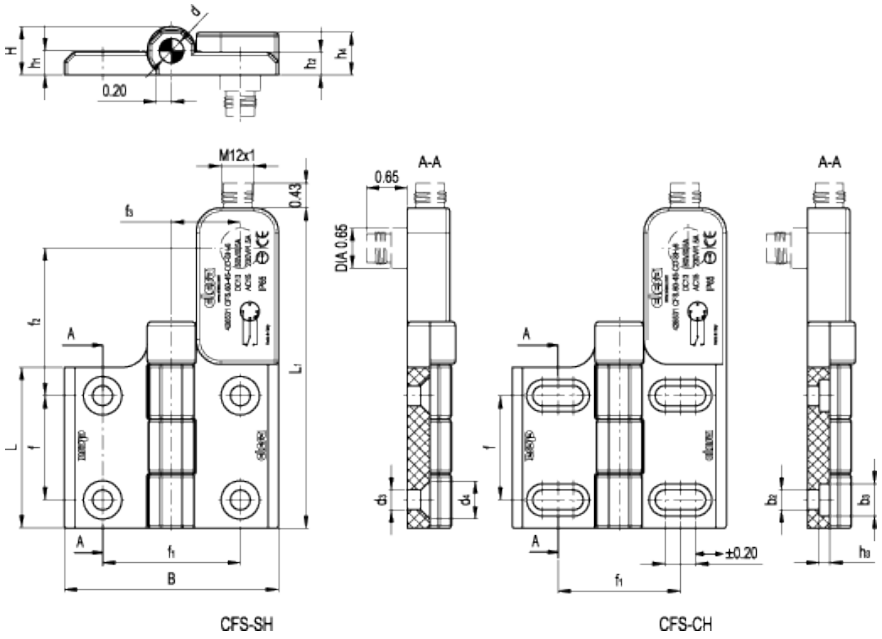
CFS.

Hinge with built-in safety switch

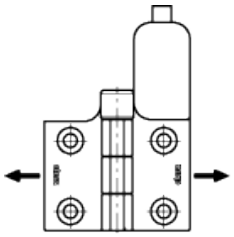
ELESA Original design



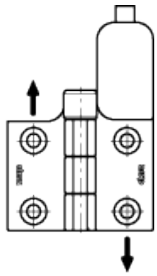
american unit
metric unit

Elesa Standards		Main dimensions												Fitting through holes					Weight
Code	Description	L	B	L_1	f	f_1	f_2	f_3	H	h_1	h_2	h_4	d	d_3	d_4	b_3	h_3	b_2	lbs g
426531	CFS.60-45-SH-6-A-D	2.05 52	2.76 70	4.33 110	1.34 34	1.77 45	- -	- -	0.63 16	0.31 8	0.3 7.5	0.55 14	0.31 8	0.26 6.5	0.49 12.5	- -	- -	- -	0.187 85
426521	CFS.60-45-SH-6-A-S	2.05 52	2.76 70	4.33 110	1.34 34	1.77 45	- -	- -	0.63 16	0.31 8	0.3 7.5	0.55 14	0.31 8	0.26 6.5	0.49 12.5	- -	- -	- -	0.187 85
426533	CFS.60-45-SH-6-B-D	2.05 52	2.76 70	4.33 110	1.34 34	1.77 45	2.03 51.5	0.89 22.5	0.63 16	0.31 8	0.3 7.5	0.55 14	0.31 8	0.26 6.5	0.49 12.5	- -	- -	- -	0.187 85
426523	CFS.60-45-SH-6-B-S	2.05 52	2.76 70	4.33 110	1.34 34	1.77 45	2.03 51.5	0.89 22.5	0.63 16	0.31 8	0.3 7.5	0.55 14	0.31 8	0.26 6.5	0.49 12.5	- -	- -	- -	0.187 85
426592	CFS.60-SL-CH-6-A-D	2.05 52	2.76 70	4.33 110	1.34 34	1.57 40	- -	- -	0.63 16	0.31 8	0.3 7.5	0.55 14	0.31 8	- -	- -	0.41 10.5	0.16 4	0.26 6.5	0.187 85

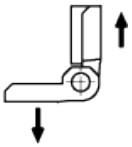
Elesa Standards		Main dimensions												Fitting through holes					Weight
Code	Description	L	B	L_1	f	f_1	f_2	f_3	H	h_1	h_2	h_4	d	d_3	d_4	b_3	h_3	b_2	lbs g
426582	CFS.60-SL-CH-6-A-S	2.05 52	2.76 70	4.33 110	1.34 34	1.57 40	- -	- -	0.63 16	0.31 8	0.3 7.5	0.55 14	0.31 8	- -	- -	0.41 10.5	0.16 4	0.26 6.5	0.187 85
426594	CFS.60-SL-CH-6-B-D	2.05 52	2.76 70	4.33 110	1.34 34	1.57 40	2.03 51.5	0.89 22.5	0.63 16	0.31 8	0.3 7.5	0.55 14	0.31 8	- -	- -	0.41 10.5	0.16 4	0.26 6.5	0.187 85
426584	CFS.60-SL-CH-6-B-S	2.05 52	2.76 70	4.33 110	1.34 34	1.57 40	2.03 51.5	0.89 22.5	0.63 16	0.31 8	0.3 7.5	0.55 14	0.31 8	- -	- -	0.41 10.5	0.16 4	0.26 6.5	0.187 85



Radial strength



Axial strength



90° angled strength

american unit
metric unit

Elesa Standards	AXIAL STRENGTH	RADIAL STRENGTH	90° ANGLED STRENGTH	Tightening torque [ft·lbf] [Nm]
Description	Maximum working load Ea [lbf] [N]	Maximum working load Er [lbf] [N]	Maximum working load E90 [lbf] [N]	SH/CH
CFS.60-45-SH-6	470 2100	627 2800	291 1300	4 5
CFS.60-SL-CH-6	215 960	269 1200	305 1360	3 4

Mechanical features	Electrical features	In compliance with
Type of contacts: Ag90 Ni10	Thermic power I the:3A	EN 60204-1
Maximum working frequence: 1200 operation/hour	Insulation: 2.5kv	EN 60947-5-1
Mechanical life-span: 5x105	Short-circuit protection: 6A/gl/gG	EN 60529
Protection: IP40 Switch and electrical contacts Protection degree: IP65 (electrical element, if it's connected) Only for indoor use	Use category: DC13 60Vdc/0.5A and 24 Vdc/2A AC15 230Vac/ 1.5A Insulation nominal voltage Uj: 250V	GS-ET15

Material
Glass-fibre reinforced polyamide based (PA) technopolymer. Resistant to solvents, oils, greases and other chemical agents.

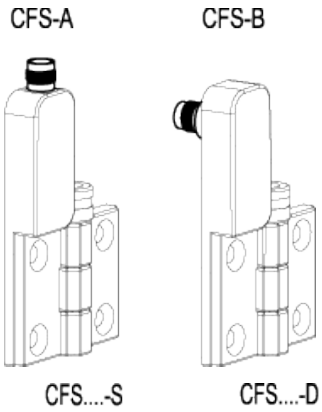
Colour
Black, matte finish.

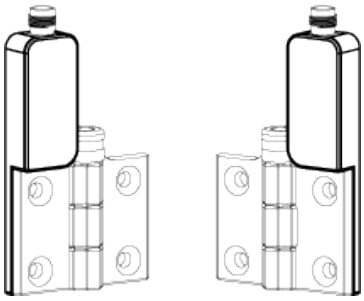
Rotation pin
AISI 303 stainless steel.

Standard executions
Mounting holes:
- SH: through holes for M6 countersunk-head screws.
- CH: through slotted holes for the adjustment of the hinge, suggested for shorted cylindrical head screws with hexagon socket in compliance with UNI 9327.

Switch position:
- S: switch placed on the left-hand body of the hinge.
- D: switch placed on the right-hand body of the hinge.

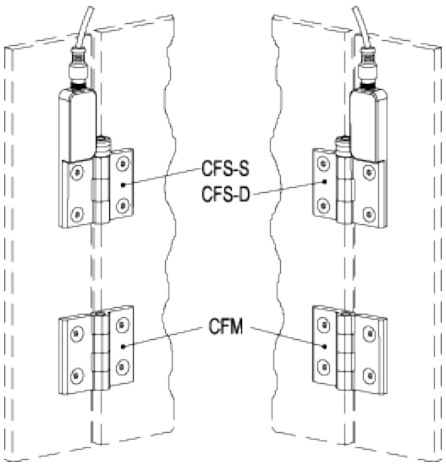
Connector position:
- A: wiring connector placed at the top side of the hinge.
- B: wiring connector placed at the rear of the hinge.





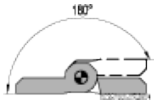
Features and applications
- Safety device: this hinge with built-in safety device (ELESA patent) guarantees the safety of the operator. In fact, even in case of accidental opening of doors or protection of machines and equipment in industrial environments, it automatically breaks off the power supply.
- Switch set with positive opening: there is no elastic connection between the mobile contacts and the actuator to which the working force is applied.
- Quick release switch: the stroke speed of the contact-holder slider does not depend on the working speed. If the door is opened slowly the contacts are released quickly (when the contact holder slider is released the electrical arc is broken off).
- Tamper-proof: both the fitter and the end-user cannot interfere with the hinge because the switch is built in a completely closed housing with ultrasonically welded cover.
- Easy to assemble: the built-in safety switch and the hinge come in one piece. This offers a very easy and fast assembly. The traditional systems require a separate assembly: the hinge and the safety switch are eventually connected by a special pin which replaces the standard pin of the hinge supplied.
- Universal usage: CFS. hinge can be assembled on the most common aluminium profiles.

Application example



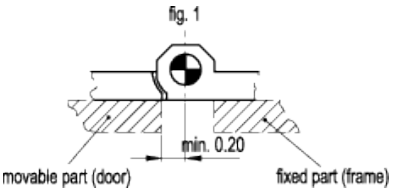
Rotation angle
Max 180°, between 0° and 180° (0° = condition where the two interconnected surfaces are on the same plane). In this position the hinge is provided with a stop device. The switching angle (see Built-in safety switch functioning) is guaranteed from this position.

Do not exceed the rotation angle limit so as not to prejudice the hinges mechanical performances and the correct functioning of the switch.



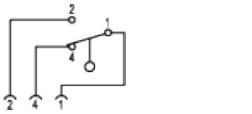
Accessories on request
Wire cables:
- Code 426505: CABLE-M12-5mt (16ft).
- Code 426510: CABLE-M12-10mt (32ft).

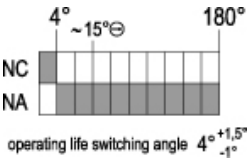
Assembly instructions
- Fit the hinge body with the built-in switch on the stationary frame and the other body on the door. The distance between the pin of the hinge and the door must be at least 0.20 (5 mm) (see fig.1).
- The hinge must not be used as a mechanical end-stroke for the door. We suggest you to use external mechanical stops for this purpose.
- A neutral hinge without switch, especially designed to be assembled in combination to CFS. is available, see CFM. with holes (CFM.60-45-SH-6 code 425812) or with slotted holes (CFM.60-SL-CH-6 code 425822).



Cables
- Cable with M12x1 connector following the scheme. To fit the hinge with the 90° connector follow the relevant drawing.
- N.C. normally closed contact: this contact only must be used for safety applications.
- N.A. normally open contact: only for status indication.

Built-in safety switch functioning
- The operating angle (see Operating life switching angle diagram) is set at 4° (we suggest to check it according to EN294). Under normal conditions of use, when the mechanical life of the device is over, the operating angle can get to 8°.
- For applications with safety protection function, the hinge must be able to turn at least to the positive opening stroke (15°).
- We suggest to check periodically and prior to the start up, the proper functioning of the CFS. hinge. When the protection is opened the machine must immediatly stop. When the protection is opened at any degrees, the machine must not be able to start.

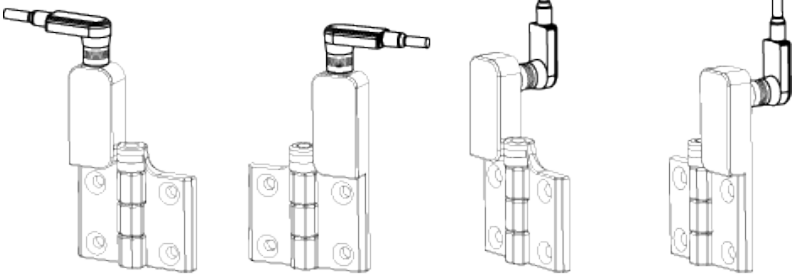




CE

Positive opening in compliance with EN 60947-5-1

CFS. with 90° connector assembled



Hinge with switch on the left body, axial output

Hinge with switch on the right body, axial output

Hinge with switch on the left body, back output

Hinge with switch on the right body, back output