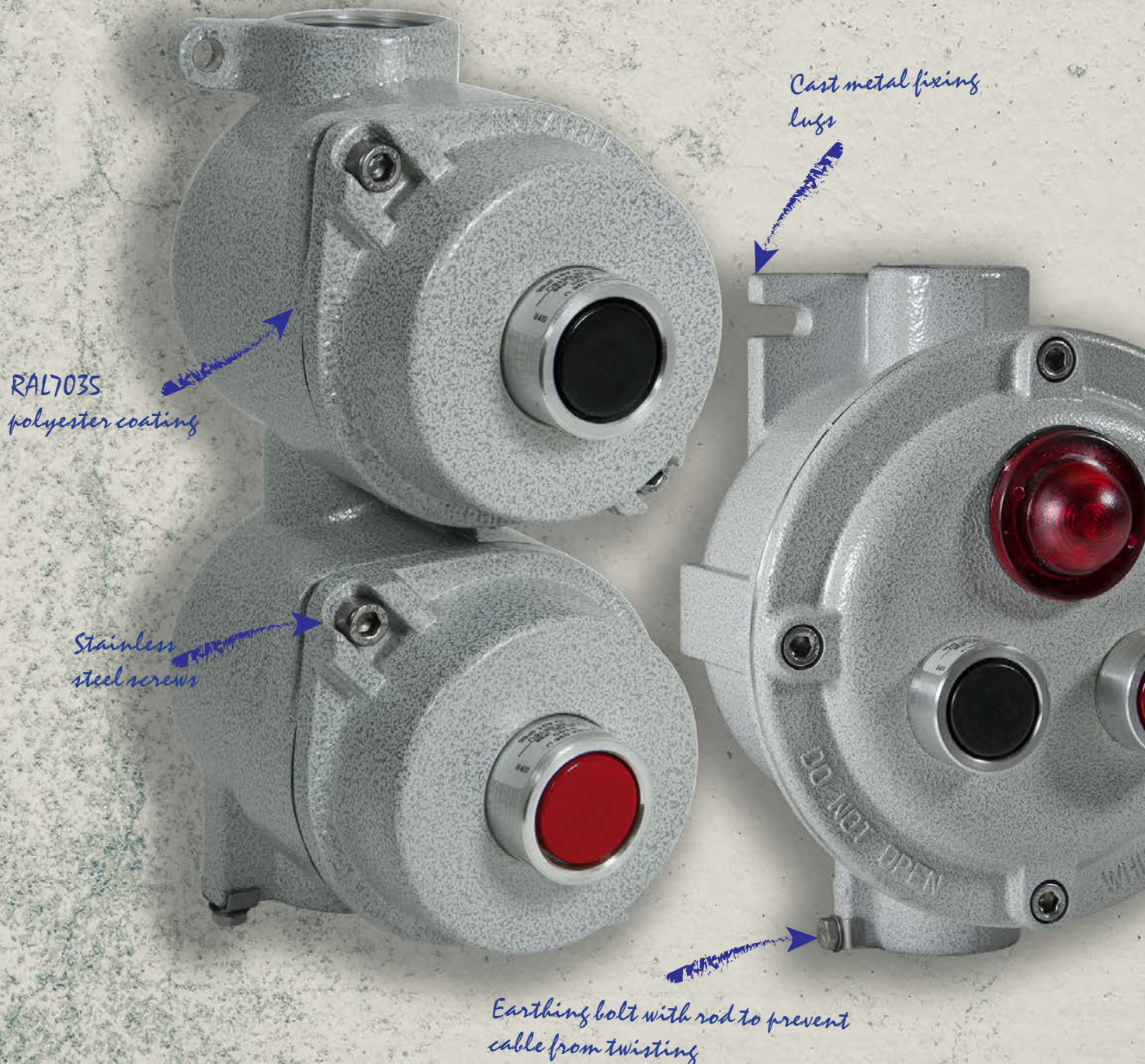


# CSC, EFSCO, EFDC, EMHA

## Command and control stations 'Ex d'

- Group IIC
- Zone 1, 2, 21, 22
- Aluminium alloy, stainless steel or cast iron enclosures
- Category 2GD or M2



# CSC Series... Control and signalling station

The Ex d IIC stations and controllers are suitable for the control and signalling of devices installed both "onboard" the machine and remotely (e.g. on a field control column). They are easily installed using wall mount lugs and have threaded entries for connection by means of a cable gland or metal pipe.

Used specifically in offshore and onshore environments, the chemical, petrochemical and pharmaceutical industries, and all locations which require an explosion proof system.

The switches, circuit breakers and selectors which make up the CSC series are 16 A rotary type with a front control handle. Supplied with 1" Male to 3/4" Female reducer. They are recommended for controlling devices both on board machine and on wall mounted columns. The various available cable arrangements make devices in the CSC series versatile for any type of use.

Cortem Group labels its products with a non-removable adhesive label featuring a hologram and an alphanumeric univocal code, as a safety measure against the illegal sale of fakes so that all the products are guaranteed as original. Non-compliance with the International standards entails serious risks for the environment, especially for those working daily on the plants.



## Sectors of application:



Petroleum refineries



Chemical and petrochemical plants



Onshore plants



Offshore plants



Petroleum loading/unloading pontoons



Low temperatures



Mining operations



100% produced by Cortem

## CERTIFICATION DATA

### Classification:

Group II

Category 2GD/M2

### Installation: EN 60079.14

zone 1 - zone 2 (Gas)

zone 21 - zone 22 (Dust)

### Marking:

CE 0722 Ex I M2 Ex db I Mb (stainless steel and cast iron ONLY)

CE 0722 Ex II 2 GD; Ex db IIC T...°C Gb; Ex tb IIIC T...°C Db

### Certificate:

ATEX CESI 01 ATEX 092 X

IEC Ex CES 17.0001X

TR CU AVAILABLE

For all IEC Ex and TR CU certification data, download the certificate from [www.cortemgroup.com](http://www.cortemgroup.com)

### Standards:

CENELEC EN 60079-0: 2012, EN 60079-0/A11: 2013, EN 60079-1: 2014 EN60079-31 2014 and European Directive 2014/34/EU

IEC 60079-0: 2011, IEC 60079-1: 2014, IEC 60079-31: 2013

RoHS Directive 2002/95/EC.

### Temperature class:

T6 (Ta +40°C)

T5 (Ta +55°C)

### Ambient Temp.:

-20°C +55°C

Standard

-50°C +55°C

Only for group II. The Group II monitoring and signalling units, equipped with polycarbonate signalling lenses, are limited to -40°C

### Degree of protection:

IP66



ATEX Certificate



IECEx Certificate



Use and maintenance instructions

## CSC Series... Control and signalling station



### CROSS-SECTION VIEW



### MECHANICAL FEATURES OF ENCLOSURES

<b>Body and lid:</b>	Low copper content aluminium alloy, complete with wall fastening lugs.
<b>Gaskets:</b>	Acid, hydrocarbon and high temperature resistant silicon positioned between the body and the cover
<b>Instrument casing:</b>	Borosilicate glass
<b>Certification label:</b>	Adhesive affixed to external surface
<b>Screws:</b>	Stainless steel
<b>Earth screw:</b>	Internal M5 on body and lid connected by a 2.5 mm <sup>2</sup> wire
<b>Coating:</b>	Polyester RAL 7035 (Light grey)
<b>Threaded entries:</b>	One upper and one lower Ø 1" complete with Male 1" - Female 3/4" adapter
<b>Resistenza alla corrosione:</b>	The STANDARD of the aluminium alloy used by Cortem has passed the tests required by standards EN60068-2-30 (hot-humid cycles) and EN60068-2-11 (salt fog test)

### MECHANICAL FEATURES OF CONTROL AND SIGNALLING DEVICES

<b>Pushbutton:</b>	Coloured nylon
<b>Illuminated pushbutton:</b>	Clear coloured polycarbonate
<b>Control levers:</b>	Coated aluminium alloy
<b>Badge:</b>	Anodised aluminium, white lettering on black background
<b>Internal bushing and pin:</b>	Stainless steel
<b>Gaskets:</b>	Acid and hydrocarbon resistant NBR
<b>Coating:</b>	Polyester RAL 7035 (Light grey), where applicable
<b>Station assembly:</b>	Screwed onto cover
<b>Contacts assembly:</b>	Snap action on an appropriate flange to ensure the quick connection of entire contacts block to the station
<b>External body lens:</b>	Impact and UV resistant polycarbonate lens, coloured or transparent

### ELECTRICAL FEATURES

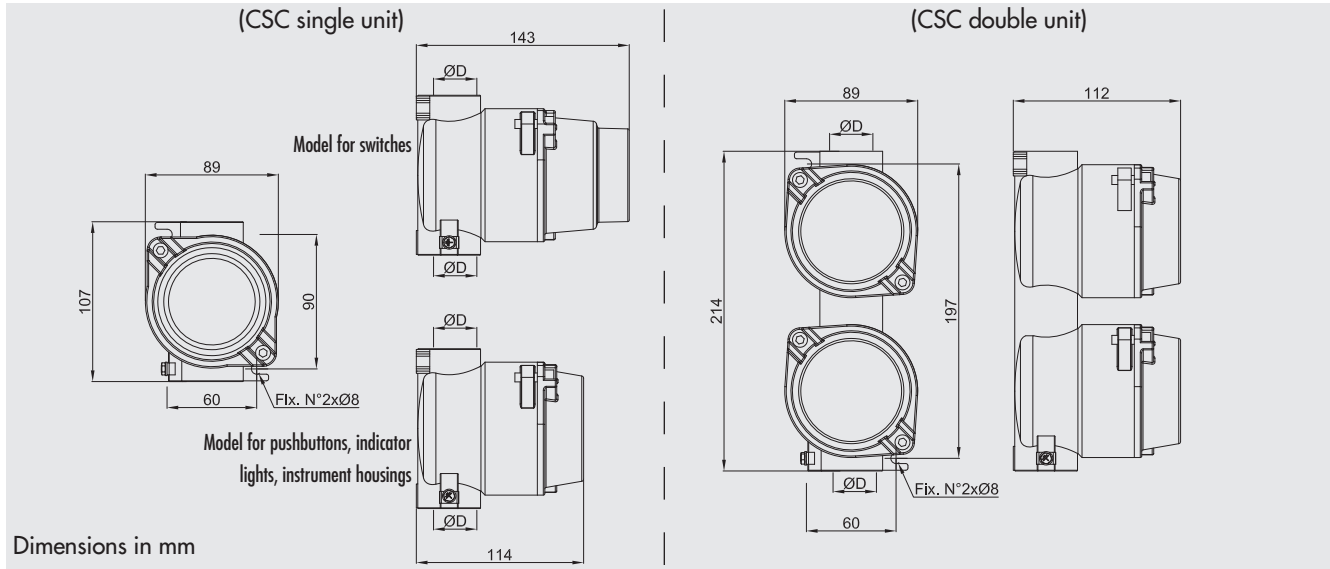
<b>Contacts for pushbuttons:</b>	Max. 10A 600 V
<b>Switches:</b>	16A, 690 V
<b>Indicator lights:</b>	24/250V, 3W
<b>Analogue instruments:</b>	600V

### ACCESSORIES UPON REQUEST / SPECIAL REQUESTS

RAL 2004 (Pure orange) internal anti-condensation coating  
External polyester coatings in various colours (specify RAL colour)  
Stainless steel or cast iron version available with minimum production batches. Contact your sales representative for more details.  
(sample code stainless steel CSC-DIN, cast iron sample code CSC-DGJ)  
Cablegland / fittings  
System protecting against accidental operation for mushroom-head push-buttons serie CSC-R (code M-990)

# CSC Series... Control and signalling station

## DIMENSIONAL DRAWING


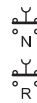


















## SELECTOR ARRANGEMENT

Description	Badge	Single pole arrangement	Contacts	Single pole arrangement	Contacts	Codes																				
Motors "start-stop" control, with spring return to 0 from both STOP and START.			<table border="1"> <thead> <tr> <th>POS.</th> <th>CONTACT</th> </tr> <tr> <td></td> <td>1-2 3-4</td> </tr> </thead> <tbody> <tr> <td>STOP</td> <td>0 0</td> </tr> <tr> <td>0</td> <td>X 0</td> </tr> <tr> <td>START</td> <td>X X</td> </tr> </tbody> </table>	POS.	CONTACT		1-2 3-4	STOP	0 0	0	X 0	START	X X		<table border="1"> <thead> <tr> <th>POS.</th> <th>CONTACT</th> </tr> <tr> <td></td> <td>1-2 3-4 5-6 7-8</td> </tr> </thead> <tbody> <tr> <td>STOP</td> <td>0 0 0 0</td> </tr> <tr> <td>0</td> <td>X 0 X 0</td> </tr> <tr> <td>START</td> <td>X X X X</td> </tr> </tbody> </table>	POS.	CONTACT		1-2 3-4 5-6 7-8	STOP	0 0 0 0	0	X 0 X 0	START	X X X X	X
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Motors "start-stop" control with spring return from START to 0, and in fixed STOP position can be padlocked.			<table border="1"> <thead> <tr> <th>POS.</th> <th>CONTACT</th> </tr> <tr> <td></td> <td>1-2 3-4</td> </tr> </thead> <tbody> <tr> <td>STOP</td> <td>0 0</td> </tr> <tr> <td>0</td> <td>X 0</td> </tr> <tr> <td>START</td> <td>X X</td> </tr> </tbody> </table>	POS.	CONTACT		1-2 3-4	STOP	0 0	0	X 0	START	X X		<table border="1"> <thead> <tr> <th>POS.</th> <th>CONTACT</th> </tr> <tr> <td></td> <td>1-2 3-4 5-6 7-8</td> </tr> </thead> <tbody> <tr> <td>STOP</td> <td>0 0 0 0</td> </tr> <tr> <td>0</td> <td>X 0 X 0</td> </tr> <tr> <td>START</td> <td>X X X X</td> </tr> </tbody> </table>	POS.	CONTACT		1-2 3-4 5-6 7-8	STOP	0 0 0 0	0	X 0 X 0	START	X X X X	R
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Switch with two fixed-positions, suitable for "automatic-manual" service			<table border="1"> <thead> <tr> <th>POS.</th> <th>CONTACT</th> </tr> <tr> <td></td> <td>1-2 3-4</td> </tr> </thead> <tbody> <tr> <td>0</td> <td>X 0</td> </tr> <tr> <td>1</td> <td>0 X</td> </tr> </tbody> </table>	POS.	CONTACT		1-2 3-4	0	X 0	1	0 X		<table border="1"> <thead> <tr> <th>POS.</th> <th>CONTACT</th> </tr> <tr> <td></td> <td>1-2 3-4 5-6 7-8</td> </tr> </thead> <tbody> <tr> <td>0</td> <td>X 0 X 0</td> </tr> <tr> <td>1</td> <td>0 X 0 X</td> </tr> </tbody> </table>	POS.	CONTACT		1-2 3-4 5-6 7-8	0	X 0 X 0	1	0 X 0 X	Z				
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Three fixed position switch can be padlocked in the centre position. Versions: single pole - double pole - triple pole			<table border="1"> <thead> <tr> <th>POS.</th> <th>CONTACT</th> </tr> <tr> <td></td> <td>1-2 3-4</td> </tr> </thead> <tbody> <tr> <td>1</td> <td>X 0</td> </tr> <tr> <td>0</td> <td>0 0</td> </tr> <tr> <td>2</td> <td>0 X</td> </tr> </tbody> </table>	POS.	CONTACT		1-2 3-4	1	X 0	0	0 0	2	0 X		<table border="1"> <thead> <tr> <th>POS.</th> <th>CONTACT</th> </tr> <tr> <td></td> <td>1-2 3-4 5-6 7-8</td> </tr> </thead> <tbody> <tr> <td>1</td> <td>X 0 X 0</td> </tr> <tr> <td>0</td> <td>0 0 0 0</td> </tr> <tr> <td>2</td> <td>0 X 0 X</td> </tr> </tbody> </table>	POS.	CONTACT		1-2 3-4 5-6 7-8	1	X 0 X 0	0	0 0 0 0	2	0 X 0 X	C
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5 position reversing start switch. Lever with fixed C position and spring return to 0 from A and B			<table border="1"> <thead> <tr> <th>POS.</th> <th>CONTACT</th> </tr> <tr> <td></td> <td>1-2 5-6 8-7 3-4</td> </tr> </thead> <tbody> <tr> <td>A</td> <td>X X 0 0</td> </tr> <tr> <td>0</td> <td>0 X 0 0</td> </tr> <tr> <td>C</td> <td>0 0 0 0</td> </tr> <tr> <td>0</td> <td>0 0 X 0</td> </tr> <tr> <td>B</td> <td>0 0 0 X</td> </tr> </tbody> </table>	POS.	CONTACT		1-2 5-6 8-7 3-4	A	X X 0 0	0	0 X 0 0	C	0 0 0 0	0	0 0 X 0	B	0 0 0 X			Y						
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"Start" motors control with lever spring return to position B			<table border="1"> <thead> <tr> <th>POS.</th> <th>CONTACT</th> </tr> <tr> <td></td> <td>1</td> </tr> </thead> <tbody> <tr> <td>A</td> <td>X 0</td> </tr> <tr> <td>B</td> <td>0 0</td> </tr> </tbody> </table>	POS.	CONTACT		1	A	X 0	B	0 0			M												
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# CSC Series... Control and signalling station

## CODE SELECTION TABLE

Illustration	Entry ØD	Description	Diagram	Weight Kg	Codes
	1" ISO 7/1	Single body: double pushbutton		0.85	CSC-D
	1" NPT				CSC-DN
	1" ISO 7/1	Single body: illuminated pushbutton		0.90	CSC-G
	1" NPT				CSC-GN
	1" ISO 7/1	Double body: double illuminated pushbutton		1.60	CSC-GG
	1" NPT				CSC-GGN
	1" ISO 7/1	Single body: single signal lamp		0.80	CSC-L
	1" NPT				CSC-LN
	1" ISO 7/1	Double body: double signal lamp		1.57	CSC-LL
	1" NPT				CSC-LLN
	1" ISO 7/1	Single body: single pushbutton (1NA+1NC)		0.74	CSC-P
	1" NPT				CSC-PN
	1" ISO 7/1	Single body: single pushbutton (2NO+2NC)		0.88	CSC-2P
	1" NPT				CSC-2PN
	1" ISO 7/1	Double body: pushbutton + indicator light		1.63	CSC-PL
	1" NPT				CSC-PLN
	1" ISO 7/1	Double body: two pushbuttons		1.69	CSC-PP
	1" NPT				CSC-PPN
	1" ISO 7/1	Single body: single maintained pushbutton (maintained) (1NA+1NC)		0.90	CSC-B
	1" NPT				CSC-BN
	1" ISO 7/1	Single body: single maintained pushbutton (maintained) (2NA+2NC)		0.92	CSC-2B
	1" NPT				CSC-2BN







# CSC Series... Control and signalling station

## CODE SELECTION TABLE

Illustration	Entry ØD	Description	Diagram	Weight Kg	Codes
	1" ISO 7/1	Single body: mushroom head pushbutton (1NO+ 1NC)		0.92	<b>CSC-F</b>
	1" NPT				<b>CSC-FN</b>
	1" ISO 7/1	Single body: mushroom head pushbutton (2NO+ 2NC)		0.94	<b>CSC-2F</b>
	1" NPT				<b>CSC-2FN</b>
	1" ISO 7/1	Single body: 'twist to release' mushroom head pushbutton (1NO+ 1NC)		0.92	<b>CSC-R</b>
	1" NPT				<b>CSC-RN</b>
	1" ISO 7/1	Single body: 'twist to release' mushroom head pushbutton (2NA+2NC)		0.94	<b>CSC-2R</b>
	1" NPT				<b>CSC-2RN</b>
<b>Selectors</b>					
	1" ISO 7/1	Single body: single pole selector		0.87	<b>CSC-1C</b>
	1" NPT				<b>CSC-1CN</b>
	1" ISO 7/1	Single body: double pole selector		0.89	<b>CSC-2C</b>
	1" NPT				<b>CSC-2CN</b>
	1" ISO 7/1	Single body: triple pole selector		0.91	<b>CSC-3C</b>
	1" NPT				<b>CSC-3CN</b>
	1" ISO 7/1	Single body: single pole switch		0.87	<b>CSC-1I</b>
	1" NPT				<b>CSC-1IN</b>
	1" ISO 7/1	Single body: double pole switch		0.89	<b>CSC-2I</b>
	1" NPT				<b>CSC-2IN</b>
	1" ISO 7/1	Single body: triple pole switch		0.91	<b>CSC-3I</b>
	1" NPT				<b>CSC-3IN</b>
	1" ISO 7/1	Single body: run/stop selector		0.89	<b>CSC-1R</b>
	1" NPT				<b>CSC-1RN</b>
	1" ISO 7/1	Single body: single pole selector		0.89	<b>CSC-1W</b>
	1" NPT				<b>CSC-1WN</b>
	1" ISO 7/1	Single body: double pole selector		0.91	<b>CSC-2W</b>
	1" NPT				<b>CSC-2WN</b>
	1" ISO 7/1	Single body: run/stop selector		0.89	<b>CSC-1X</b>
	1" NPT				<b>CSC-1XN</b>
	1" ISO 7/1	Single body: reversing start switch		0.89	<b>CSC-1Y</b>
	1" NPT				<b>CSC-1YN</b>
	1" ISO 7/1	Single body: single pole circuit breaker		0.89	<b>CSC-1Z</b>
	1" NPT				<b>CSC-1ZN</b>
	1" ISO 7/1	Single body: double pole circuit breaker		0.89	<b>CSC-2Z</b>
	1" NPT				<b>CSC-2ZN</b>
	1" ISO 7/1	Single body: triple pole circuit breaker		0.89	<b>CSC-3Z</b>
	1" NPT				<b>CSC-3ZN</b>









# CSC Series... Control and signalling station

## CODE SELECTION TABLE

Illustration	Combinations		Weight Kg	Codes
	Entry ØD	Description		
	1" ISO 7/1	Double body: single pole changeover switch + indicator light	1.65	<b>CSC-1CL</b>
	1" NPT			<b>CSC-1CLN</b>
	1" ISO 7/1	Double body: double pole changeover switch + indicator light	1.67	<b>CSC-2CL</b>
	1" NPT			<b>CSC-2CLN</b>
	1" ISO 7/1	Double body: triple pole changeover switch + indicator light	1.69	<b>CSC-3CL</b>
	1" NPT			<b>CSC-3CLN</b>
	1" ISO 7/1	Double body: pushbutton + single pole selector	1.70	<b>CSC-P1C</b>
	1" NPT			<b>CSC-P1CN</b>
	1" ISO 7/1	Double body: pushbutton + double pole selector	1.72	<b>CSC-P2C</b>
	1" NPT			<b>CSC-P2CN</b>
	1" ISO 7/1	Double body: pushbutton + triple pole selector	1.74	<b>CSC-P3C</b>
	1" NPT			<b>CSC-P3CN</b>
	1" ISO 7/1	Double body: single pole circuit breaker + indicator light	1.65	<b>CSC-1ZL</b>
	1" NPT			<b>CSC-1ZLN</b>
	1" ISO 7/1	Double body: double pole circuit breaker + indicator light	1.67	<b>CSC-2ZL</b>
	1" NPT			<b>CSC-2ZLN</b>
	1" ISO 7/1	Double body: triple pole circuit breaker + indicator light	1.65	<b>CSC-3ZL</b>
	1" NPT			<b>CSC-3ZLN</b>
	1" ISO 7/1	Double body: pushbutton + single pole circuit breaker	1.70	<b>CSC-P1Z</b>
	1" NPT			<b>CSC-P1ZN</b>
	1" ISO 7/1	Double body: pushbutton + double pole circuit breaker	1.72	<b>CSC-P2Z</b>
	1" NPT			<b>CSC-P2ZN</b>
	1" ISO 7/1	Double body: pushbutton + triple pole circuit breaker	1.74	<b>CSC-P3Z</b>
	1" NPT			<b>CSC-P3ZN</b>
	1" ISO 7/1	Double body: run/stop selector + single pole switch	1.74	<b>CSC-1R1C</b>
	1" NPT			<b>CSC-1R1CN</b>
	1" ISO 7/1	Double body: run/stop selector + single pole switch	1.76	<b>CSC-1R2C</b>
	1" NPT			<b>CSC-1R2CN</b>
	1" ISO 7/1	Double body: run/stop selector + single pole switch	1.78	<b>CSC-1R3C</b>
	1" NPT			<b>CSC-1R3CN</b>
	1" ISO 7/1	Double body: run/stop selector + single pole circuit breaker	1.73	<b>CSC-1R1Z</b>
	1" NPT			<b>CSC-1R1ZN</b>
	1" ISO 7/1	Double body: run/stop selector + double pole circuit breaker	1.76	<b>CSC-1R2Z</b>
	1" NPT			<b>CSC-1R2ZN</b>
	1" ISO 7/1	Double body: run/stop selector + triple pole circuit breaker	1.78	<b>CSC-1R3Z</b>
	1" NPT			<b>CSC-1R3ZN</b>

# CSC Series... Control and signalling station

## CODE SELECTION TABLE

Illustration	Entry ØD	Description	Weight Kg	Codes
	1" ISO 7/1	Double body: run/stop selector + single pole switch	1.73	<b>CSC-1X1C</b>
	1" NPT			<b>CSC-1X1CN</b>
	1" ISO 7/1	Double body: run/stop selector + double pole changeover switch	1.75	<b>CSC-1X2C</b>
	1" NPT			<b>CSC-1X2CN</b>
	1" ISO 7/1	Double body: run/stop selector + triple pole changeover switch	1.73	<b>CSC-1X3C</b>
1" NPT	<b>CSC-1X3CN</b>			
	1" ISO 7/1	Double body: run/stop selector + single pole circuit breaker	1.73	<b>CSC-1X1Z</b>
	1" NPT			<b>CSC-1X1ZN</b>
	1" ISO 7/1	Double body: run/stop selector + double pole circuit breaker	1.75	<b>CSC-1X2Z</b>
	1" NPT			<b>CSC-1X2ZN</b>
	1" ISO 7/1	Double body: run/stop selector + triple pole circuit breaker	1.77	<b>CSC-1X3Z</b>
1" NPT	<b>CSC-1X3ZN</b>			
	1" ISO 7/1	Double body: run/stop selector + indicator light	1.67	<b>CSC-1RL</b>
	1" NPT			<b>CSC-1RLN</b>
	1" ISO 7/1	Double body: run/stop selector + indicator light	1.66	<b>CSC-1XL</b>
	1" NPT			<b>CSC-1XLN</b>
	1" ISO 7/1	Single body: instrument casing	0.75	<b>CSC-H</b>
	1" NPT			<b>CSC-HN</b>
	1" ISO 7/1	Double body: instrument casing	1.50	<b>CSC-HH</b>
	1" NPT			<b>CSC-HHN</b>
	1" ISO 7/1	Double body: run/stop selector + instrument casing	1.67	<b>CSC-1RH</b>
	1" NPT			<b>CSC-1RHN</b>
	1" ISO 7/1			<b>CSC-1XH</b>
	1" NPT			<b>CSC-1XHN</b>
	1" ISO 7/1	Single body: Key operated handle with quick coupling for cam switch. Stainless steel bushing.	0.95	<b>CSC-1ZK</b>
	1" NPT			<b>CSC-1ZKN</b>
	1" ISO 7/1			<b>CSC-2ZK</b>
	1" NPT			<b>CSC-2ZKN</b>
	1" ISO 7/1	Single body: break glass emergency pushbutton with hammer	1.10	<b>CSCPEA2</b>
	1" NPT			<b>CSCPEA2N</b>

Note:  
For non-standard arrangements, contact the Sales Office.



## EFDC Series... Control and signalling station



### CROSS-SECTION VIEW



### DESCRIPTION

EFDC series control and monitoring units are suitable for the control and signalling of devices, both on board the machine or remotely, and are used in the chemical, petrochemical and pharmaceutical industries, and any location which requires an explosion proof system. A feature of this station is the ability to mount up to four operators on the cover.

### MECHANICAL FEATURES OF ENCLOSURES

<b>Body and lid:</b>	Low copper content aluminium alloy, complete with wall fastening lugs.
<b>Gaskets:</b>	Acid, hydrocarbon and high temperature resistant silicon positioned between the body and the cover
<b>Certification label:</b>	Adhesive affixed to external surface
<b>Screws:</b>	Stainless steel
<b>Earth screw:</b>	Internal M5 on body and lid connected by a 2.5 mm <sup>2</sup> wire
<b>Coating:</b>	Polyester RAL 7035 (Light grey)
<b>Threaded entries:</b>	One upper and one lower Ø 1"

#### Resistenza alla corrosione:

The STANDARD of the aluminium alloy used by Cortem has passed the tests required by standards EN60068-2-30 (hot-humid cycles) and EN60068-2-11 (salt fog test)

### MECHANICAL FEATURES OF CONTROL AND SIGNALLING DEVICES

<b>Pushbutton:</b>	Coloured nylon
<b>Illuminated pushbutton:</b>	Clear coloured polycarbonate
<b>Control lever:</b>	Aluminium alloy
<b>Badge:</b>	Anodised aluminium, white lettering on black background
<b>Outer body:</b>	Aluminium alloy
<b>Internal bushing and pin:</b>	Stainless steel
<b>Gaskets:</b>	Acid and hydrocarbon resistant NBR
<b>Station assembly:</b>	Screwed onto cover
<b>Contacts assembly:</b>	Snap action on an appropriate flange to ensure the quick connection of entire contacts block to the station
<b>External body lens:</b>	Impact and UV resistant polycarbonate lens, coloured or transparent

### ELECTRICAL FEATURES

<b>Contacts for pushbuttons:</b>	Max. 10A 600 V
<b>Switches:</b>	16A, 690 V
<b>Indicator lights:</b>	24/250V, 3W

### ACCESSORIES UPON REQUEST / SPECIAL REQUESTS

RAL 2004 (Pure orange) internal anti-condensation coating

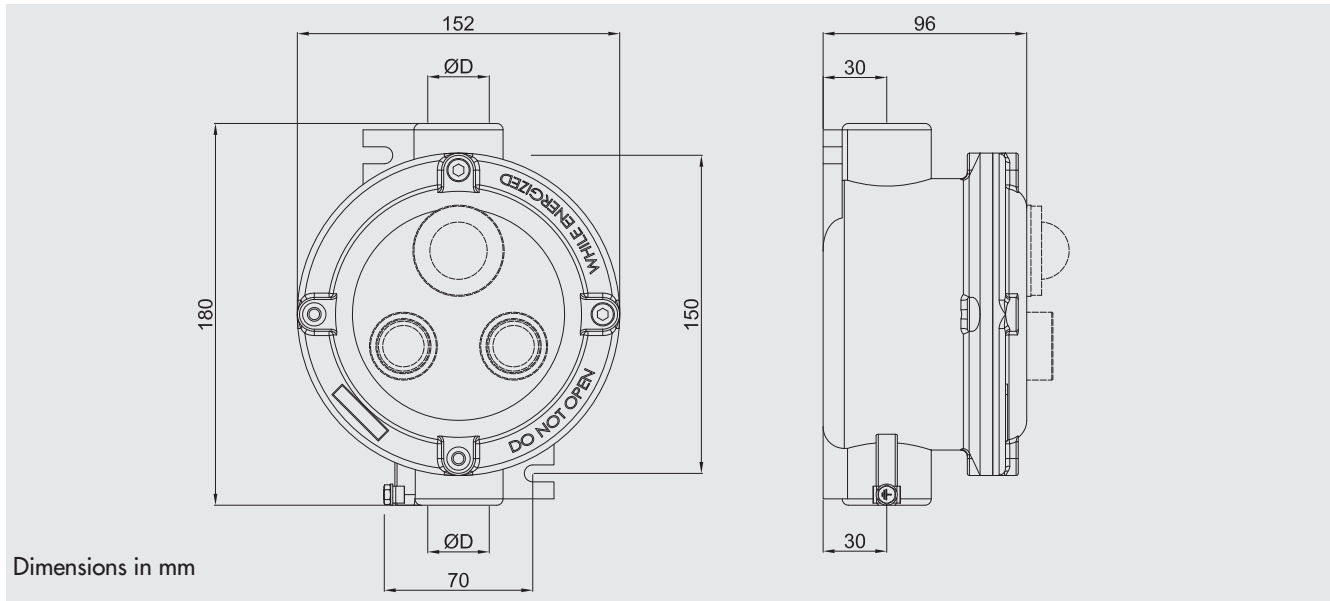
External polyester coatings in various colours (specify RAL colour)

Cableland / fittings

System protecting against accidental operation for mushroom-head push-buttons serie EFDC-21EMR and EFDC-21EMC (code **M-990**)

# EFDC Series... Control and signalling station

## DIMENSIONAL DRAWING

















## CODE SELECTION TABLE

Illustration	Entry ØD	Description	Diagram	Weight Kg	Codes
	1" ISO 7/1	Single body: button		1.4	<b>EFDC-21</b>
	1" NPT				<b>EFDC-21N</b>
	1" ISO 7/1	Single body: indicator light		1.4	<b>EFDC-25</b>
	1" NPT				<b>EFDC-25N</b>
	1" ISO 7/1	Single body: two buttons		1.5	<b>EFDC-22</b>
	1" NPT				<b>EFDC-22N</b>
	1" ISO 7/1	Single body: two indicator lights		1.5	<b>EFDC-24</b>
	1" NPT				<b>EFDC-24N</b>
	1" ISO 7/1	Single body: pushbutton with indicator light		1.5	<b>EFDC-23</b>
	1" NPT				<b>EFDC-23N</b>
	1" ISO 7/1	Single body: three buttons		1.6	<b>EFDC-27</b>
	1" NPT				<b>EFDC-27N</b>
	1" ISO 7/1	Single body: three indicator lights		1.6	<b>EFDC-20</b>
	1" NPT				<b>EFDC-20N</b>
	1" ISO 7/1	Single body: two pushbuttons and an indicator light		1.6	<b>EFDC-28</b>
	1" NPT				<b>EFDC-28N</b>
	1" ISO 7/1	Single body: pushbutton with two indicator lights		1.6	<b>EFDC-29</b>
	1" NPT				<b>EFDC-29N</b>










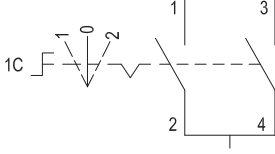

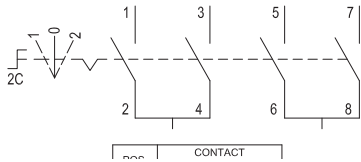
# EFDC Series... Control and signalling station

## CODE SELECTION TABLE

Illustration	Entry ØD	Description	Diagram	Weight Kg	Codes	
	1" ISO 7/1	Single body: four pushbuttons		1.8	EFDC-30	
	1" NPT				EFDC-30N	
	1" ISO 7/1	Single body: four indicator lights		1.8	EFDC-31	
	1" NPT				EFDC-31N	
	1" ISO 7/1	Single body: three pushbuttons with an indicator light		1.8	EFDC-32	
	1" NPT				EFDC-32N	
	1" ISO 7/1	Single body: two pushbuttons with two indicator lights		1.8	EFDC-33	
	1" NPT				EFDC-33N	
	1" ISO 7/1	Single body: pushbutton with three indicator lights		1.8	EFDC-34	
	1" NPT				EFDC-34N	
		1" ISO 7/1	Single body: emergency pushbutton station with protective glass and hammer		1.4	EFDC-21EMV
		1" NPT				EFDC-21EMVN
	1" ISO 7/1	Single body: emergency pushbutton station		1.4	EFDC-21EM	
	1" NPT				EFDC-21EMN	
	1" ISO 7/1	Emergency pushbutton station with 'twist to release' mushroom head pushbutton		1.4	EFDC-21EMR	
	1" NPT				EFDC-21EMRN	
	1" ISO 7/1	Emergency pushbutton station with key release mushroom head pushbutton (when the button is pressed, turn the key to release)		1.4	EFDC-21EMC	
	1" NPT				EFDC-21EMCN	

# EFDC Series... Control and signalling station

## CODE SELECTION TABLE

Illustration	Entry ØD	Description	Diagram	Weight Kg	Codes
	1" ISO 7/1	Emergency pushbutton station with 'twist to release' mushroom head pushbutton and pushbutton		1.5	<b>EFDC-21EMRV1</b>
	1" NPT				<b>EFDC-21EMRV1N</b>
	1" ISO 7/1	Emergency pushbutton station with 'twist to release' mushroom head pushbutton, pushbutton and indicator light		1.5	<b>EFDC-21EMRV2</b>
	1" NPT				<b>EFDC-21EMRV2N</b>
	1" ISO 7/1	Single body: emergency pushbutton station with mushroom head pushbutton and key reset		1.4	<b>EFDC-21EMCV1</b>
	1" NPT				<b>EFDC-21EMCV1N</b>
	1" ISO 7/1	Single body: emergency pushbutton station with mushroom head pushbutton and key reset, pushbutton and indicator light		1.4	<b>EFDC-21EMCV2</b>
	1" NPT				<b>EFDC-21EMCV2N</b>
	1" ISO 7/1	Single body: Single pole selector		2.0	<b>EFDC-1C</b>
	1" NPT				<b>EFDC-1CN</b>
	1" ISO 7/1	Single body: Double pole selector		2.1	<b>EFDC-2C</b>
	1" NPT				<b>EFDC-2CN</b>

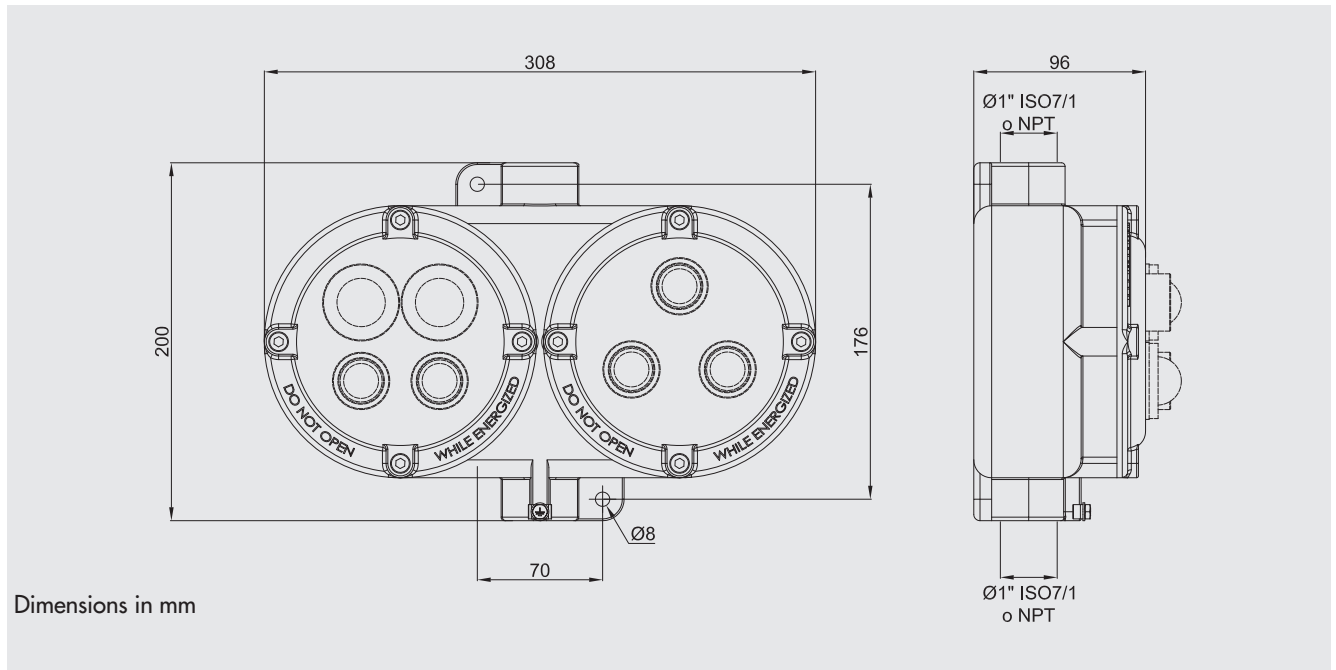
Note:  
For non-standard arrangements, contact the Sales Office.

# EFDC Series... Control and signalling station (Double body)

## DESCRIPTION

EFDC series control and signalling stations -.../... are double bodied enclosures and can contain up to eight devices. They are used for the remote control of devices such as distribution panels for lights, pumps, starter motors, etc.

## DIMENSIONAL DRAWING



## CODE SELECTION TABLE

Use the code in the selection table of EFDC single body stations to compose the code for double body stations.

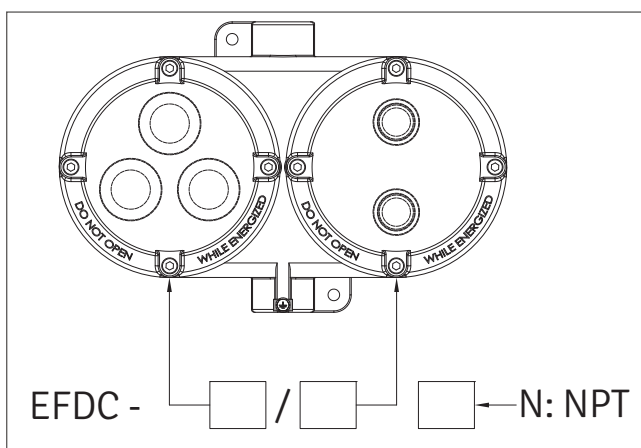
Example:

### EFDC-20/22

Double body station with three indicator lights in the left-hand enclosure and two pushbuttons in the one to the right. Two 1" ISO7/1 fittings.

### EFDC-23/21N

Double body station with pushbutton and indicator light in the left-hand enclosure and a pushbutton in the one to the right. Two 1" NPT fittings.



EFDC33/2C connected to an instrument casing CSC-H with ammeter.



## CSC Series... Switches, selectors and circuit breaker



### EXPLODED VIEW



### DESCRIPTION

The switches, circuit breakers and selectors which make up the CSC series are 16 A rotary type with a front control handle. Supplied with 1" Male to 3/4" Female reducer

### MECHANICAL FEATURES

<b>Body and lid:</b>	Low copper content aluminium alloy, complete with wall fastening lugs.
<b>Gaskets:</b>	Acid, hydrocarbon and high temperature resistant silicon positioned between the body and the cover
<b>Control lever:</b>	Coated aluminium alloy
<b>Certification label:</b>	Adhesive affixed to external surface
<b>Badge:</b>	Anodised aluminium, white lettering on black background
<b>Internal bushing and pin:</b>	Stainless steel
<b>Control lever:</b>	Aluminium alloy
<b>Screws:</b>	Stainless steel
<b>Earth screw:</b>	Internal M5 on body and lid connected by a 2.5 mm <sup>2</sup> wire
<b>Coating:</b>	Polyester RAL 7035 (Light grey)
<b>Threaded entries:</b>	One upper and one lower Ø 1" complete with Male 1" - Female 3/4" adapter

#### Resistenza alla corrosione:

The STANDARD of the aluminium alloy used by Cortem has passed the tests required by standards EN60068-2-30 (hot-humid cycles) and EN60068-2-11 (salt fog test)

### ELECTRICAL FEATURES

**Switches:** 16A, 690 V

### ACCESSORIES UPON REQUEST / SPECIAL REQUESTS

RAL 2004 (Pure orange) internal anti-condensation coating

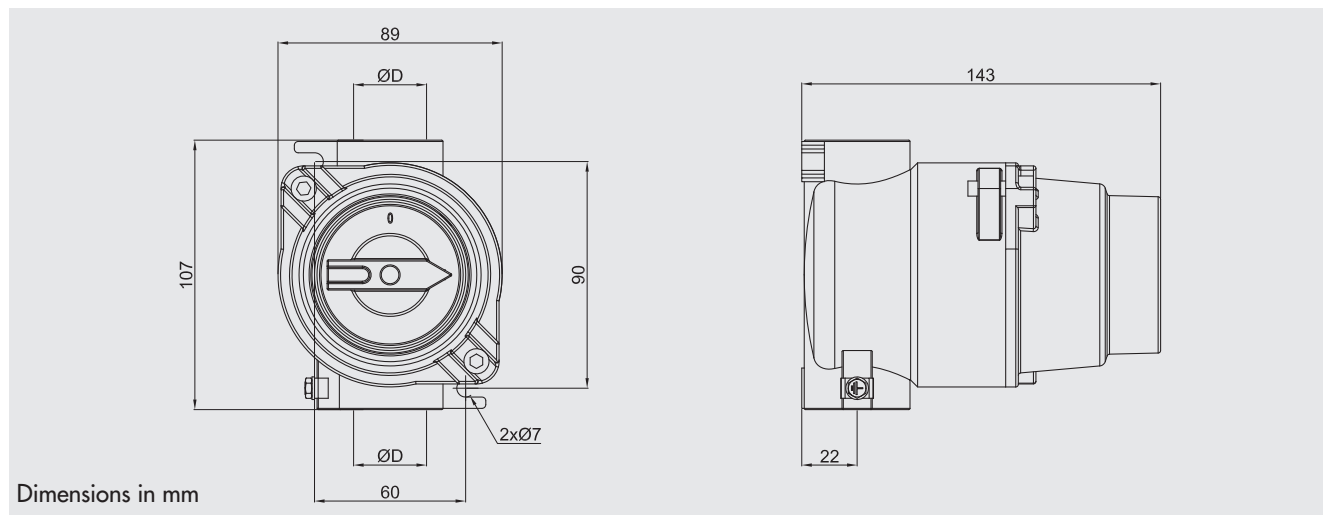
External polyester coatings in various colours (specify RAL colour)

Stainless steel or cast iron version available with minimum production batches. Contact your sales representative for more details. (sample code stainless steel CSC-216IN, cast iron sample code CSC-216GJ)

Cablegland / fittings

# CSC Series... Switches, selectors and circuit breaker

## DIMENSIONAL DRAWING



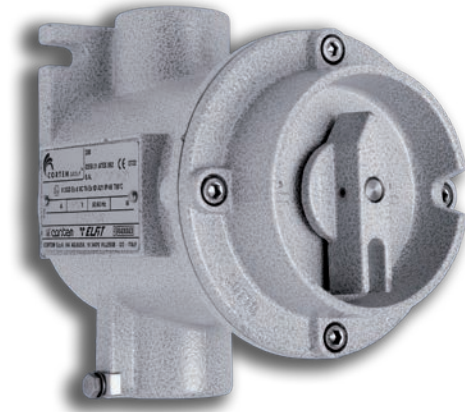
## SELECTION TABLE

Illustration	Entry ØD (*)	Description	Badge	Arrangement	Capacity	Poles	Weight Kg	Code																														
	1" ISO 7/1	Switch with 2 fixed positions '0-1'		<table border="1"> <thead> <tr> <th>POS.</th> <th colspan="2">CONTACT</th> </tr> <tr> <th></th> <th>1-2</th> <th>3-4</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>O</td> <td>O</td> </tr> <tr> <td>1</td> <td>X</td> <td>X</td> </tr> </tbody> </table>	POS.	CONTACT			1-2	3-4	0	O	O	1	X	X	16 A	2	0.95	<b>CSC-216</b>																		
	POS.				CONTACT																																	
	1-2	3-4																																				
0	O	O																																				
1	X	X																																				
1" NPT	<b>CSC-216N</b>																																					
	1" ISO 7/1	Switch with 2 fixed positions '0-1'		<table border="1"> <thead> <tr> <th>POS.</th> <th colspan="3">CONTACT</th> </tr> <tr> <th></th> <th>1-2</th> <th>3-4</th> <th>5-6</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>O</td> <td>O</td> <td>O</td> </tr> <tr> <td>1</td> <td>X</td> <td>X</td> <td>X</td> </tr> </tbody> </table>	POS.	CONTACT				1-2	3-4	5-6	0	O	O	O	1	X	X	X	16 A	3	0.86	<b>CSC-316</b>														
	POS.				CONTACT																																	
	1-2	3-4	5-6																																			
0	O	O	O																																			
1	X	X	X																																			
1" NPT	<b>CSC-316N</b>																																					
	1" ISO 7/1	Switch with 2 fixed positions '0-1'		<table border="1"> <thead> <tr> <th>POS.</th> <th colspan="4">CONTACT</th> </tr> <tr> <th></th> <th>1-2</th> <th>3-4</th> <th>5-6</th> <th>7-8</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>O</td> <td>O</td> <td>O</td> <td>O</td> </tr> <tr> <td>1</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> </tbody> </table>	POS.	CONTACT					1-2	3-4	5-6	7-8	0	O	O	O	O	1	X	X	X	X	16 A	4	0.85	<b>CSC-416</b>										
	POS.				CONTACT																																	
	1-2	3-4	5-6	7-8																																		
0	O	O	O	O																																		
1	X	X	X	X																																		
1" NPT	<b>CSC-416N</b>																																					
	1" ISO 7/1	Switch with 3 fixed positions '1-0-2'		<table border="1"> <thead> <tr> <th>POS.</th> <th colspan="5">CONTACT</th> </tr> <tr> <th></th> <th>1-2</th> <th>3-4</th> <th>5-6</th> <th>7-8</th> <th></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>X</td> <td>O</td> <td>X</td> <td>O</td> <td></td> </tr> <tr> <td>0</td> <td>O</td> <td>O</td> <td>O</td> <td>O</td> <td></td> </tr> <tr> <td>2</td> <td>O</td> <td>X</td> <td>O</td> <td>X</td> <td></td> </tr> </tbody> </table>	POS.	CONTACT						1-2	3-4	5-6	7-8		1	X	O	X	O		0	O	O	O	O		2	O	X	O	X		16 A	2	0.89	<b>CSCC-216</b>
	POS.				CONTACT																																	
	1-2	3-4	5-6	7-8																																		
1	X	O	X	O																																		
0	O	O	O	O																																		
2	O	X	O	X																																		
1" NPT	<b>CSCC-216N</b>																																					
	1" ISO 7/1	Switch with 3 fixed positions '1-2'		<table border="1"> <thead> <tr> <th>POS.</th> <th colspan="2">CONTACT</th> </tr> <tr> <th></th> <th>1-2</th> <th>3-4</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>X</td> <td>O</td> </tr> <tr> <td>2</td> <td>O</td> <td>X</td> </tr> </tbody> </table>	POS.	CONTACT			1-2	3-4	1	X	O	2	O	X	16 A	2	0.89	<b>CSCD-216</b>																		
	POS.				CONTACT																																	
	1-2	3-4																																				
1	X	O																																				
2	O	X																																				
1" NPT	<b>CSCD-216N</b>																																					
	1" ISO 7/1	Inverter with 3 fixed positions '1-0-2'		<table border="1"> <thead> <tr> <th>POSITION</th> <th colspan="4">CONTACT</th> </tr> <tr> <th></th> <th>1-2</th> <th>3-4</th> <th>5-6</th> <th>7-8</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>O</td> <td>X</td> <td>X</td> <td>O</td> </tr> <tr> <td>0</td> <td>O</td> <td>O</td> <td>O</td> <td>O</td> </tr> <tr> <td>2</td> <td>X</td> <td>O</td> <td>O</td> <td>X</td> </tr> </tbody> </table>	POSITION	CONTACT					1-2	3-4	5-6	7-8	1	O	X	X	O	0	O	O	O	O	2	X	O	O	X	16 A	2	0.89	<b>CSCI-216</b>					
	POSITION				CONTACT																																	
	1-2	3-4	5-6	7-8																																		
1	O	X	X	O																																		
0	O	O	O	O																																		
2	X	O	O	X																																		
1" NPT	<b>CSCI-216N</b>																																					

\* Supplied with 1" Male to 3/4" Female reducer



## EFSCO Series... Switches, selectors and circuit breaker



### EXPLODED VIEW



The switches, circuit breakers and selectors which make up the EFSCO series are 25, 32, 40 and 63 A rotary type with a front control handle.

### MECHANICAL FEATURES

<b>Body and lid:</b>	Low copper content aluminium alloy, complete with wall fastening lugs.
<b>Gaskets:</b>	Acid, hydrocarbon and high temperature resistant silicon positioned between the body and the cover
<b>Control lever:</b>	Coated aluminium alloy
<b>Certification label:</b>	Adhesive affixed to external surface
<b>Badge:</b>	Anodised aluminium, white lettering on black background
<b>Internal bushing and pin:</b>	Stainless steel
<b>Screws:</b>	Stainless steel
<b>Earth screw:</b>	Internal M5 on body and lid connected by a 2.5 mm <sup>2</sup> wire
<b>Coating:</b>	Polyester RAL 7035 (Light grey)
<b>Resistenza alla corrosione:</b>	The STANDARD of the aluminium alloy used by Cortem has passed the tests required by standards EN60068-2-30 (hot-humid cycles) and EN60068-2-11 (salt fog test)

### ELECTRICAL FEATURES

**Switches:** 25 A to 63 A, 690 V

### ACCESSORIES UPON REQUEST / SPECIAL REQUESTS

RAL 2004 (Pure orange) internal anti-condensation coating

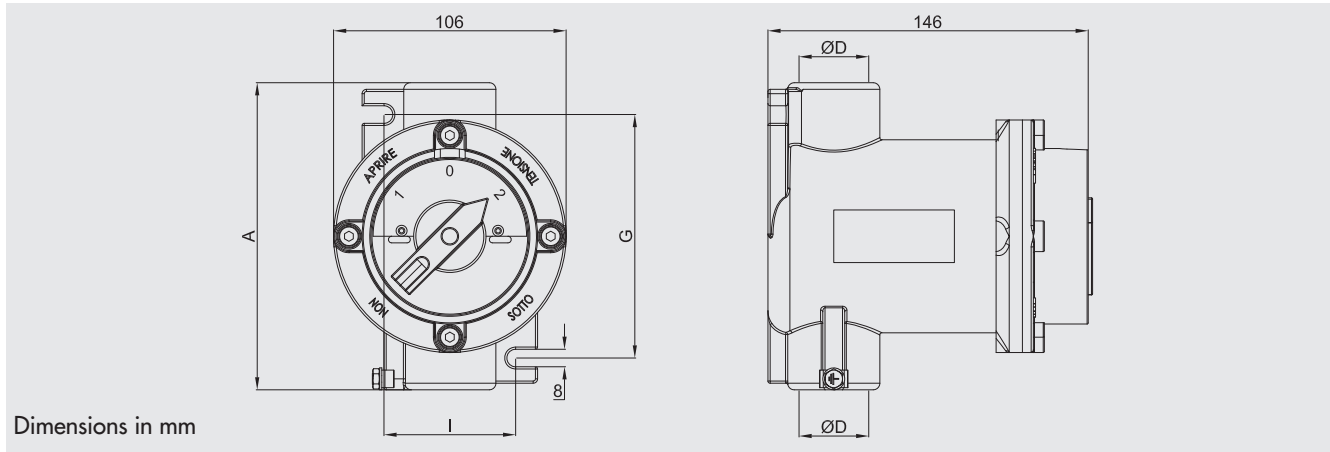
External polyester coatings in various colours (specify RAL colour)

Stainless steel version available with minimum production batches. Contact your sales representative for more details. (sample code stainless steel EFSCO-266IN)

Cableland / fittings

# EFSCO Series... Switches, selectors and circuit breaker

## DIMENSIONAL DRAWING

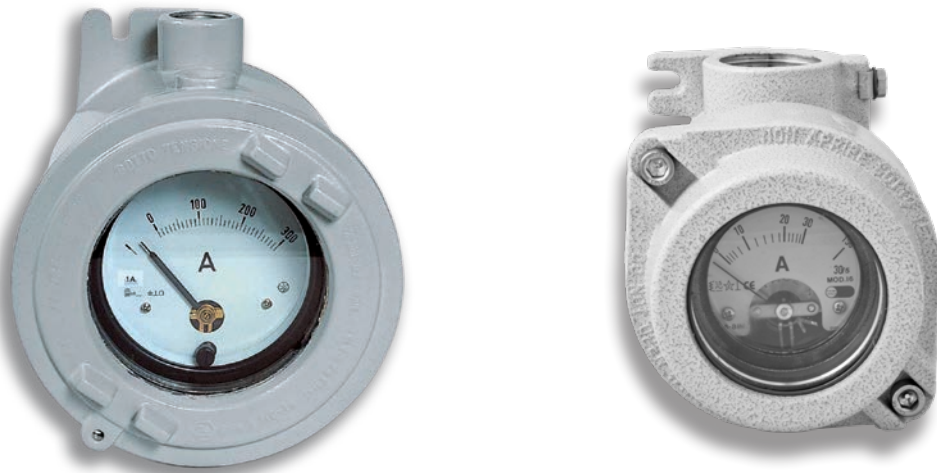


Dimensions in mm

## CODE SELECTION TABLE

Illustration	Entry D ISO7/1	A	G	I	Description	Arrangement	Capacity	Poles	Weight Kg	Code																				
	1"	140	110	60	Switch with 2 fixed positions '0-1'	<table border="1"> <tr><th>POS.</th><th colspan="3">CONTACT</th></tr> <tr><td>0</td><td>O</td><td>O</td><td>O</td></tr> <tr><td>1</td><td>X</td><td>X</td><td>X</td></tr> </table>	POS.	CONTACT			0	O	O	O	1	X	X	X	25 A	2	1.14	<b>EFSCO-22</b>								
	POS.	CONTACT																												
	0	O	O	O																										
	1	X	X	X																										
	1"	140	110	60			32 A	2	1.20	<b>EFSCO-32</b>																				
	1"	140	110	60			40 A	2	1.35	<b>EFSCO-42</b>																				
	1 1/2"	160	120	80	63 A	2	1.35	<b>EFSCO-62</b>																						
	1"	140	110	60	Switch with 2 fixed positions '0-1'	<table border="1"> <tr><th>POS.</th><th colspan="3">CONTACT</th></tr> <tr><td>0</td><td>O</td><td>O</td><td>O</td></tr> <tr><td>1</td><td>X</td><td>X</td><td>X</td></tr> </table>	POS.	CONTACT			0	O	O	O	1	X	X	X	25 A	3	1.14	<b>EFSCO-23</b>								
	POS.	CONTACT																												
	0	O	O	O																										
	1	X	X	X																										
	1"	140	110	60			32 A	3	1.20	<b>EFSCO-33</b>																				
1"	140	110	60	40 A			3	1.35	<b>EFSCO-43</b>																					
1 1/2"	160	120	80	63 A	3	1.40	<b>EFSCO-63</b>																							
1"	140	110	60	Switch with 2 fixed positions '0-1'	<table border="1"> <tr><th>POS.</th><th colspan="4">CONTACT</th></tr> <tr><td>0</td><td>O</td><td>O</td><td>O</td><td>O</td></tr> <tr><td>1</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> </table>	POS.	CONTACT				0	O	O	O	O	1	X	X	X	X	25 A	4	1.18	<b>EFSCO-24</b>						
POS.	CONTACT																													
0	O	O	O			O																								
1	X	X	X			X																								
1"	140	110	60			32 A	4	1.20	<b>EFSCO-34</b>																					
1"	140	110	60			40 A	4	1.35	<b>EFSCO-44</b>																					
1 1/2"	160	120	80	63 A	4	1.40	<b>EFSCO-64</b>																							
	1"	140	110	60	Circuit breaker with 2 fixed positions '1-2'	<table border="1"> <tr><th>POS.</th><th colspan="3">CONTACT</th></tr> <tr><td>1</td><td>X</td><td>O</td><td></td></tr> <tr><td>2</td><td>O</td><td>X</td><td></td></tr> </table>	POS.	CONTACT			1	X	O		2	O	X		25 A	1	1.20	<b>EFSCO-26</b>								
	POS.	CONTACT																												
	1	X	O																											
	2	O	X																											
	1"	140	110	60			32 A	1	1.18	<b>EFSCO-36</b>																				
	1"	140	110	60			40 A	1	1.20	<b>EFSCO-46</b>																				
	1"	140	110	60	63 A	1	1.40	<b>EFSCO-66</b>																						
	1"	140	110	60	Circuit breaker with 2 fixed positions '1-2'	<table border="1"> <tr><th>POS.</th><th colspan="4">CONTACT</th></tr> <tr><td>0</td><td>X</td><td>O</td><td>X</td><td>O</td></tr> <tr><td>1</td><td>O</td><td>X</td><td>O</td><td>X</td></tr> </table>	POS.	CONTACT				0	X	O	X	O	1	O	X	O	X	25 A	2	1.18	<b>EFSCO-266</b>					
	POS.	CONTACT																												
	0	X	O	X			O																							
	1	O	X	O			X																							
	1"	140	110	60			32 A	2	1.18	<b>EFSCO-366</b>																				
1 1/2"	160	120	80	40 A			2	1.20	<b>EFSCO-466</b>																					
	1"	140	110	60	Switch with 3 fixed positions '1-0-2'	<table border="1"> <tr><th>POS.</th><th colspan="3">CONTACT</th></tr> <tr><td>1</td><td>X</td><td>O</td><td></td></tr> <tr><td>0</td><td>O</td><td>O</td><td>O</td></tr> <tr><td>2</td><td>O</td><td>X</td><td></td></tr> </table>	POS.	CONTACT			1	X	O		0	O	O	O	2	O	X		25 A	1	1.14	<b>EFSCO-242</b>				
	POS.	CONTACT																												
	1	X	O																											
	0	O	O	O																										
	2	O	X																											
	1"	140	110	60			32 A	1	1.18	<b>EFSCO-342</b>																				
	1"	140	110	60	40 A	1	1.18	<b>EFSCO-442</b>																						
	1"	140	110	60	63 A	1	1.40	<b>EFSCO-642</b>																						
	1"	140	110	60	Switch with 3 fixed positions '1-0-2'	<table border="1"> <tr><th>POS.</th><th colspan="4">CONTACT</th></tr> <tr><td>1</td><td>X</td><td>O</td><td>X</td><td>O</td></tr> <tr><td>0</td><td>O</td><td>O</td><td>O</td><td>O</td></tr> <tr><td>2</td><td>O</td><td>X</td><td>O</td><td>X</td></tr> </table>	POS.	CONTACT				1	X	O	X	O	0	O	O	O	O	2	O	X	O	X	25 A	2	1.14	<b>EFSCO-244</b>
	POS.	CONTACT																												
	1	X	O	X			O																							
	0	O	O	O			O																							
2	O	X	O	X																										
1"	140	110	60	32 A			2	1.18	<b>EFSCO-344</b>																					
1 1/2"	160	120	80	40 A	2	1.18	<b>EFSCO-444</b>																							

## EMHA-9 and CSC-H Series... Instrument housings



### CROSS-SECTION VIEW



### DESCRIPTION

EMHA-9 instrument housings are normally used to contain medium-sized analogue instruments such as ammeters and voltmeters. CSC-H instrument housings are normally used to contain small-sized analogue instruments such as ammeters and voltmeters.

### MECHANICAL FEATURES

<b>Body and lid:</b>	Low copper content aluminium alloy, complete with wall fastening lugs.
<b>Gaskets:</b>	Acid, hydrocarbon and high temperature resistant silicon positioned between the body and the cover tempered and temperature resistant
<b>Glass</b>	Aluminium
<b>Internal frame:</b>	Aluminium
<b>Certification label:</b>	Adhesive affixed to external surface
<b>Screws:</b>	Stainless steel
<b>Earth screw:</b>	Internal M5 on body and lid connected by a 2.5 mm <sup>2</sup> wire
<b>Coating:</b>	Polyester RAL 7035 (Light grey)
<b>Threaded entries:</b>	One upper and one lower Ø 3/4"

#### Resistenza alla corrosione:

The STANDARD of the aluminium alloy used by Cortem has passed the tests required by standards EN60068-2-30 (hot-humid cycles) and EN60068-2-11 (salt fog test)

### ACCESSORIES UPON REQUEST / SPECIAL REQUESTS

Measuring instruments (Voltmeter - Ammeter)

RAL 2004 (Pure orange) internal anti-condensation coating

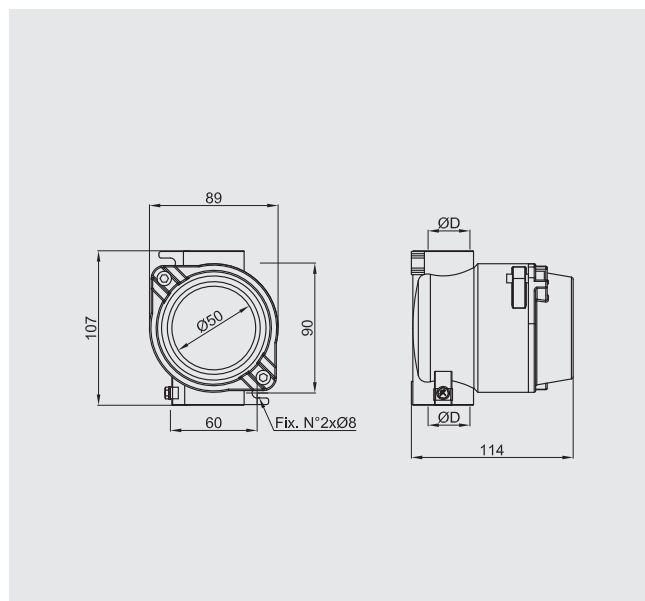
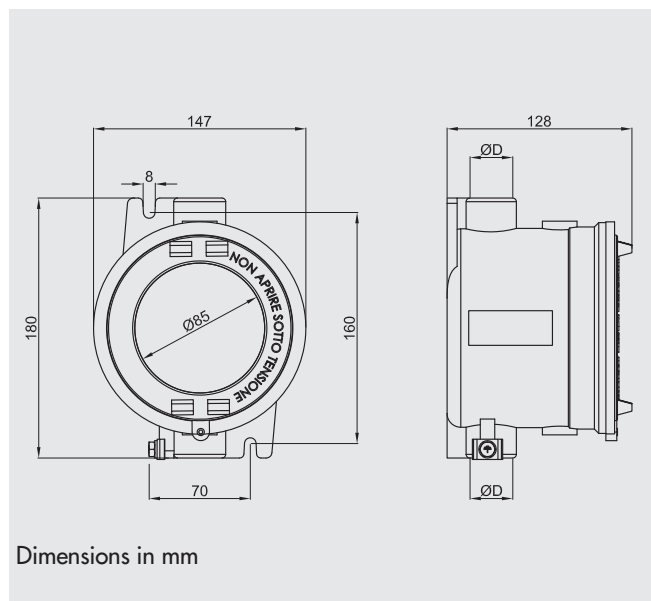
External polyester coatings in various colours (specify RAL colour)

Stainless steel or cast iron version available with minimum production batches. Contact your sales representative for more details. (sample code stainless steel EMHA-9IN, cast iron sample code EMHA-9GJ)

Cablegland / fittings



# EMHA-9 and CSC-H Series... Instrument housings

## DIMENSIONAL DRAWING



Dimensions in mm

## CODE SELECTION TABLE

Illustration	Entry $\varnothing D$	Description	Weight Kg	Codes
	3/4" ISO7/1	Instrument casing $\varnothing 85$ mm	1.88	<b>EMHA-9</b>
	3/4" NPT			<b>EMHA-9N</b>
	1" ISO 7/1	Single body; instrument casing	0.75	<b>CSC-H</b>
	1" NPT			<b>CSC-HN</b>