

Safety enclosures

Normal atmospheres

steel enclosure from 50 to 1600 A



The solution for

- Iron and steel industry
- Cement plants
- Paper mills
- Sawmills
- Hydraulic power packs
- Automotive
- Mining



Strong points

- Operator safety
- Quick and easy implementation
- Operating continuity
- Inductive load breaking (AC23)

Compliance with standards

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

Specific requirements

- SOCOMEC can offer you customised solutons to meet your specific requirements. Contact your Socomec office for further information.

Function

Safety enclosures equipped with SOCOMEC switches provide emergency breaking, breaking for mechanical maintenance and safety isolation 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 dimensions of the closing plates facilitate connection.

Durability

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

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.

Inductive load breaking (AC23)

Safety enclosures are designed for use with inductive loads and are able to make and break on-load (AC23).

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 retaining brackets delivered with the enclosure.

Switching device

Steel safety enclosures are equipped with visible break SOCOMEC load break switches. They make and break under load and provide safety isolation for any low voltage electric circuit. Separation of the contacts is visible through the triplex window, located on the enclosure door, providing guaranteed isolation to the operator. A mechanical indicator, linked directly to the operation of the contacts, is also provided to give clear position indication.

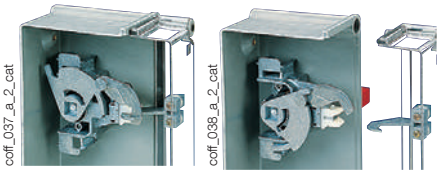

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Operating handle

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


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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) with 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.

Connections

Two removable (top and bottom) gland plates facilitate cable entry and connections.

Cables connect directly onto switch power terminals for enclosures ≤ 160A; for ≥ 200A incoming cables connect to descending copper bars.

Miscellaneous

A reversible grounding point enables the termination of earth connections inside and/or outside of the enclosure.

All active parts are covered to avoid direct contact.

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References

Safety enclosure with bottom/bottom connection(1), side operation(2)



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Photo of an enclosure fitted with options and accessories. Standard models shown here with plain grey handle and without control interface.
Refer to the following pages.

Rating (A)	Motor power output (kW) (3)(4)		No. of poles	Bottom/Bottom
	400 V	690 V		Reference
50	22	-	3 P	3273 **3005**
			4 P	3273 **4005**
			6 P	3273 **6005**
80	30	8	3 P	3273 **3008**
			4 P	3273 **4008**
			6 P	3273 **6008**
125	55	75	3 P	3273 **3012**
			4 P	3273 **4012**
160	75	75	3 P	3273 **3016**
			4 P	3273 **4016**
200	90	75	3 P	3273 **3020**
			4 P	3273 **4020**
			6 P	3273 **6020**
400	220	75	3 P	3273 **3040**
			4 P	3273 **4040**
630	200	75	3 P	3273 **3063**
			4 P	3273 **4063**
800	355	110	3 P	3273 **3080**
			4 P	3273 **4080**
1250	560	160	3 P	3273 **3120**
			4 P	3273 **4120**
1600	650	180	3 P	3273 **3160**
			4 P	3273 **4160**

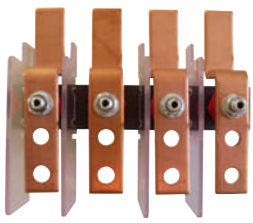
(1) For top/bottom connection please contact us.
(2) For front operation please contact us.
(3) Without pre-break option.
(4) Power values are given for information only, the current values vary from one manufacturer to another.

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 cables for connection to the switch (for onsite installation).



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Designation	No. poles	Customer fit	Factory fitted(1)
		Reference	Reference
Enclosure terminal block	3 P	3290 **1015**	3290 **1016**
Enclosure terminal block	4 P	Contact us	Contact us

(1) Please specify enclosure reference.

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Accessories (continued)

Auxiliary contacts

Use

For pre-breaking and signalling of positions 0 and I of the load break switch.

Mounting

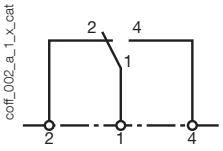
- On the double-locking system.
- Possibility of factory mounting within the enclosure (please provide enclosure reference when ordering).

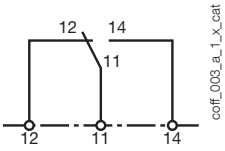




1st NO/NC AC for pre-break

2nd NO/NC AC for pre-break





Description	Rating (A)	Customer fit (1) Reference	Factory fitted (1) Reference
2 AC for pre-break and signalling O and I	50 … 1600	2999 **0012**	2999 **1012**
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**	3290 **6103**
2 AC low level for pre-break and signalling O and I, wired	50 … 1600	3290 **6113**	3290 **6013**

(1) Mounting not compatible with a command and control interface.

Auxiliary control interface from 50 to 1600 A

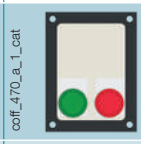
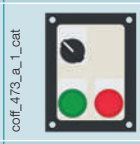
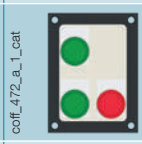
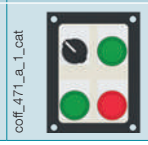
Use

For machine control.

Mounting

- Pushbuttons are wired to terminal block, with 2 onsite connection points. 2 NO/NC auxiliary contacts for pre-break are provided with one utilised in all control options; the 2nd contact is not pre-wired and is available for use.
- The removable interface plate is mounted on the right side of the enclosure below the operating handle.
- Factory installation or customer fit options are available.



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**	3290 **2111**
Start/Stop and Local/Remote	2 pushbuttons, 22 mm Ø (1 green/1 red): Identification labels “Start” and “Stop” 1 selector with 2 positions: Identification label “Local-Remote”		3290 **2112**	3290 **2113**
Forward/Reverse	3 pushbuttons, 22 mm Ø (2 green/1 red): Identification labels “Start”, “Stop” and “Reverse”		3290 **2114**	3290 **2115**
Forward/Reverse and Local/Remote	3 pushbuttons, 22 mm Ø (2 green/1 red): Identification labels “Start”, “Stop” and “Reverse” 1 selector with 2 positions: Identification label “Local-Remote”		3290 **2116** (5)	3290 **2117** (5)

(1) See “Command diagrams”.
(2) Labels are identified in English and French languages.
(3) Mounting not compatible with an auxiliary.
(4) Please specify enclosure reference.
(5) The mounting of a latch locking mechanism is not compatible with this control/command interface with 50 and 80 A ratings.

Accessories (continued)

Traffolyte labels

Use

Personalise your enclosure. Information to be provided at time of order when factory fit option is requested.

Examples of label types	Customer fit	Factory fitted (1)
Set of 10 embossed labels, size 80 x 30 mm with black lettering on a white background. Text according to your requirements. Mounted with plastic rivets	Contact us	Contact us
Pushbutton label, white lettering on a red background	Contact us	Contact us
Pushbutton label, black lettering on a white background	Contact us	Contact us
Pushbutton label, white lettering on a black background	Contact us	Contact us

(1) Please specify enclosure reference.



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Key handle interlocking system

Use

When enabled, the lock 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	3290 **7008**
200 … 1600	3290 **7010**

(1) Mounting compatible with control interface with a maximum of 3 auxiliary controls. Please contact us for more details.
(2) Please specify enclosure reference.
(3) Includes lock EL11AP.



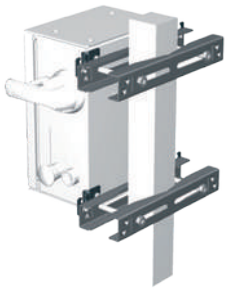
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Post mounting

Use

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

Rating (A)	Reference
50 … 80	3290 **7252**
125 … 160	3290 **7254**
> 160	Contact us



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Enclosure canopy

Use

To protect your enclosure against extreme weather.

Rating (A)	Reference
50 … 80	3290 **7212**
125 … 160	3290 **7214**
> 160 A	Contact us



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Operating handle

Use

For switch operation. Factory assembly only.

Rating (A)	Handle type	Reference(1)
50….160	S type handle, red with metal padlocking lever	3261 **0090**
50….160	Red steel handle	3261 **0092**
200…400	Red S type handle, steel metal strip	3261 **0094**
200…400	Red steel handle	3261 **0096**
630…1600	Red S type handle, steel metal strip	3261 **0098**
630…1600	Red steel handle	3261 **0100**

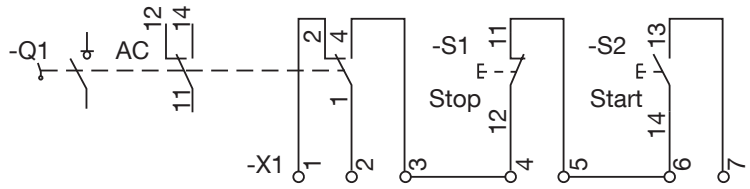
(1) Please specify enclosure reference.


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acces_436.psd

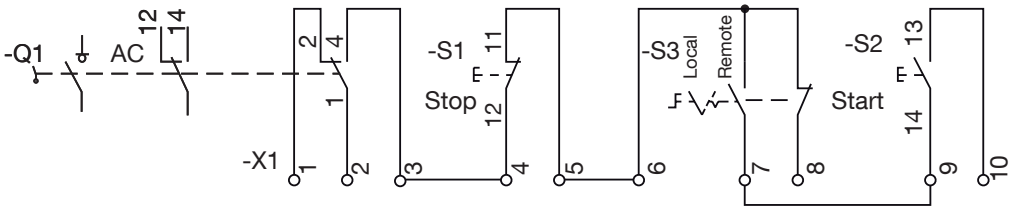
Control diagrams

Start/Stop



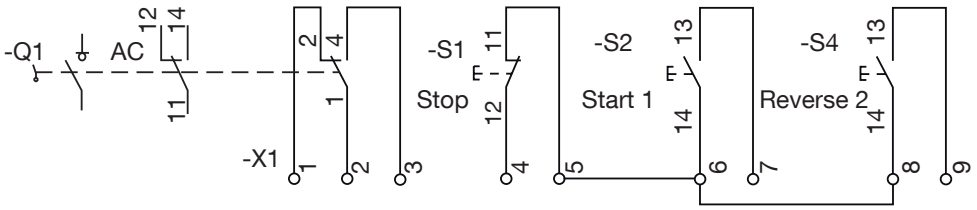
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Start/Stop and Local/Remote



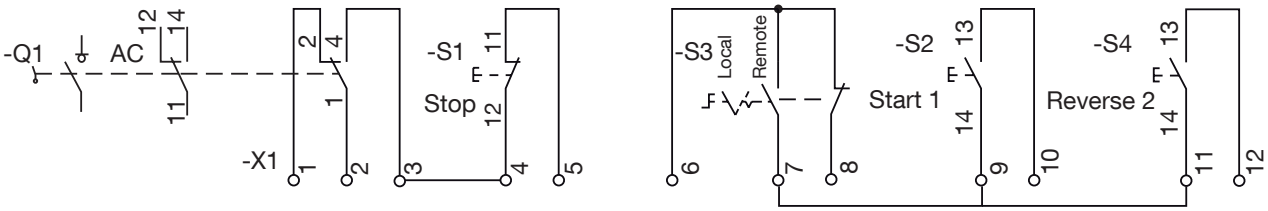
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Forward/Reverse



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Forward/Reverse and Local/Remote



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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
Motor power output (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

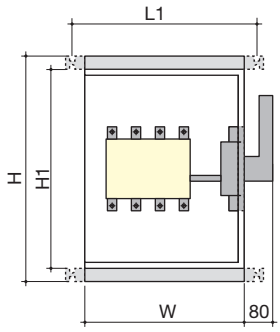
Characteristics according to IEC 61439-1

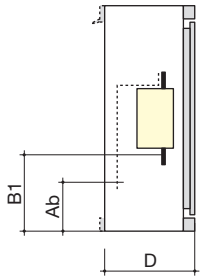
Rating (A)	50 A	80 A	125 A	160 A	200 A	400 A	630 A	800 A	1250 A	1600 A
Operating current max. I_e (A) 400V	50	80	125	160	200	400	630	800	1250	1600
Operating current max. I_e (A) 690V	50	80	125	160	200	400	630	800	1250	1600
Rated insulation voltage U_i (V)	690	690	800	800	800	800	1000	1000	1000	1000
Rated 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 specifications										
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

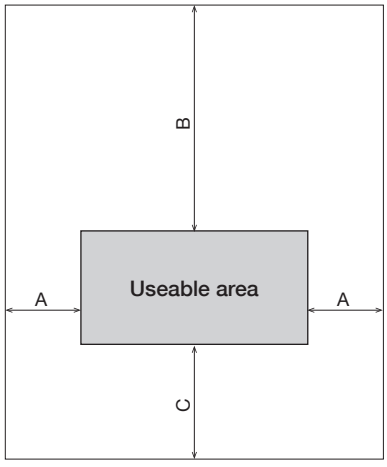




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Rating (A)	No. poles	H x W x D (mm)	Mounting		Connection		Weight (kg)
			H1 (mm)	L1 (mm)	Ab (mm)	B1 (mm)	
50 A	3 P	310 x 215 x 150	258	263	-	168	9
	4 P	310 x 215 x 150	258	263	-	168	9,5
	6 P	300 x 400 x 200	252	448	-	160	10
80 A	3 P	310 x 215 x 150	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

The useable area can be drilled for gland installation.