

EX EARTHING CLAMPS





Installation: hazardous areas - Zone 1 / 2 (Gases)

Classification: Group II - Category 2G



REFERENCE STANDARDS

Directive 2014/34/EU

EXECUTION	⊗ II 2 G Ex d IIC T6
RULES OF COMPLIANCE	EN 50014: 1997 + A1 and A2; EN 50018:2000 + A1
EC Type-Examination Certificate	CESI 05 ATEX 005
PROTECTION DEGREE	IP66
AMBIENT TEMPERATURE	-20°C ÷ +55°C
OTHER AVAILABLE CERTIFICATES	EAC: TC RU C-IT.BH02.B.00608 (-60°C ÷ +60°C) RUSSIAN MARINE CERTIFICATE (RMRS): 19.02523.280

Mechanical characteristics

Haft	nylon shock proof insulating
Contacts	elastic phosphor bronze, suitable for fastening on tank tails 8-11 mm
Contact support	brass
Cable entry	marine brass gland
Earthing cable	external diameter 8-11mm (NOT SUPPLIED)

APPLICATIONS

IT 25... earthing clamps is used to connect tankers to ground during loading and unloading operations.

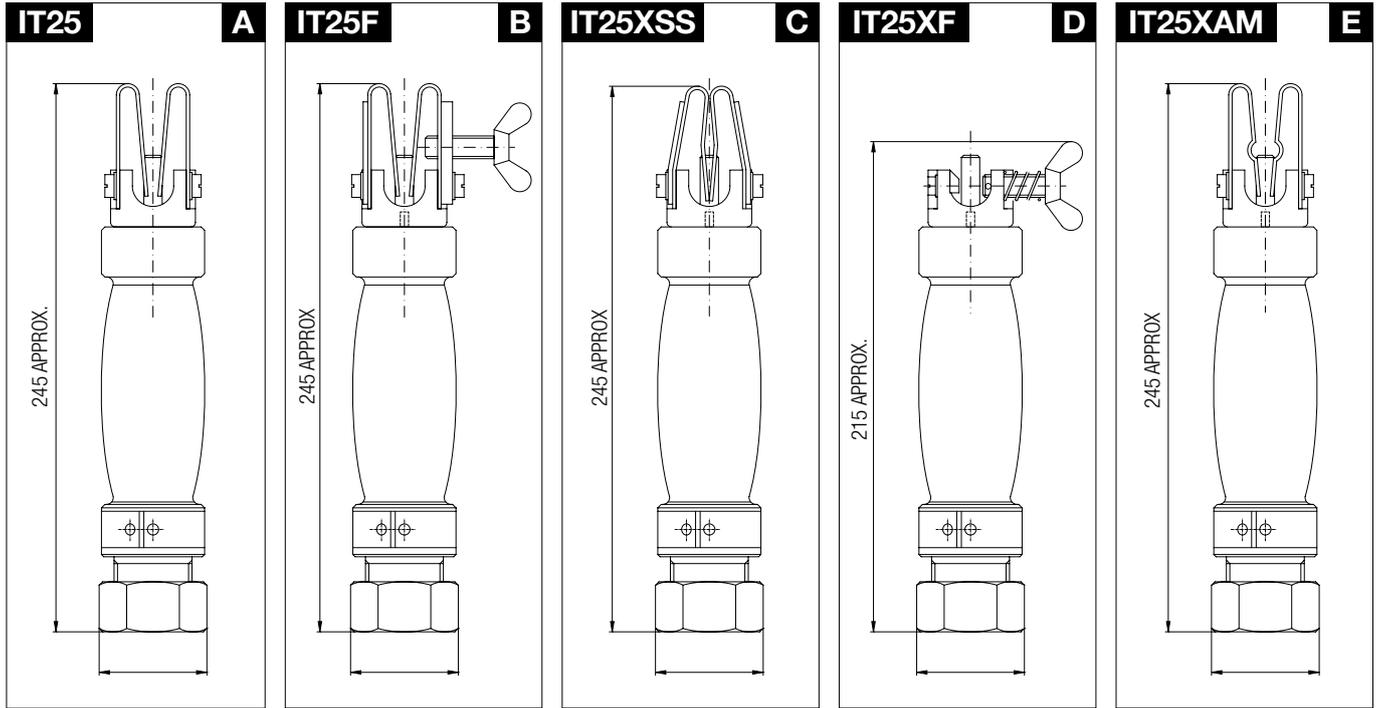
Connecting the clamp to tank tail, the grounding circuits is automatically closed.



Technical Features

TYPE	TYPE OF CONNECTION DESCRIPTION	WEIGHT [Kg]	DETAIL
IT25	NORMAL SPRING CLAMPING	0,7	A
IT25F	SPRING CLAMPING & MECHANICAL FIXING	0,7	B
IT25XSS	THIN STRUCTURE CLAMPING	0,7	C
IT25XF	METAL BARREL CLAMPING	0,7	D
IT25XAM	ROUND SHAPED EARTHING FIXING	0,7	E

Reference details



REMARK:

Due to the development of the national and international specifications and of the technology, the above technical characteristics showed on this bulletin can be considered as binding on our confirmation only.



Installation: hazardous areas - Zone 1 / 2 (Gases)

Classification: Group II - Category 2G



REFERENCE STANDARDS

SM2021F ELECTRONIC SYSTEM

Directive 2014/34/EU

EXECUTION	(⊕ II 2 G) Ex db IIA or IIB or IIB+H2 T6...T3 (⊕ II 2 G) Ex db [Ia/Ib IIA or IIB or IIC Ga] IIA or IIB or IIB+H2 T6 (⊕ II 2 D) Ex tb IIIC T85°C...T200°C (⊕ II 2 D) Ex tb [Ia Da/Ib] IIIC T85°C
RULES OF COMPLIANCE	EN/IEC 60079-0; EN/IEC 60079-1; EN/IEC 60079-11; EN/IEC 60079-31
EC Type-Examination Certificate	INERIS 13 ATEX 0022X
PROTECTION DEGREE	IP66
AMBIENT TEMPERATURE	-60°C ÷ +80°C
OTHER AVAILABLE CERTIFICATES	Component: INERIS 13 ATEX 9019U IECEx: IECEx INE 13_0070X INMETRO: CEPEL 12.2139 EAC: TC RU C-IT.ГБ02.B.00689/18 RINA: ELE18111CS_012 RUSSIAN MARINE CERTIFICATE (RMRS): 19.02523.280 NEC 505: UL 20141204-E302348 - Type rating NEMA 1, 12, 4 and 4X

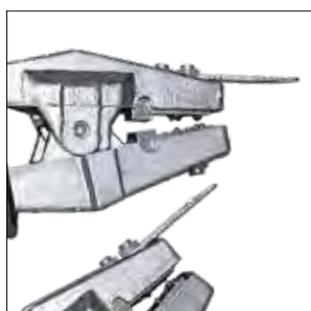
SM2021IIC ELECTRONIC SYSTEM

Directive 2014/34/EU

EXECUTION	(⊕ II 2 G) Ex db IIC T6...T3 (⊕ II 2 G) Ex db [Ia/Ib/Ic IIA or IIB or IIC Ga/Gc] IIC T6...T3 (⊕ II 2 D) Ex tb IIIC T85°C...T200°C (⊕ II 2 D) Ex tb [Ia Da/Ib/Ic Dc] IIIC T85°C...T200°C
RULES OF COMPLIANCE	EN/IEC 60079-0; EN/IEC 60079-1; EN/IEC 60079-11; EN/IEC 60079-31;
EC Type-Examination Certificate	INERIS 13 ATEX 0023X
PROTECTION DEGREE	IP66
AMBIENT TEMPERATURE	-60°C ÷ +80°C
OTHER AVAILABLE CERTIFICATES	Component: INERIS 13 ATEX 9019U IECEx: IECEx INE 13.0071X Component: IECEx INE 13.0085U INMETRO: CEPEL 12.2137 EAC: TC RU C-IT.ГБ02.B.00689/18 RUSSIAN MARINE CERTIFICATE (RMRS): 19.02523.280

Mechanical characteristics

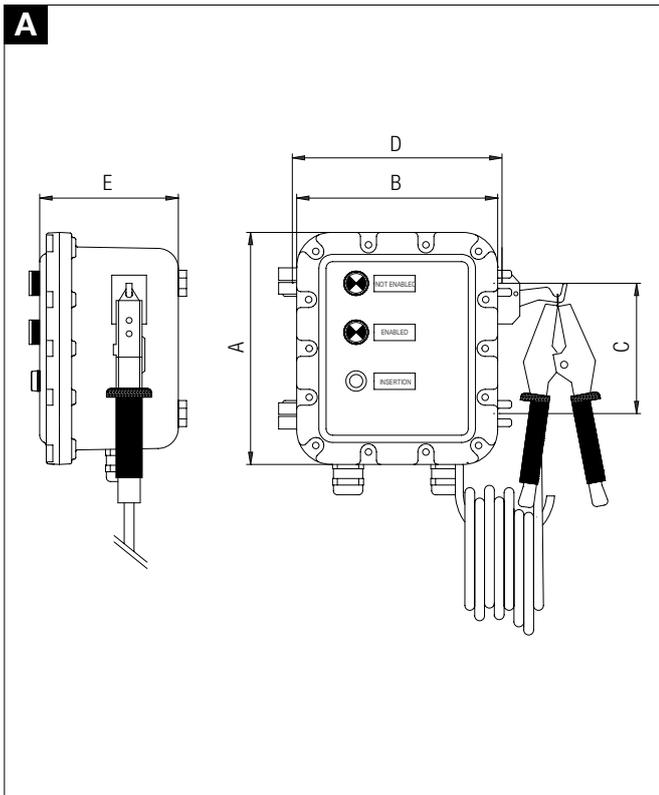
Body	marine grade copper free aluminum light alloy
Cover	marine grade copper free aluminum light alloy
Screws	stainless steel
Internal plate	hot dip galvanized steel
External Painting	epoxy powders RAL-9006 Grey coloured
Hinges	casted on enclosure's body and cover (SM2021F)



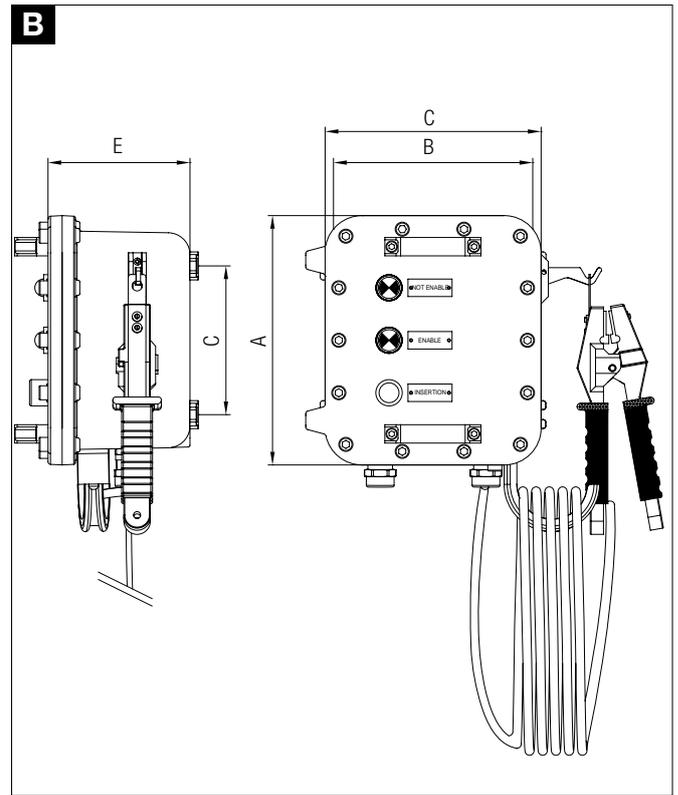
Technical Features

CODE	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	WEIGHT [Kg]	DETAIL
SM2021F	285	245	160	276	169	12	A
SM2021IIC	285	245	169	226	170	13	B

Reference Details



Reference Details



APPLICATIONS

They are used to control grounding continuity during tanks loading and unloading operations. Tanks normally arrive electrostatically loaded, and an imperfect earthing might cause fire originated by a spark in presence of gas. The earthing control system is composed of a marine grade copper free aluminium enclosure, as above described, inside fitted with the earthing control electronic circuit SM-2001, which is normally set at 20 ohm, and authorize tanks loading/unloading when resistance is less than 20 ohm.

An intrinsically safety barrier placed inside the equipment and connected via the included cable clamp kit to the electronic system allows the on and only verification of the correct / perfect ground connection of the tank.

The tank ground connection is to made only with proper grounding clamp series IT (not included).

Enclosure is provided with: NOT AVAILABLE red light – AVAILABLE green light - INSERTION push button.

Red electronic system SM.. pilot light remain lit till grounding clamp IT series (not included) is perfect connected to vehicle's earthing bar.

Insertion push button is pressed for at least 2sec.

If the resistance measured by electronic circuit is less than 20ohm, SM electronic system allows for loading and unloading operations.

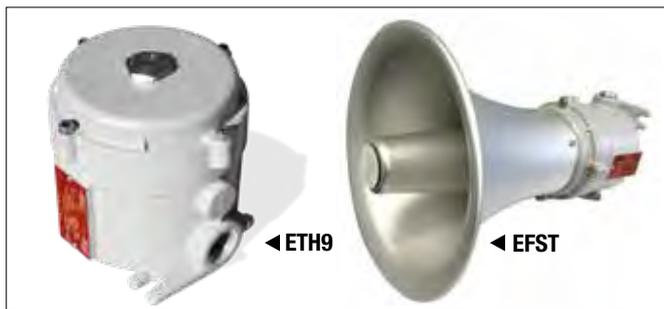
Earthing clamp for verification is normally complete with 8m of cable.

FOR GROUNDING TANKS CONNECTIONS, PLEASE USE EARTHING CLAMPS IT.. SERIES SHOWED ON PREVIOUS BULLETIN

REMARK:

Due to the development of the national and international specifications and of the technology, the above technical characteristics showed on this bulletin can be considered as binding on our confirmation only.





Installation: hazardous areas - Zone 1 / 2 (Gases) - Zone 21 / 22 (Dusts)
Classification: Group II - Category 2G 2D



REFERENCE STANDARDS

ACOUSTIC SIGNALERS ETH9...

Directive 2014/34/EU

EXECUTION	<ul style="list-style-type: none"> ⊗ II 2 G Ex d IIC T6 Gb ⊗ II 2 D Ex tb IIIC T85°C Db
RULES OF COMPLIANCE	EN/IEC 60079-0; EN/IEC 60079-1; EN/IEC 60079-31
EC Type-Examination Certificate	INERIS 15 ATEX 0012X
PROTECTION DEGREE	IP66
AMBIENT TEMPERATURE	-60°C ÷ +60°C
OTHER AVAILABLE CERTIFICATES	IECEx: IECEx IINE 15_0013X EAC: TC RU C-IT.BH02.B.00608 RUSSIAN MARINE CERTIFICATE (RMRS): 19.02523.280

MULTI-TONE ELECTRONIC SIREN EFST

Directive 2014/34/EU

EXECUTION	<ul style="list-style-type: none"> II 2 G Ex db IIC T6 II 2 D Ex tb IIIC T85°C
RULES OF COMPLIANCE	EN/IEC 60079-0; EN/IEC 60079-1; EN/IEC 60079-31
EC Type-Examination Certificate	EXA14ATEX0046
PROTECTION DEGREE	IP66
AMBIENT TEMPERATURE	-60°C +60°C
OTHER AVAILABLE CERTIFICATES	EAC: TC RU C-IT.BH02.B.00608 (-60°C ÷ +60°C) RUSSIAN MARINE CERTIFICATE (RMRS): 19.02523.280 IECEx: IECEx EXA 14.0003

Mechanical characteristics

Body	marine grade copper free aluminum light alloy
Cover	marine grade copper free aluminum light alloy
Screws	stainless steel



On Request Accessories:

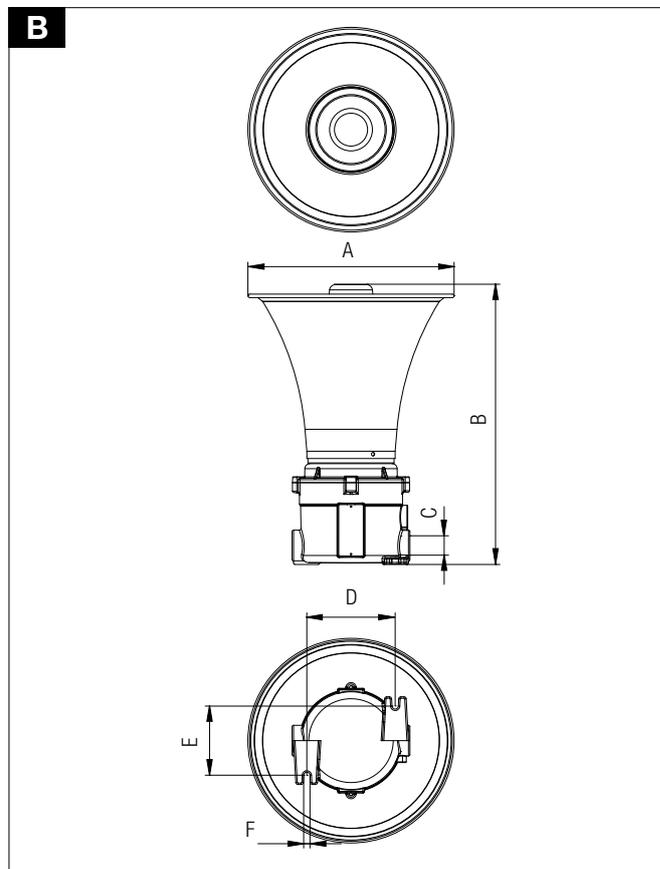
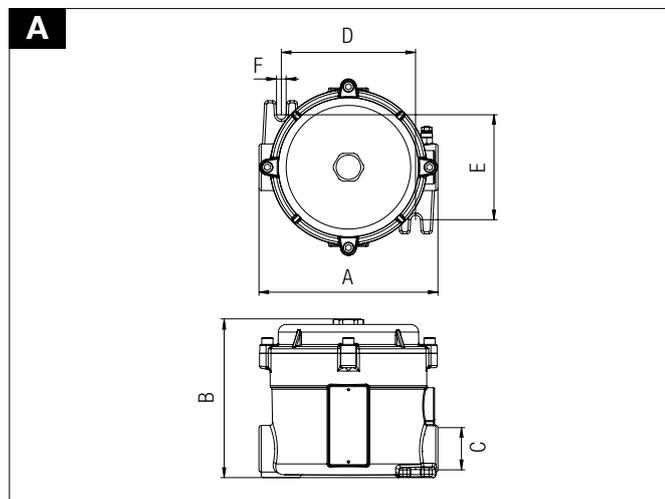
- External epoxy painting (any colours)
- Threaded cable entry different than standard

Technical Features

CODE	A [mm]	B [mm]	ØC [mm]	D [mm]	E [mm]	F [mm]	TEMPERATURE CLASS (GAS)	TEMPERATURE CLASS (DUSTS)	WEIGHT [Kg]	DETAIL
ETH9	160	143	NPT 3/4"	120	95	9	T6	T85°C	2	A
EFST	280	383	NPT 3/4"	120	95	9	T6	T85°C	2,6	B

TYPE	VOLTAGE	CONSUMPTION	DUTY	SOUND INTENSITY [db]
ETH9#012AC	12V - 50/60Hz	13VA	CONTINUOUS	80
ETH9#024AC	24V - 50/60Hz	13VA	CONTINUOUS	80
ETH9#110AC	110V - 50/60Hz	13VA	CONTINUOUS	80
ETH9#230AC	230V - 50/60Hz	13VA	CONTINUOUS	80
ETH9#012DC	12V - DC	8VA	CONTINUOUS	80
ETH9#024DC	24V - DC	8VA	CONTINUOUS	80
ETH9#110DC	110V - DC	8VA	CONTINUOUS	80
EFST7-12/24VAC/DC	12/24V DC - AC 50/60Hz	10W - 710mA	CONTINUOUS	100
EFST7-110-230VAC	110-230V - 50/60Hz	10W - 710mA	CONTINUOUS	100

Reference Details

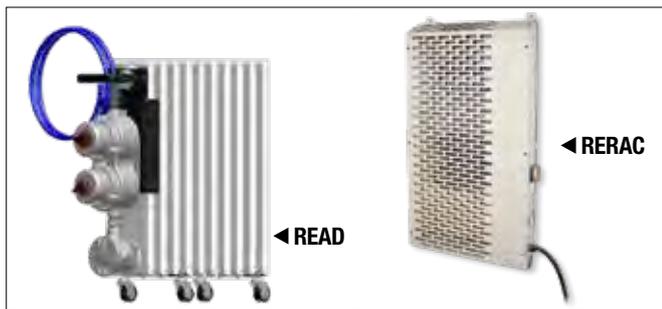


EFST MULTI-TONE ELECTRONIC SIREN - SOUND FEATURES	
LEVEL	100 db @ 1m
FREQUENCY	440 ÷ 1600 Hz
AVAILABLE MODULATIONS	5
1 - TWO TONE	400 Hz / 0,1 sec. - 554 Hz / 0,1 sec.
2 - YELP	750 Hz / 2 sec. ON - 2 sec. OFF
3 - WAIL	400÷800 Hz / 2.5 sec. UP - 2.5 sec. DOWN
4 - PULSED	554 Hz / 1 sec. ON - 1 sec. OFF
5 - FIX TONE	554 Hz

REMARK:

Due to the development of the national and international specifications and of the technology, the above technical characteristics showed on this bulletin can be considered as binding on our confirmation only.





Installation: hazardous areas - Zone 1 / 2 (Gases)
Zone 21 / 22 (Dusts) Safe Areas
Classification: Group II - Category 2G 2D



REFERENCE STANDARDS

FLAME PROOF ELECTRIC RADIATORS - READ (SWITCH)

EXECUTION	<ul style="list-style-type: none"> ⊗ II 2 G Ex d IIC T6 Gb ⊗ II 2 D Ex tb IIIC T85°C Db
RULES OF COMPLIANCE	EN/IEC 60079-0; EN/IEC 60079-1; EN/IEC 60079-31
EC Type-Examination Certificate	INERIS 04 ATEX 0076X
PROTECTION DEGREE	IP66
AMBIENT TEMPERATURE	-60°C ÷ +60°C
OTHER AVAILABLE CERTIFICATES	IECEX: IECEX INE 11.0033X INMETRO: CEPEL 13.2255X EAC: TC RU C-IT.Г508.B.01323

FLAME PROOF ELECTRIC RADIATORS - READ (HEATER)

EXECUTION	II 2 G Ex d IIC T4, T3, T2, T1 Gb
RULES OF COMPLIANCE	EN/IEC 60079-0; EN/IEC 60079-1;
EC Type-Examination Certificate	CESI 03 ATEX 082X
PROTECTION DEGREE	IP66
AMBIENT TEMPERATURE	-60°C ÷ +60°C
OTHER AVAILABLE CERTIFICATES	IECEX: IECEX INE 11.0013X INMETRO: NCC 13.02431 X EAC: TC RU C-IT.Г505.B.00189

INDUSTRIAL ELECTRIC HEATER - RERAC

EXECUTION	INDUSTRIAL WEATHERPROOF
RULES OF COMPLIANCE	CEI / EN 60598-1
EC Type-Examination Certificate	-
PROTECTION DEGREE	IP20 (RERAC-L) IP44/IP55 (RERAC / RERAC-C)
AMBIENT TEMPERATURE	-
OTHER AVAILABLE CERTIFICATES	-

Mechanical characteristics READ

Control box	marine grade copper free aluminum light alloy
Heating unit	stamped and welded steel sheets
Control box painting	epoxy powders grey RAL-9006 colour
Heating unit painting	epoxy powders grey RAL-7035 colour

Mechanical characteristics RERAC

Box	welded steel 8/10mm th.
front upper and inferior surfaces	steel sheet 15/10mm th. with oblong holes
Painting	ivory RAL-1015 colour



On Request Accessories:

- Different supply from standard
- Protection degree IP40 (RERAC...)

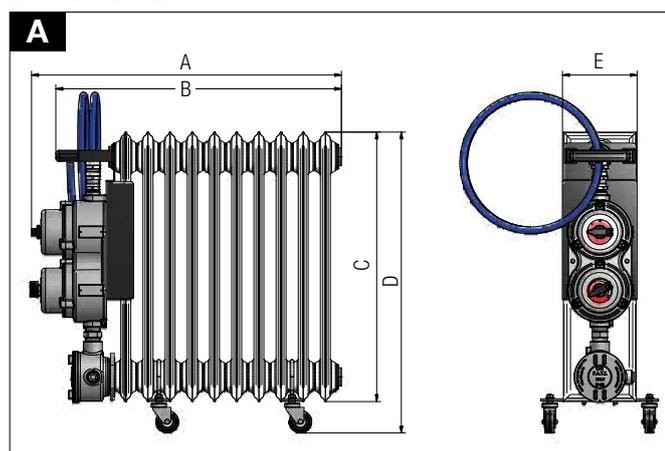
Technical Features

CODE	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	WEIGHT [Kg]	DETAIL
READ1000W	640	510	600	675	165	39	A
READ2000W	1140	1010	600	675	165	74	A
RERAC21000	520	715	490	695	133	11	B
RERAC31500	520	715	490	695	133	11,05	B
RERAC42000	520	715	490	695	133	12	B
RERACC2500	315	700	288	680	108	6,6	B
RERACC2800	315	700	288	680	108	6,9	B
RERACC3750	315	700	288	680	108	7,2	B
RERACL1900	1060	395	1040	375	107	9,1	C
RERACL21800	1060	395	1040	375	107	9,6	C

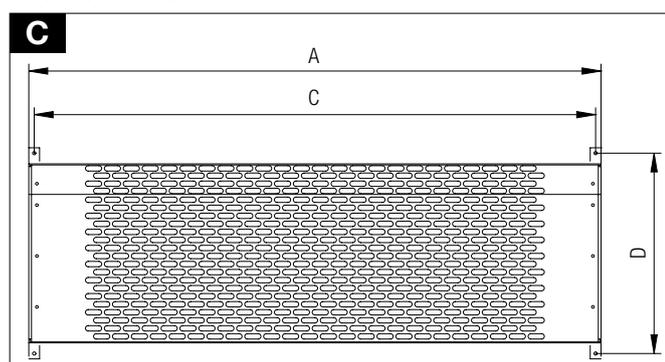
CODE	TENSION	POWER [W]	DETAIL
READ1000W	230V - 50/60Hz	1000	A
READ2000W	230V - 50/60Hz	2000	A </td

CODE	TENSION	POWER LEVELS [W]		DETAIL
		I	II	
RERAC21000	230V - 50/60Hz	500	1000	B
RERAC31500	230V - 50/60Hz	1000	1500	B
RERAC42000	230V - 50/60Hz	1000	2000	B
RERACC2500	230V - 50/60Hz	250	500	B
RERACC2800	230V - 50/60Hz	550	800	B
RERACC3750	230V - 50/60Hz	500	750	B
RERACL1900	230V - 50/60Hz	900	-	C
RERACL21800	230V - 50/60Hz	900	1800	C

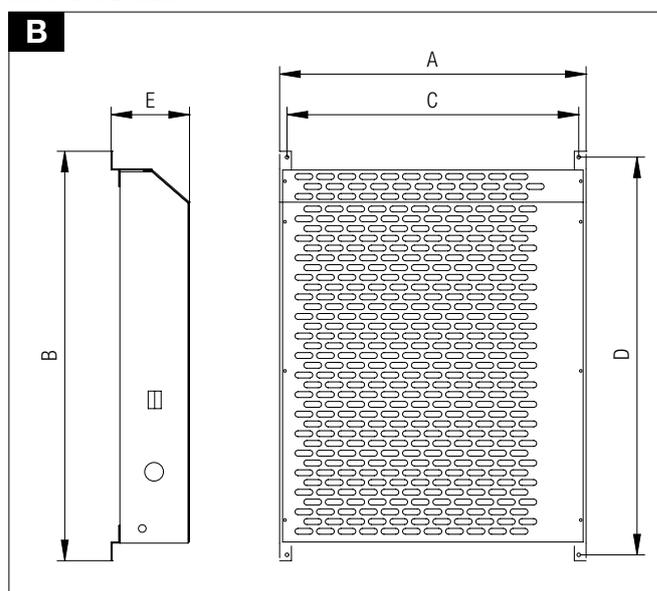
Reference Details



Reference Details



Reference Details



CONSTRUCTION FEATURES:

Electric heater, oil field, movable on pivoting wheels or to be fixed by special supports on the floor or to the wall.
 Two electric armoured resistances unit provided with incorporated thermal circuit breaker located inside one.
 Resistance thermal exchange: 2W/sqcm
 Control gear box containing a three positions change over switch: 0 – 50% - 100% power.
 Adjustable thermostat. Certified cable gland for a feeding armoured 2 Mt. cable 3x2.5sqmm
 Heating system is composed with a group of finned armoured electric resistance, electrically connected to have two heating levels (only RERAC...).

REMARK:

Due to the development of the national and international specifications and of the technology, the above technical characteristics showed on this bulletin can be considered as binding on our confirmation only.





Installation: safe area
Classification: IP55



REFERENCE STANDARDS

ELECTRICAL PANEL

CEI / IEC

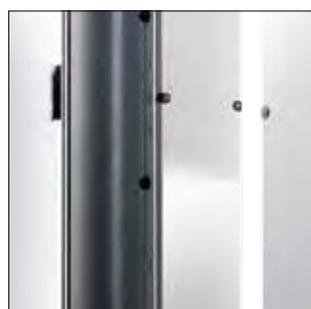
EXECUTION	INDUSTRIAL WATERPROOF
RULES OF COMPLIANCE	-40°C ÷ +70°C
PROTECTION DEGREE	IP55
CERTIFICATE REF.	-
RULES OF COMPLIANCE	CEI EN 60439-1 (CEI 17-13/1) CEI EN 90529

Mechanical characteristics

Framework And Panel	15-20/10 thick sheet steel with galvanic or sendzimir treatment
Glass (On Request)	tempered glass (5mm thickness) complete with silicon rubber gasket
Screws	stainless steel

Mechanical characteristics RERAC

Maximum rating	600A
Insulating voltage	690V
Test voltage	50Hz 2500V for 1 minute
Frequency	50/60Hz
Short circuit withstand strenght on plate	Max 35 kA for 1 minute
Distribution bars	Ipk=73,5 kA peak

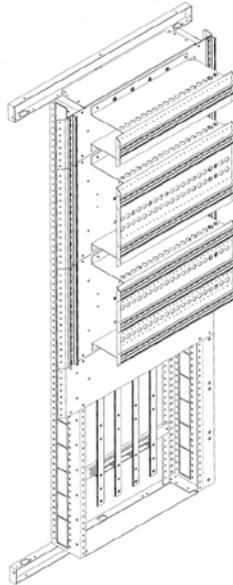


On Request Accessories:

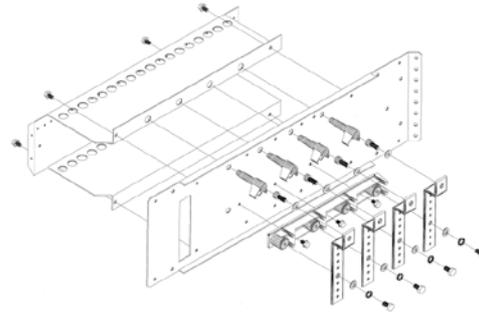
- Other degree protection level
- Stainless steel AISI316L framework and interior panel

Weatherproof sheet steel or stainless steel 304/316 control panel, interchangeable plate version

Flexibility



The system is designed so that the standard type (circuit breakers) can be integrated with other types (contactors) with no need to adapt other (different) structures to the primary system to support the different types.

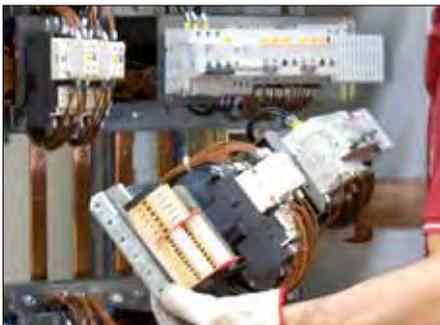


Safety



The control panel has been designed so that no live part can come into contact with the operator's body even with the main door open, according to the degree of protection IP XX B of standard IEC 529.

Interchangeability



In case of breakdown the plates (the system's main characteristic) can be easily replaced with new ones of the same type with a very simple operation. The plates can be prepared by FEAM, wired or already fitted and shipped to destination.

REMARK:

Due to the development of the national and international specifications and of the technology, the above technical characteristics showed on this bulletin can be considered as binding on our confirmation only.

