

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 breaking, breaking for mechanical maintenance, safety isolation and can be used 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.

Quick and easy implementation

The space available within the enclosure and the dimension of the closing plates facilitate connection.

Robust product

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 designed for use in AC-23 (highly inductive load, motor breaking) for all ratings.

General characteristics

Enclosure

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. 4 stainless steel mounting brackets are supplied with the enclosure.

Switching device

Steel safety enclosures are equipped with visible break SOCOMEC load break switches. They make and break under load conditions and provide safety isolation for any low voltage circuit. Visible contacts, mechanical flag indicator and positive break indication provide guaranteed position indication of the contacts.



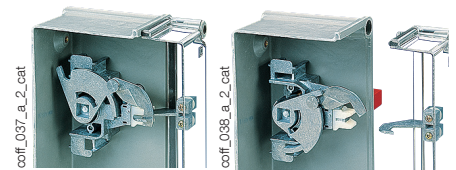
Operating handle

The safety enclosure is equipped with an unpainted metal 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. As an alternative to the standard metallic handle, a red plastic handle with a metal padlocking lever, or a red metallic handle, can be factory fitted on request.

Double locking

Double locking prevents the opening of the enclosure door with the switch in its closed position and the closing of the switch 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). Double locking is provided by a simple and robust mechanism driven directly by the handle's operating shaft.



Auxiliary control

A removable plate, located below the enclosure's operating handle, is supplied for the installation of auxiliary controls.

Several wiring combinations are available as pre-installed or customer-fit options.

TEXT TO BE REMOVED

Connections

Two removable (top and bottom) gland plates facilitate cable entry and connections. Cables are connected either to cage terminals or directly to the terminals. From 200 A, the incoming connection is onto a descending sets of busbars.

Miscellaneous

An earthing strip is used to connect earthing cables. These cables can be connected to the same device inside or outside the enclosure.

The enclosures are equipped with a protective cover on active parts to avoid direct contact.

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References

Safety enclosure with bottom/bottom connection⁽¹⁾



Photo of an enclosure fitted with options and accessories.

TEXT TO BE REMOVED

Refer to the following pages.

Rating (A)	Operational power (kW) ⁽³⁾⁽⁴⁾		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) For top/bottom connection, please contact us.

(2) For front operation handle, please contact us.

(3) Without pre-break option.

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

Accessories

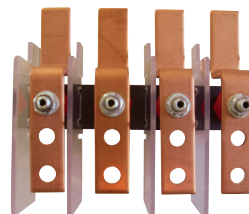
Terminal connection kit for 125 and 160 A enclosures

Use

Power terminal connection kit for 125 and 160 A safety enclosures. Allows you to connect up to 2 x 35 mm² cables or 1 x 70 mm² cable per pole. Supplied with terminal separation screens and connection cables to the switch (for onsite installation).

Description	No. of poles	Customer fit	Factory-fitted ⁽¹⁾
		References	References
Enclosure terminal block	3 P	3290 1015	Please contact us
Enclosure terminal block	4 P	Please contact us	Please contact us

(1) Please specify enclosure reference.



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Accessories (continued)

Auxiliary contacts

Use

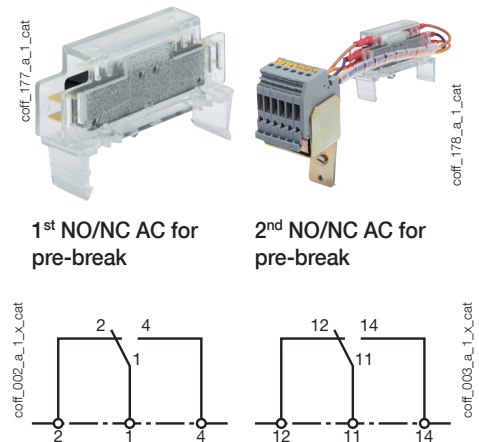
For pre-breaking and signalling of positions O and I of the load break switch.

Mounting

- On the double-locking system
- Possibility of factory mounting within the enclosure

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

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



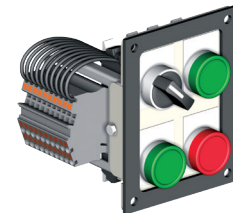
Auxiliary control interface from 50 to 1600 A

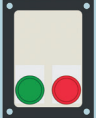
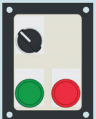
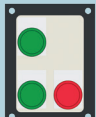
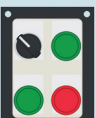
Use

For machine control.

Mounting

- Pushbuttons are wired to terminal block, with 2 onsite connection points. 1 NO/NC pre-break auxiliary contact is provided for and wired in all control diagrams.
- The removable interface plate is mounted on the right side of the enclosure below the operating handle.
- Factory installation option available (quote the enclosure reference when you place your order).



Control diagrams ⁽¹⁾	Auxiliary control ⁽²⁾	Button allocation	Customer fit ⁽³⁾	Factory-fitted ⁽³⁾⁽⁴⁾
Start/Stop	2 pushbuttons, 22 mm Ø (1 green, 1 red). Identification labels "Start" and "Stop"		3290 2110	Please contact us
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	Please contact us
Forward/Reverse	3 pushbuttons, 22 mm Ø (2 green, 1 red). Identification labels "Start", "Stop" and "Reverse"		3290 2114	Please contact us
Start/Stop/Reverse and Local/Remote	3 pushbuttons, 22 mm Ø (2 green, 1 red), 1 selector with 2 positions. Identification labels "Start", "Stop" and "Reverse" - "Local/Remote"		3290 2116 ⁽⁵⁾	Please contact us

(1) See "Control diagrams".

(2) Labels are available in French and English.

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

(4) Please specify enclosure reference.

(5) 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)

Labelling of the enclosure

Use

Personalise your enclosure. A form should be completed upon ordering.

Type of label	Customer fit	Factory-fitted ⁽¹⁾
Set of 10 embossed labels 80 x 30, black lettering on a white background Text as per list provided - rating should be mentioned Mounted with plastic rivets	Please contact us	Please contact us
Push button label, white lettering on a red background	Please contact us	Please contact us
Push button label, black lettering on a white background	Please contact us	Please contact us
Push button label, white lettering on a black background	Please contact us	Please contact us

(1) Please specify enclosure reference.



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Operation lock-out device

Use

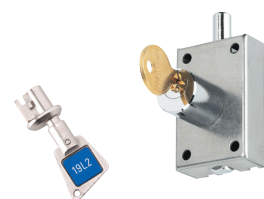
Locking prevents handle operation.

Type of lock	Reference
Ronis EL11AP	4409 8511
Serv Trayvou NXOP10	4409 8601
Mounting kit for customer fit (lock not included) ⁽¹⁾	
Rating (A)	Reference
50 ... 160	3290 7007
200 ... 1600	3290 7009
Factory fitted option ^{(1) (2) (3)}	
Rating (A)	Reference
50 ... 160	Please contact us
200 ... 1600	Please contact us

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

(2) Please specify enclosure reference

(3) Includes lock EL11AP



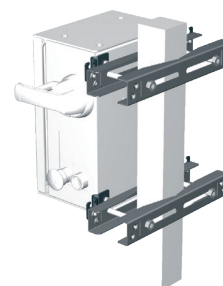
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Post mounting

Use

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

Rating (A)	Reference
50 ... 80	3290 7252
125 ... 160	3290 7254
> 160	Please contact us



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Enclosure canopy

Use

To protect the enclosure against extreme weather.

Rating (A)	Reference
50 ... 80	3290 7212
125 ... 160	3290 7214
> 160 A	Please contact us



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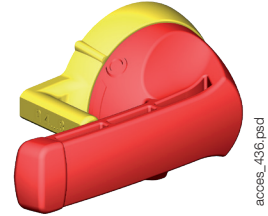
Operating handle

Use

For switch operation. Factory assembly only.

Rating (A)	Handle type	Reference ⁽¹⁾
50...160	Red S type handle, steel metal strip	Please contact us
50...160	Red steel handle	Please contact us
200...400	Red S type handle, steel metal strip	Please contact us
200...400	Red steel handle	Please contact us
630...1600	Red S type handle, steel metal strip	Please contact us
630...1600	Red steel handle	Please contact us

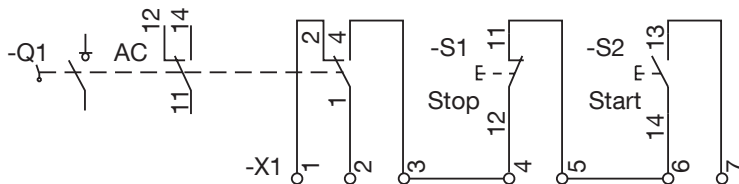
(1) Please specify enclosure reference.



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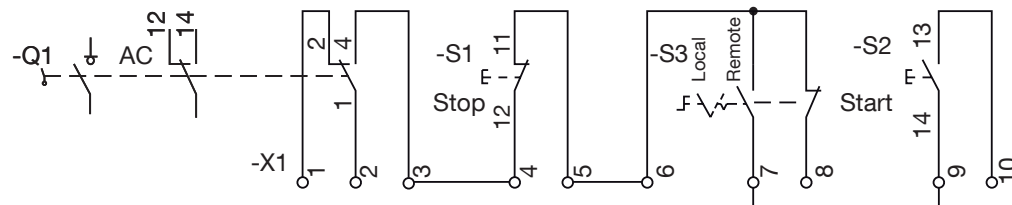
Control diagrams

Start/Stop



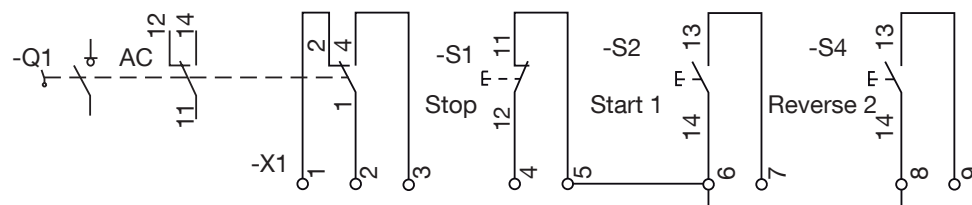
conf_465_b_1_gb_cat.ai

Start/stop and local/remote



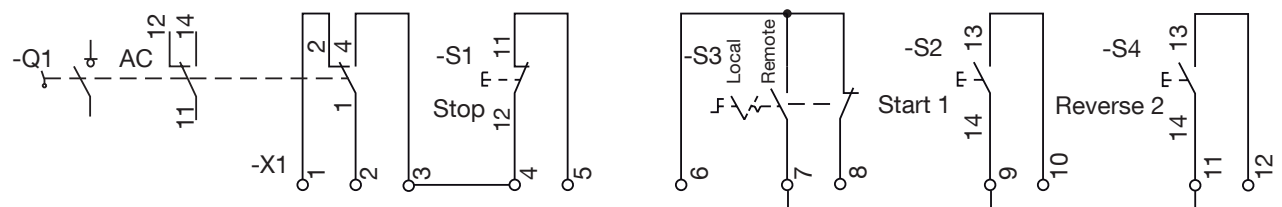
conf_466_b_1_gb_cat.ai

Forward/Reverse



conf_467_b_1_gb_cat.ai

Forward/Reverse and Local/Remote



conf_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_e (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_e (A) 400 V	50	80	125	160	200	400	630	800	1250	1600
Max. operating current I_e (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

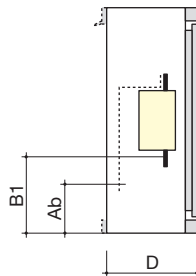
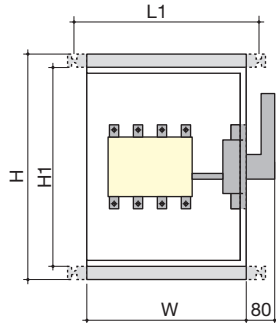
Mechanical characteristics

Connection										
Minimum copper cable cross-section (mm²)	6	16	10	10	-	-	2x150	2x185	-	-
Maximum copper cable cross-section (mm²)	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

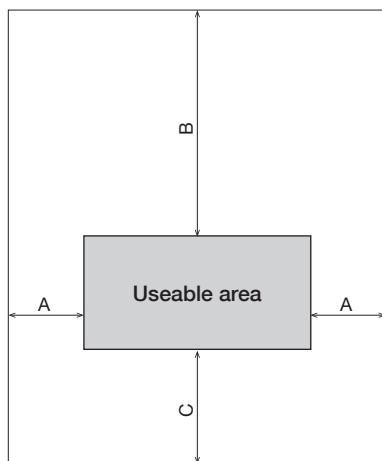
50 to 1600 A



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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



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