x 330	848	605	282	398	82
	4 P	900 x 550 x 330	848	605	282	398	85
1250 A	3 P	1150 x 600 x 400	1098	640	411	441	95
	4 P	1150 x 700 x 400	1098	740	411	441	115
1600 A	3 P	1150 x 600 x 400	1098	640	377	471	105
	4 P	1150 x 700 x 400	1098	740	377	471	125

Closing plate



Rating (A)	A (mm)	B (mm)	C (mm)
50 ... 200	20	60	30
400 ... 1600	30	60	30