

# MOTREX SERIES

EXPLOSION MOTOR STARTER  
AND LOAD DISCONNECT SWITCHES  
FOR HAZARDOUS AREAS ATEX & IECEX

**Zones 1, 2, 21 and 22**



SWITCHES 2 POSITIONS	4
SWITCHES 3 POSITIONS	5
ROTARY FLAMEPROOF SWITCHES	6
SAFETY AND ISOLATION SWITCH ATEX & IECEX	8
MOTOR STARTERS, MOTOR PROTECTION ATEX & IECEX IP66	14
MAGNETIC MOTOR STARTERS WITH MOTOR PROTECTION ATEX & IECEX IP65	20
MAGNETIC MOTOR STARTERS WITH THERMAL RELAY ATEX & IECEX IP66	25
INVERTER MOTOR STARTERS ATEX & IECEX IP66	30
EX STAR TRIANGLE MOTOR STARTERS ATEX & IECEX IP66	35



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# Delvalle, wide experience in manufacturing solutions for hazardous area



## WE PUT AT YOUR DISPOSAL

We offer over **45 years** providing hazardous area **solutions** to demanding customers who require very specific characteristics and behaviour according to the sector and their needs.

## WHEREVER YOU GO

We are committed to working closely with our customers, providing them with exceptional service and offering an advanced and **extensive range of hazardous area products** with very competitive prices.

## CONSULTING & ENGINEERING

Atex Delvalle adapts to our clients' needs by offering hazardous-area systems. Atex-delvalle are the leading certified assembler of Ex junction boxes, our **customized services**, **experienced design** and drafting 3D support.

## HIGH STANDARD OF QUALITY AND SERVICES

We only use materials provided by companies who offer the very highest quality, suitable and certified products. Our success is due to **top quality** assurance: ISO 9001, SGS, UL, TÜV, ISO 14000, Ohsas 1800, Atex, IECEx.



**100%**

Diseñado y fabricado íntegramente en España

Entirely designed and manufactures in Spain



## CONTACT US

Confidentiality, reliability & quality

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ALSO ONLINE



Please contact our technical sales department.

A team of professionals with high experience and ability to solve all your queries.





Zones 1, 2, 21 and 22

# SWITCHES 2 POSITIONS



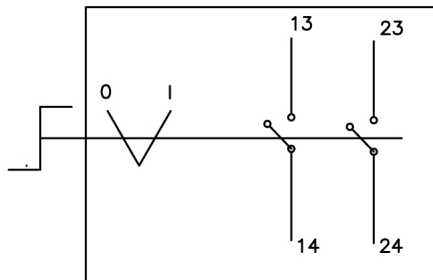
Example

**Keep Control in Any Area with Maximum Security and Flexibility**

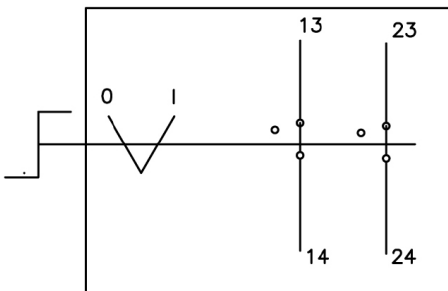
Atex selectors switches (start-stop), is performed on a stainless steel box anticorrosive according ATEX directives 2014/34/EU and 2014/35/EU. They are suitable for use in petrochemical plants, offshore oil companies, refineries, etc. Available Atex switches with three positions and Atex flameproof switches.

## TECHNICAL SPECIFICATIONS

Selector switch  
2 NO, 2 position  
0 - I



Selector switch  
2 NO, 2 position  
0 - I



## APPLICATIONS

Atex control boxes are specially designed to perform checks, maneuvers and as actuators in explosive atmospheres. They have a rugged, corrosion proof system and are finished in stainless steel.

Allows you to take control of both machines zones 1, 2, 21 and 22

## IT CONTAINS

- Selector switch 2 position NO.
- Cable gland nickel plated brass M25 cable not armed.
- Options other measurements, other materials, for armored cable,...

REFERENCE

CONTREX 1051

## SIZE

120x120x75 (Option AISI304L and AISI316L)



Zones 1, 2, 21 and 22

## SWITCHES 3 POSITIONS

**We Offer High  
Atex Reliability**

Atex selectors switches three maneuvers, is performed on a stainless anticorrosive steel box Atex directives 2014/34/EU and 2014/35/EU. Available Atex switches with three positions and Atex switches flameproof.

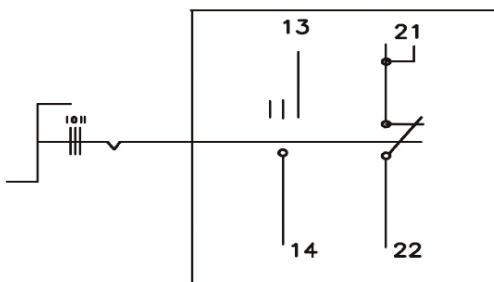


Example

→ FOR MORE INFORMATION CLICK HERE

### TECHNICAL SPECIFICATIONS

Selector switch  
1 NO + 1 NC, 2 position with 3 stops  
I-0-II, latching



### APPLICATIONS

Atex control boxes are specially designed to perform checks, maneuvers and as actuators in explosive atmospheres. They have a rugged, corrosion proof system and finished in stainless steel.

Allows you to take control of both machines zones 1, 2, 21 and 22

### IT CONTAINS

- Selector switch 1 NO + 1 NC  
2 position with 3 stops I-0-II, latching.
- Cable gland nickel plated brass M25 cable not armed.
- Options other measurements, other materials, for armored cable,...

REFERENCE

CONTREX I050

### SIZE

120x120x75 (Option AISI304L and AISI316L)



# ROTARY FLAMEPROOF SWITCHES

**Keep Control in Any Area  
with Maximum Security  
and Flexibility**

Ex circuit breakers, switches and change-over switches are rotary type models with a control device on the cover. The switches have a range of 16A whereas EFSCO series have ranges of 25, 50 and 63A. Switches are supplied with Male 1" - Female 3/4" reducer.



Example

## CHARACTERISTICS

- Low copper content aluminium alloy body and cover.
- Front aluminium handle.
- Cover fitted with stainless steel closing screws.
- Fixing lugs.
- Internal/external stainless steel earth screws.
- RAL 7035 epoxy coating.

## MARKING

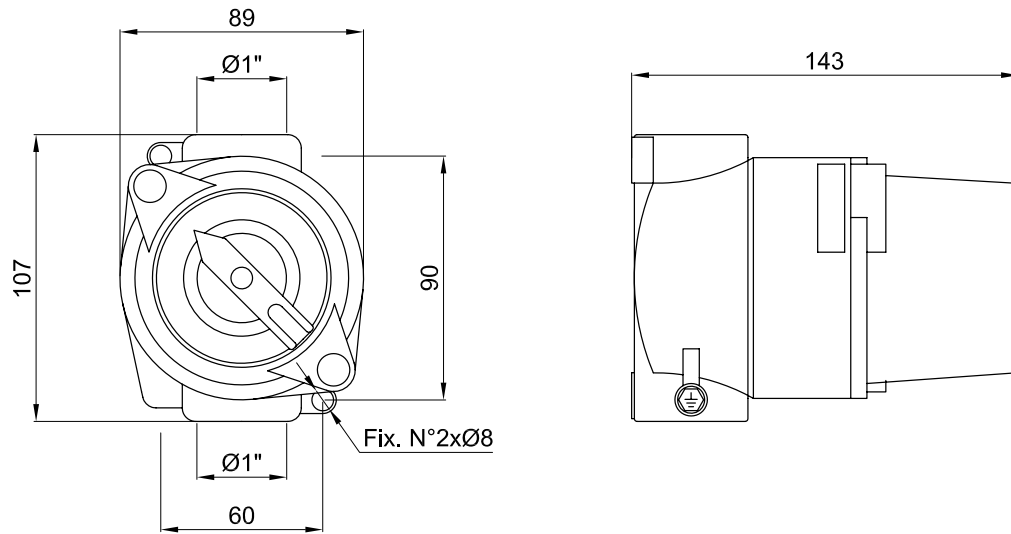
- II 2 G D:
  - Ex d IICT6
  - Ex tD A2I IP 66
- Directive:
  - 2014/34/EU
- Norms:
  - EN 60079-0      IEC 60079-0
  - EN 60079-1      IEC 60079-1
  - EN 61241-0      IEC 61241-0
  - EN 61241-1      IEC 61241-1

➔ [FOR MORE INFORMATION CLICK HERE](#)



# ROTARY FLAMEPROOF SWITCHES

## BLUEPRINT AND DIMENSIONS



## REFERENCES

REF.	DESCRIPTION	HOLE	RANGE	POLES	WEIGHT
RS001	Switches	1"	16A	2	0,95
RS002	Switches	1"	16A	3	0,86
RS003	Switches	1"	16A	4	0,85
RS004	Conmutador (1-0-2)	1"	16A	2	0,89
RS005	Derivador (0-1)	1"	16A	2	0,89
RS006	Switches investment (1-0-2)	1"	16A	2	0,89



Zones 1, 2, 21 and 22

# SAFETY AND ISOLATION SWITCHES

## ATEX & IECEX

**Robust and Easy to Install**



Example screw closure (Geoex)



Example hinged closure (Luxorex)

The Ex safety and isolation switch, allows work with a machine to safely maintain, clean and overhaul it as long as the switch is in the OFF position.

It's made up of two components:

- The control component is a selector, which allows the current to go through the circuit or not. The ON position (1) allows the current, so blocks access to the machine through the mechanical blocker. The OFF position (0) blocks the current, to allow any work on the machine to be carried out.
- The isolation module allows the current to go through the circuit when the selector is in the ON position, and keep the current when the selector is in the OFF one.

This kind of switch is commonly used in any industry which uses machines, because the electrical circuits and tri-phase asynchronous motors need the energy supply and the installation kept separate, in places considered as potentially explosive, such as zones 1, 2, 21 and 22.

The switch is protected by a stainless steel AISI 316L enclosure, specifically designed, waterproof, antirust and with IP66 protection degree. It has a protection "Ex e" and "Ex d", which allows use in zones with a high explosion risk.

We have two types of closures:

- Screw closure (Geoex)
- Hinged closure (Luxorex)

➔ [FOR MORE INFORMATION CLICK HERE](#)



# SAFETY AND ISOLATION SWITCHES **ATEX & IECEX**

## CHARACTERISTICS

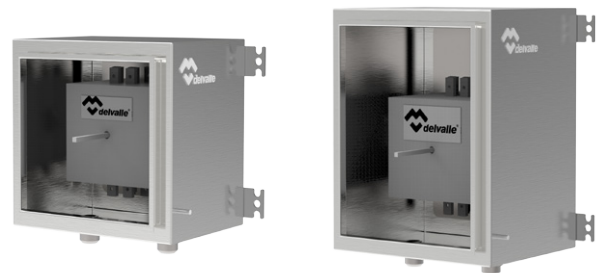
The Ex switch rated current is between 25 and 180A.

It can work between two temperature ranges, which give it a higher use capacity.

- $-20^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$
- $-20^{\circ}\text{C} \leq T_a \leq 40^{\circ}\text{C}$

The Ex enclosure has:

- The joint between the cover and body, is designed to secure an IP66 degree protection.
- The selector has an IP65 degree protection.
- It's designed with stainless steel AISI 304L.
- It includes two cable glands with "Ex e" protection in either M25 nickel plated brass or in stainless steel.
- It has four wall brackets.
- It has "Ex e" and "Ex d" protection, for use it in zones 1, 2, 21 and 22 with explosive atmospheres with dust and gas.



## OPTIONS

- We have two types of closures:
  - Screw closure (Geoex)
  - Hinged closure (Luxorex)
- There are two kinds of Ex selector, one normal and the other an emergency selector, in red and yellow.
- Choice of poles between 3 poles, 3 poles + neutral, 4 poles and 6 poles.
- Possibility of including auxiliary contacts:
- Enclosure is made in AISI 316L stainless steel for marine or highly corrosive places.
- Ex cable glands available in any size and thread.

## ADVANTAGES

- The enclosure can be manufactured in stainless steel 316L.
- It's a necessary device in order to carry out maintaining, cleaning or overhauling.
- It gives a total block.
- Enclosure is made in AISI 316L stainless steel for marine or highly corrosive places.

# SAFETY AND ISOLATION SWITCHES **ATEX & IECEX**

## PROTECTION MODE

This equipment is certified for use in potentially explosive atmospheres in 1, 2, 21 and 22 zones and it has “Ex e” and “Ex d” (protection).

Atex mark:

- II2G Ex d e IICT6/T5 Gb
- II2D Ex tb IIIC T85°C /T I00°C Db
- Certificate number: LOM14ATEX2082

- Certificate number: LOM 17ATEX1011

IECEX mark:

- Ex d e IICT6/T5 Gb
- Ex tb IIIC T85°C/T I00°C Db
- Certificate number: EX/LOM/IECEX

## NORMATIVE

Atex directive and regulation:

- Atex directive 2014/34/EU
- EN 60079-0:2012
- EN 60079-1:2007
- EN 60079-7:2015
- EN 60079-31:2010

- IEC 60079-7:2015
- IEC 60079-31:2013

Enclosure regulation:

- IP regulation (IP65): IEC 60529
- IK regulation (IK10): IEC 62262

IECEX regulation:

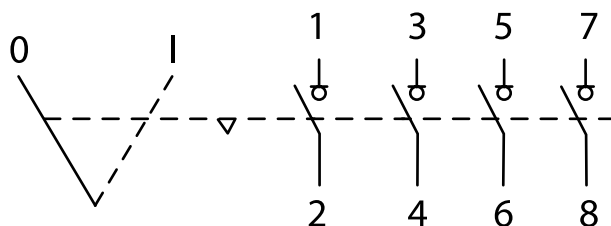
- IEC 60079-0:2011
- IEC 60079-1:2006

Low voltage directive and regulation:

- Directive 2014/35/EU
- EN 61439-1:2011
- EN 61439-2:2011

## ELECTRICAL DIAGRAM

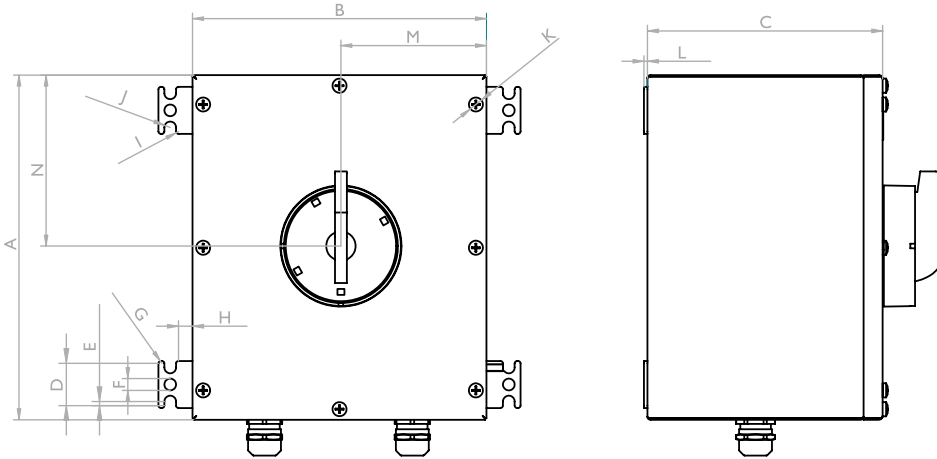
The electrical diagram is the following in case you have chosen four poles.



# SAFETY AND ISOLATION SWITCHES **ATEX & IECEX**

## BLUEPRINT AND DIMENSIONS GEOEX

The planes are the same for all models, even if the measurements change.



**10**  
YEARS

**GUARANTEE**  
FOR STAINLESS  
ANTICORROSIVE

**5**  
YEARS

**GUARANTEE**  
FOR MECHANICAL  
PARTS

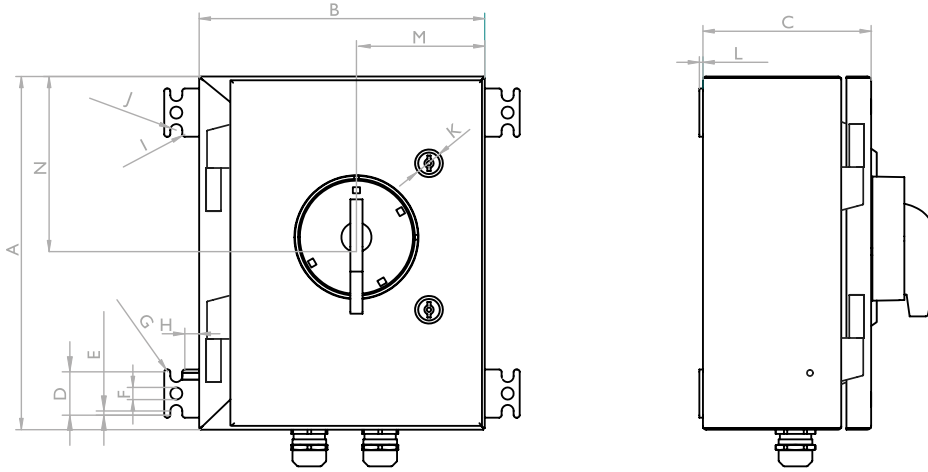
GEOEX - DIMENSIONS (mm)														
25A														
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
3P	175	150	110	36	3,5	D10	R2	12	R2	R5	D12	3	94	74
4P			110											
3P+N			110											
6P			150											
40A														
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
3P	200	200	175	36	3,5	D10	R2	12	R2	R5	D12	3	100	112
4P			175											
3P+N			175											
6P			210											
80A														
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
3P	250	250	200	36	3,5	D10	R2	12	R2	R5	D12	3	124	124
4P			200											
3P+N			200											
6P			240											
180A														
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
3P	350	275	250	36	3,5	D10	R2	12	R2	R5	D12	3	136	201
4P			250											
3P+N			250											
6P			300											



# SAFETY AND ISOLATION SWITCHES **ATEX & IECEX**

## BLUEPRINT AND DIMENSIONS LUXOREX

The planes are the same for all models, even if the measurements change.



**10 YEARS**  
**GUARANTEE**  
 FOR STAINLESS  
 ANTICORROSIVE

**5 YEARS**  
**GUARANTEE**  
 FOR MECHANICAL  
 PARTS

LUXOREX - DIMENSIONS (mm)														
25A														
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
3P	300	250	150	36	3,5	D10	R2	12	R2	R5	D27	3	125	152
4P			150											
3P+N			150											
6P			200											
40A														
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
3P	270	270	200	36	3,5	D10	R2	12	R2	R5	D12	3	135	135
4P			200											
3P+N			200											
6P			250											
80A														
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
3P	300	300	200	36	3,5	D10	R2	12	R2	R5	D12	3	150	150
4P			200											
3P+N			200											
6P			250											
180A														
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
3P	350	320	250	36	3,5	D10	R2	12	R2	R5	D12	3	160	175
4P			250											
3P+N			250											
6P			300											



# SAFETY AND ISOLATION SWITCHES **ATEX & IECEX**

## REFERENCES

This motor protection includes some different and as consequence of this we have created the next table to know the equipment's code.

TYPE	RATED CURRENT (A)	HANDLE'S COLOUR SWITCH	NUMBER OF POLES	AUXILIARY CONTACTS	EX
SSIS	To choose one	To choose between the black and red one	To choose between 3 poles, 3 poles + neutral, 4 poles and 6 poles	To choose one. In case of want nothing, not write	EX
	25 40 80 180	R  N	3P 3PN 4P 6P	NONC 2NC 2NO NC NO	EX
Version Luxorex, with door		Add "P" to reference. Ex. "SSIS/25-R-4P-NONC-EX-P"			

### EXAMPLE GEOEX

Switch Geoex with 25A rated current, handle in red colour, with 4 poles and one auxiliary contact normally open and another normally closed.

CODE

SSIS/25-R-4P-NONC-EX

### EXAMPLE LUXOREX

Switch Luxorex with 40A rated current, handle in red colour, with 4 poles and one auxiliary contact normally open and another normally closed.

CODE

SSIS/40-R-4P-NONC-EX-P





Zones 1, 2, 21 and 22

# MOTOR STARTERS - MOTOR PROTECTION

## ATEX & IECEX IP66

**Protect Electric Tri-Phase Motor in Zones with Explosives Atmospheres**



Example screw closure (Geoex)



Example hinged closure (Luxorex)

The Ex motor protection has been designed to brain in one device the ability to protect one electric tri-phase motor in zones with explosives atmospheres as well as to start and stop that motor.

It's formed of two components:

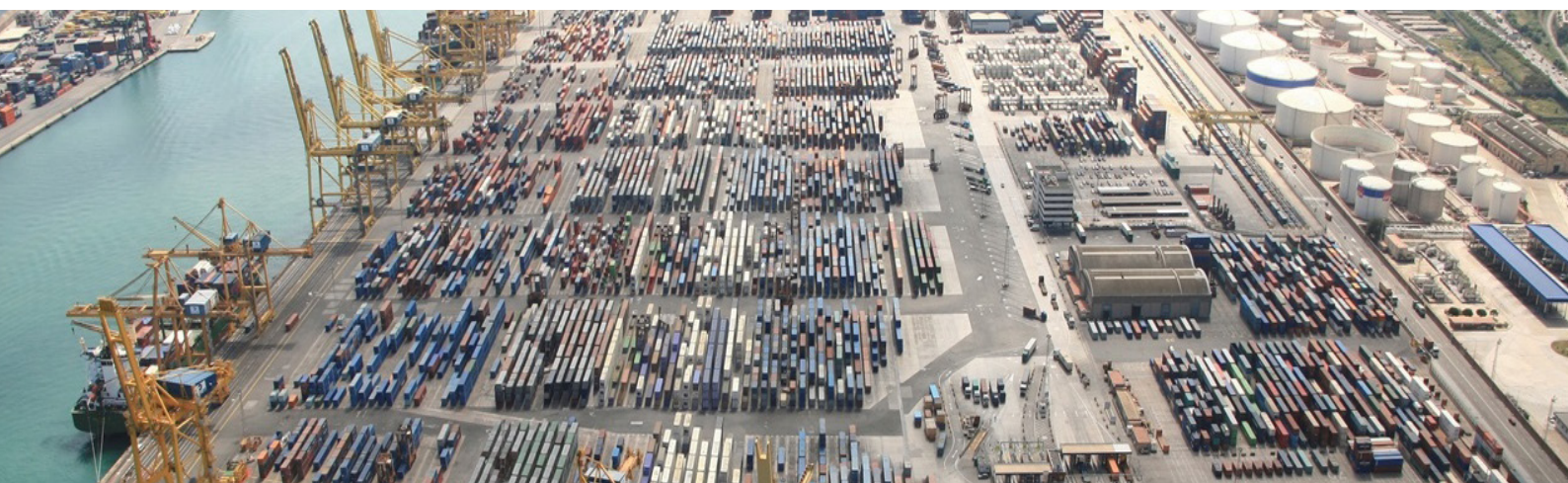
- As internal component with one motor protector, which protects the motor against heavy electrical problems, like short-circuits, overloads and motor or circuit failures.
- It has a selector, the only control component. It starts the motor in the ON position (I) and stops it the OFF one (0).

The design has been made in a waterproof and antirust enclosure with AISI 304L stainless steel. This design allows us to use this device in protected spaces with a high explosion risk, getting this manner, the "Ex e" and "Ex d" protection types in potentially explosive atmospheres of dust and gas. It can be used in any industry considered to hace an explosive atmosphere in dust or gas places, like oil & gas, petrol chemical, petrol, offshore industries,...

We have two types of closures:

- Screw closure (Geoex)
- Hinged closure(Luxorex)

[FOR MORE INFORMATION CLICK HERE](#)



## APPLICATIONS

This equipment can be used in any industry considered to have an explosive atmosphere in dust or gas places. Some examples of these can be oil & gas, chemical, petrol chemical, petrol, offshore industries,...



## TECHNICAL FEATURES

- The Ex motor protection rated voltage is 400V, and the rated current up to 25A.
- It has two temperature ranges for its use, which gives it a higher versatility.
  - $-20^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$
  - $-20^{\circ}\text{C} \leq T_a \leq 40^{\circ}\text{C}$
- The joint between the cover and body, is designed to secure an IP66 degree protection. The selector has an IP65 degree protection.
- It includes two cable glands with “Ex e” protection in M25 nickel plated brass or in stainless steel.
- It has four wall brackets, enabling placement on a wall.
- It is considered to give “Ex e” and “Ex d” protection, for use in zones 1, 2, 21 and 22 with explosive atmospheres with dust and gas.

## OPTIONS

- We have two types of enclosures:
  - Screw closure (Geoex)
  - Hinged closure (Luxorex)
- Low voltage auto trip which switches off the motor if there is a fall in voltage.
- Auxiliary contact normally closed and normally opened.
- We recommend adding an ammeter to check the current inside the circuit.
- Box made in AISI 316L stainless steel for marine or highly corrosive places.
- Possibility of using it at low temperatures  $-25^{\circ}\text{C}$  with IIB gas group.
- Cable glands available in any size and thread.

## ADVANTAGES

- A really important advantage of using this device, is that it can work with a lower temperature than the ranges say, enabling work, in many unfavourable places, with  $-25^{\circ}\text{C}$  in gas group IIB.
- This Ex motor protection’s design avoids placing a fuse to protect the electrical supply against short-circuits or over loads.
- Thanks to this device, the motor’s useful life is longer, because it’s protected against many electrical problems.
- The enclosure can be manufactured in AISI 316L stainless steel.

## PROTECTION MODE

This equipment is certified for use in potentially explosive atmospheres in 1, 2, 21 and 22 zones and it has a protection “Ex e” and “Ex d”.

Atex mark:

- II2G Ex d e IICT6/T5 Gb
- II2D Ex tb IICT85°C /T100°C Db
- Certificate number: LOM14ATEX2082

- Certificate number: LOM17ATEX1011

IECEX mark

- Ex d e IICT6/T5 Gb
- Ex tb IICT85°C /T100°C Db
- Certificate number: EX/LOM/IECEX



## REGULATIONS

Atex directive and regulation:

- Atex directive 2014/34/EU
- EN 60079-0:2012
- EN 60079-1:2007
- EN 60079-7:2015
- EN 60079-31:2010

IECEX regulation:

- IEC 60079-0:2011
- IEC 60079-1:2006

- IEC 60079-7:2015

- IEC 60079-31:2013

Cupboard regulation:

- Norma IP IEC 60529
- Norma IK IEC 62262

Low voltage directive and regulation:

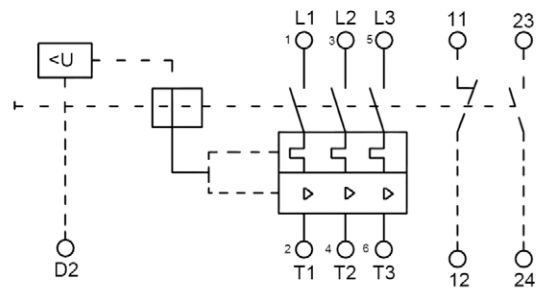
- Directive 2014/35/UE
- EN 61439-1:2011
- EN 61439-2:2011

**WITHOUT AMMETER**

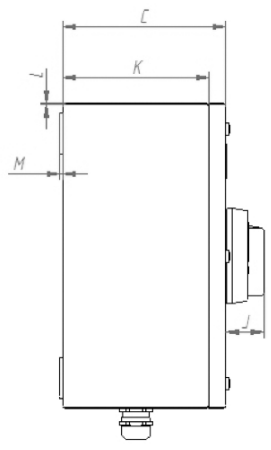
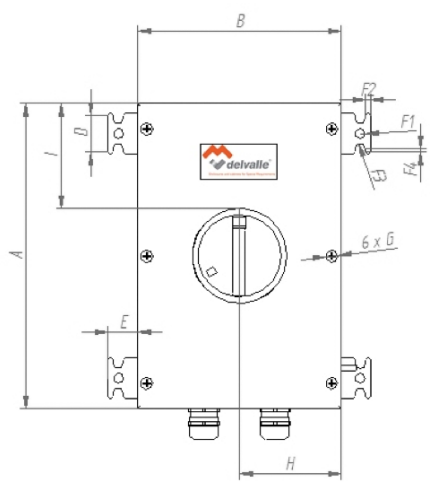
**ELECTRIC DIAGRAM**

**10**  
YEARS  
GUARANTEE  
STAINLESS  
ANTICORROSIVE

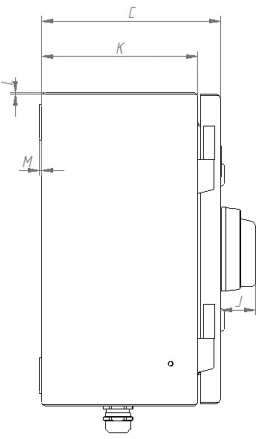
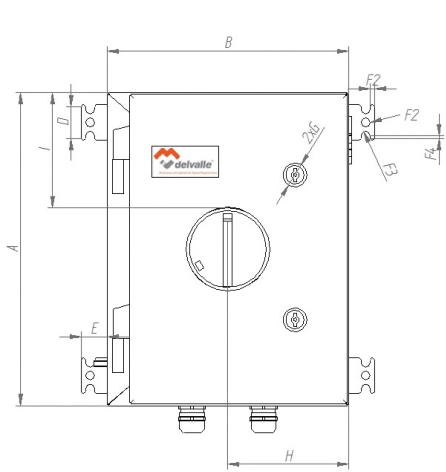
**5**  
YEARS  
GUARANTEE  
MECHANICAL  
PARTS



**BLUEPRINT AND DIMENSIONS**



Model Geoex without ammeter



Model Luxorex without ammeter

**MOTOR STARTER WITHOUT AMMETER - DIMENSIONS (MM)**

	A	B	C	D	E	F1	F2	F3	F4	G	H	I	J	K	L	M
GEOEX	300	200	160	36	29	R5	5	R5	3,5	R6	100	103	37,8	144	1,2	3
LUXOREX	350	270	200	36	29	R5	5	R5	3,5	R13,5	135	128	37,8	174	1,5	3

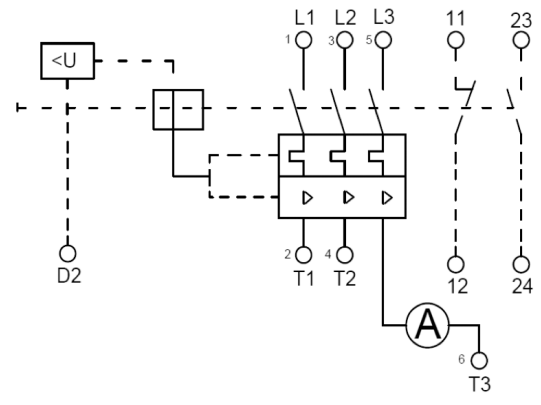


**WITH AMMETER**

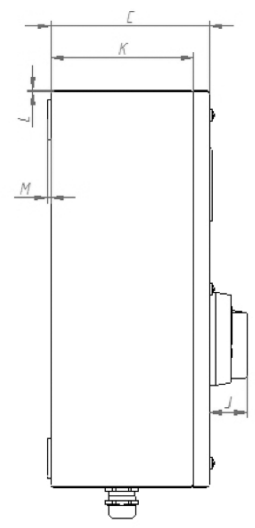
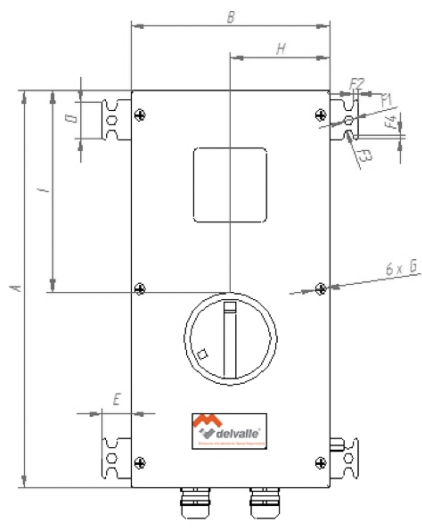
**ELECTRIC DIAGRAM**

**10 YEARS GUARANTEE**  
STAINLESS ANTICORROSIVE

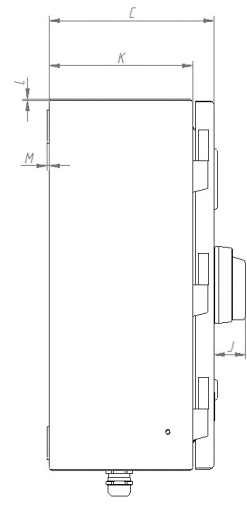
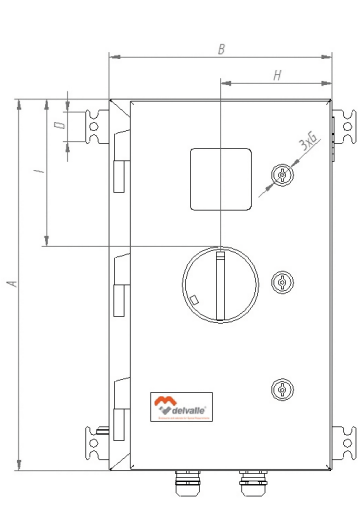
**5 YEARS GUARANTEE**  
MECHANICAL PARTS



**BLUEPRINT AND DIMENSIONS**



Model Geoex with ammeter



Model Luxorex with ammeter

**MOTOR STARTER WITH AMMETER - DIMENSIONS (MM)**

	A	B	C	D	E	F1	F2	F3	F4	G	H	I	J	K	L	M
GEOEX	400	200	160	36	29	R5	5	R5	3,5	R6	100	203	37,4	144	1,2	3
LUXOREX	450	270	200	36	26	R5	5	R5	3,5	R13,5	135	178	37,4	174	1,5	3



## REFERENCES

This motor protection includes some possibilities and as consequence of this we have created the next table to know the equipment's code.

TYPE	RATED ON-OFF CAPACITY (KA)	SETTING RANGE OF OVER LOAD TRIP (A)	LOW VOLTAGE AUTO TRIP	AUXILIARY CONTACT I NO + I NC	AMMETER	EX
	To chose one	The maximum one must be chosen	To write it if u want this	To write it if u want this	To write it if u want this	
CSMP	65	0.1-0.16 0.16-0.25 0.25-0.4 0.4-0.63 0.63-1 1-1.6 1.6-2.5				EX
	16	2.5-4 4-6.3 6.3-10 16-10	T	NONC	A	
	12	16-20 20-25				

### EXAMPLE GEOEX

Motor protection Geoex with 16 rated capacity, with 4-6.3 range of over load, without auto trip but with auxiliary contact and ammeter

CODE

CSMP/16/6.3-NONC-A-EX

### EXAMPLE LUXOREX

Motor protection Luxorex with 65 rated capacity, with 1-1.6 range of over load, without auto trip but with auxiliary contact and ammeter

CODE

CSMP/65/1.6-NONC-A-EX-P



Zones 1, 2, 21 and 22

## MAGNETIC MOTOR STARTERS WITH MOTOR PROTECTION

**ATEX & IECEx** IP65

### Security, Reliability and Durable



Example screw closure (Geoex)



Example hinged closure (Luxorex)

➔ [FOR MORE INFORMATION CLICK HERE](#)

This ATEX & IECEx magnetic motor starter's main purpose is to control on and off switching for an Ex motor, and also to guarantee a reliable protection against electrical problems which could be present.

This device has the following components:

- Internal components
  - Motor protection: keeps the motor free of damage after any electrical problem such as short circuits, overloads and phase failures.
  - Contactor: enables the motor to work, allowing the current flow birching.
- Control components
  - Selector switch: switches the motor protection on and off, and at the same time allows or blocks the current going to the contactor.
  - Double button: allows the current to go through the contactor in the ON position (I) and block the current in the OFF position (0).

The Ex magnetic motor starter is secure, reliable and strong. Its components are protected by a stainless steel AISI 304 ATEX enclosure, specially designed, antirust, waterproof and with IP66 protection. It has a protection "Ex e" and "Ex d" allowing its use in zones with high explosion risk, outdoors and is antirust.

We have two types of closures:

- Screw closure (Geoex)
- Hinged closure (Luxorex)

## ADVANTAGES

- Fast switch off when there is an overload.
- Avoids using fuses thanks to motor protection when switching on.
- Longer useful life thanks to the motor protection.
- Easy assembly.
- Possible to get the coil with low voltages, controlling high capacity motors with a low voltage circuit.
- Possibility of manufacturing the Atex & IECEx starter in stainless steel AISI 316L.



## OPTIONS

- We have two types of closures:
  - Screw closure (Geoex)
  - Hinged closure (Luxorex)
- To protect the motor against drops in damaged tension, an auto trip can be added to shut the motor down.
- You can choose the range of over load motor protection, voltage of AC contactor and power, to assure the kind of magnetic starter you want.
- The voltage of the AC contactor can be: 24, 36 48, 110, 220-230 and 380-400V, but the most used one is 220-230V.
- The enclosure can be manufactured in stainless steel AISI 316L for marine and highly corrosive places.
- Cable glands available in any size and thread and made in stainless steel.

## TECHNICAL FEATURES

The max. rated voltage motor starter is 400V and the max. rated current 25A.

The power for which this Atex & IECEx starter is designed is in a range 4-11 kW.

It can work in two temperature ranges, which give it a higher use capacity.

- $-20^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$
- $-20^{\circ}\text{C} \leq T_a \leq 40^{\circ}\text{C}$

The Ex enclosure has:

- The joint between the cover and body, designed to secure a really high degree of protection IP66.
- The selector switch considered as IP65 protection.
- A protection "Ex e" and "Ex d", for use in 1, 2, 21 and 22 zones, and potentially explosive atmospheres.
- Three cable glands in nickel plated brass with "Ex e" protection in M25 included.

## PROTECTION MODE

This equipment is certified for use in potentially explosive atmospheres in 1, 2, 21 and 22 zones.

Atex marking:

- II2G Ex d e IICT6/T5 Gb
- II2D Ex tb IIIC T85°C /T100°C Db

- Certificate number: LOM14ATEX2082
- Certificate number: LOM17ATEX1011

IECEX marking:

- Ex d e IICT6/T5 Gb
- Ex tb IIIC T85°C/T100°C Db
- Certificate number: EX/LOM/IECEX

## REGULATIONS

Atex directive and regulation:

- Atex directive 2014/34/EU
- EN 60079-0:2012
- EN 60079-1:2007
- EN 60079-7:2015
- EN 60079-31:2010

IECEX regulation:

- IEC 60079-0:2011
- IEC 60079-1:2006

- IEC 60079-7:2015
- IEC 60079-31:2013

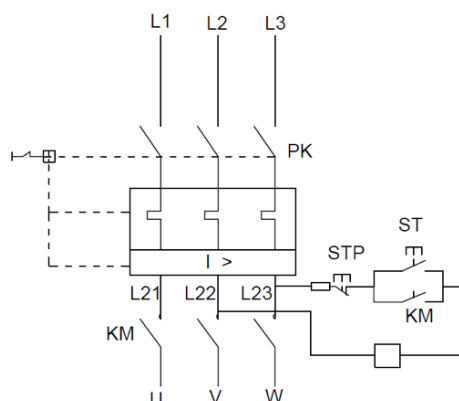
Enclosure regulation:

- IP regulation (IP65): IEC 60529
- IK regulation (IK10): IEC 62262

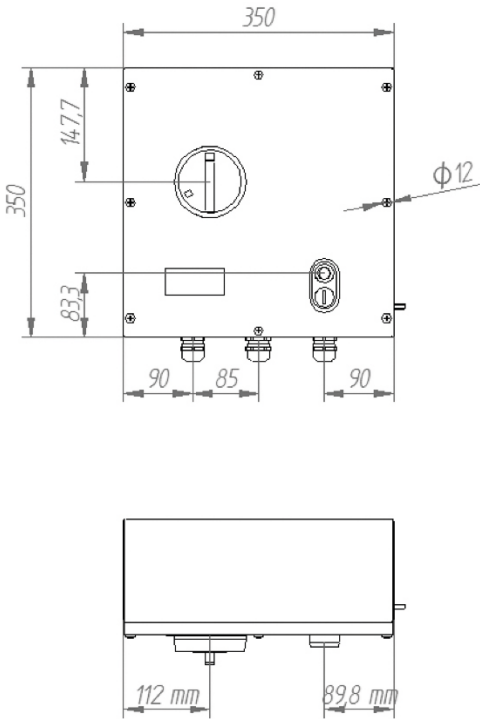
Low voltage directive and regulation:

- Directive 2014/35/EU
- EN 61439-1:2011
- EN 61439-2:2011

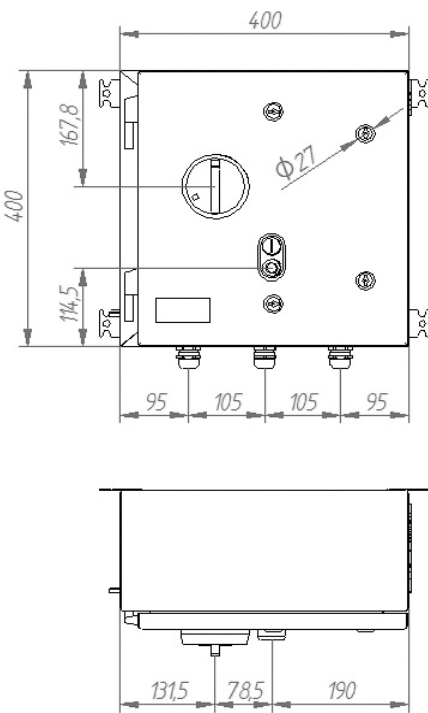
## ELECTRICAL DIAGRAM



**BLUEPRINT AND DIMENSIONS GEOEX**



**BLUEPRINT AND DIMENSIONS LUXOREX**





## REFERENCES

This motor protection includes several possibilities thus we have created the following table to see the equipment's code.

TYPE	RANGE OF OVER LOAD OF MOTOR PROTECTION (A)	CURRENT OF CONTACTOR (A)	POWER (kW)	VOLTAGE OF AC CONTACTOR COIL (V)	LOW VOLTAGE AUTO TRIP	EX
MG	To choose one and to write the highest number	To choose one	To choose one	To choose one. To write the highest number in the two lasts cases	Write it if u want the auto trip	
	6.3-10 10-16 10-16 20-25	12 25 25 25	4 5.5 7.5 11	24 36 48 110 220-230 380-400	U	
	These three are associated if u choose one u know what are the other:					

<b>EXAMPLE GEOEX</b>	Magnetic starter Geoex with 7.5W power, 380-400V voltage of AC contactor and without auto trip.
----------------------	---

CODE	MG/16/25-7.5-400-EX
------	---------------------

<b>EXAMPLE LUXOREX</b>	Magnetic starter Luxorex with 7.5W power, 380-400V voltage of AC contactor and without auto trip.
------------------------	---

CODE	MG/16/25-7.5-400-EX-P
------	-----------------------



Zones 1, 2, 21 and 22

# MAGNETIC MOTOR STARTERS WITH THERMAL RELAY

## ATEX & IECEX IP66

### Security, Possibilities and Continuity



Example screw closure (Geoex)



Example hinged closure (Luxorex)

➔ [FOR MORE INFORMATION CLICK HERE](#)

This Ex motor magnetic starter has been designed to guarantee the correct operation and the protection of electric motors in high explosion risk areas.

It's used to control the electric motor's on and off switching and to protect it against overloads thanks to the thermal relay.

The device has the following components:

- Internal components:
  - Contactor: allows or blocks the current going through the circuit.
  - Thermal relay: switches off the circuit when the current used by the motor is higher than the current allowed, so avoiding the motor coil getting burned.
- Besides the control components, there is a double button on the cover, whose function is switching on the motor in the ON position (1) and off in the OFF position (0).

The Ex motor starter components, are protected inside an ATEX & IECEx enclosure, made of stainless steel AISI 304L. This enclosure has a specific design, being rustproof and with IP66 protection. It has a protection "Ex e" and "Ex d", enabling its use in zones with high explosion risk outdoors and open to rust.

We have two types of closures:

- Screw closure (Geoex)
- Hinged closure (Luxorex)

## ADVANTAGES

- This Ex motor starter allows a faster switching on after a thermal relay trip.
- It has a longer life thanks to the thermal relay, which avoids sudden motor cut offs and machine stops.
- It's coil is available with low voltages, controlling high capacity motors with a low tension circuit.
- There are many voltage and current possibilities for the Ex motor starter to choose from.
- It can be manufactured with AISI 316L.

## OPTIONS

- We have two types of closures:
  - Screw closure (Geoex)
  - Hinged closure (Luxorex)
- The rated current of AC contactor can be chosen between: 12, 25 and 38A.
- The coil service voltage is between: 24, 36, 48, 110, 220-230 and 380-400V.
- The setting range of the thermo relay is really wide: 0.1-0.16, 0.16-0.25, 0.24-0.4, 0.4-0.63, 0.63-1, 1-1.6, 1.6-2.5, 2.4-4, 4-6, 5.5-8, 7-10, 9-13, 12-18, 16-24, 23-32 y 30-38A.
- The enclosure can be manufactured in stainless steel AISI 316L for marine or highly corrosive places.
- Cable glands available in any size and thread and can be of stainless steel.

## TECHNICAL FEATURES

The rated voltage is 690V and the rated current 38A.

The contactor's rated voltage is 690V and the rated current is 38A. The thermal relay's rated voltage and current are the same as the contactor ones (so the starter rated voltage is 690V and the rated current 38A).

The power for which the Ex motor starter has been designed is between 4 and 18.5 kW.

It can work between two temperature ranges, giving it a higher use capacity.

- $-20^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$
- $-20^{\circ}\text{C} \leq T_a \leq 40^{\circ}\text{C}$

Regarding the enclosure:

- The joint between the cover and body, is to secure a really high degree of protection IP66.
- It has an "Ex e" and "Ex d" protection, to use in zones 1, 2, 21 and 22 with explosive atmospheres with dust and gas.
- It includes three cable glands in nickel plated brass with "Ex e" in M25.
- It is considered to give "Ex e" and "Ex d" protection, for use in zones 1, 2, 21 and 22 with explosive atmospheres with dust and gas.

# MAGNETIC MOTOR STARTERS WITH THERMAL RELAY **ATEX & IECEX** IP66

## PROTECTION MODE

This equipment is certified for use in potentially explosive atmospheres in I, 2, 21 and 22 zones.

Atex mark:

- II2G Ex d e IICT6/T5 Gb
- II2D Ex tb IIIC T85°C /T I100°C Db
- Certificate number: LOMI4ATEX2082

- Certificate number: LOM I7ATEX1011

IECEX mark:

- Ex d e IICT6/T5 Gb
- Ex tb IIIC T85°C/T I100°C Db
- Certificate number: EX/LOM/IECEX



## REGULATIONS

Atex directive and regulation:

- Atex directive 2014/34/EU
- EN 60079-0:2012
- EN 60079-1:2007
- EN 60079-7:2015
- EN 60079-31:2010

IECEX regulation:

- IEC 60079-0:2011
- IEC 60079-1:2006

- IEC 60079-7:2015
- IEC 60079-31:2013

Enclosure regulation:

- IP regulation (IP65): IEC 60529
- IK regulation (IK10): IEC 62262

Low voltage directive and regulation:

- Directive 2014/35/EU
- EN 61439-1:2011
- EN 61439-2:2011

# MAGNETIC MOTOR STARTER WITH THERMAL RELAY **ATEX & IECEX** IP66

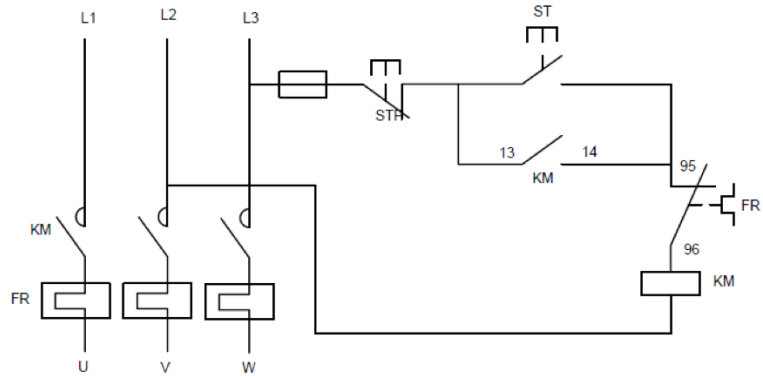
## ELECTRICAL DIAGRAM



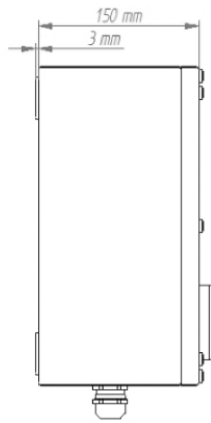
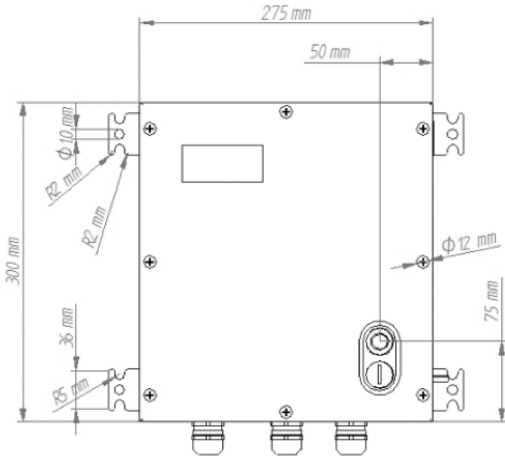
STAINLESS ANTICORROSIVE



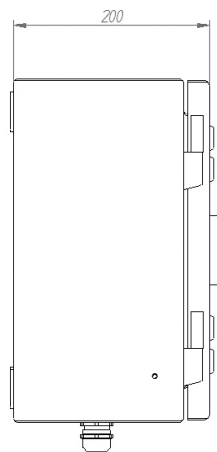
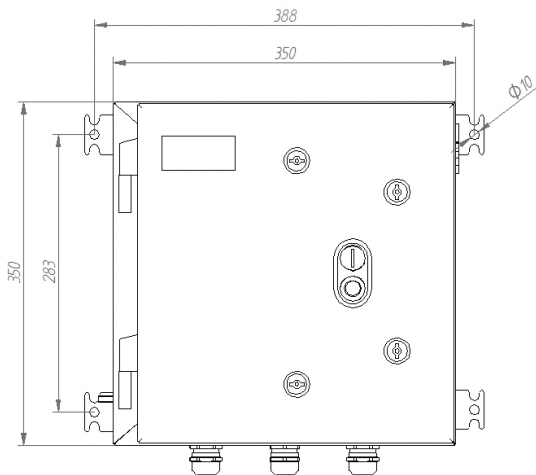
MECHANICAL PARTS



## BLUEPRINT AND DIMENSIONS GEOEX



## BLUEPRINT AND DIMENSIONS LUXOREX



# MAGNETIC MOTOR STARTER WITH THERMAL RELAY **ATEX & IECEX** IP66

## REFERENCES

This magnetic motor starter includes several possibilities and as consequence of this we have created the bellow table to know the equipment's code.

TYPE	SETTING RANGE OF OVER LOAD TRIP (A)	POWER(KW)	VOLTAGE OF AC CONTACTOR COIL (V)	EX
MS	Choose one and write the highest number		Choose one. In case of two write the highest number	EX
	7-10 9-13 12-18 16-24 23-32 30-38	4 5.5 7.5 11 15 18.5	24 36 48 110 220-230 380-400	
	Choosing one the other is known automatically			

### EXAMPLE GEOEX

Magnetic starter with thermal relay Geoex 16-24A,  
380-400V voltage of AC contactor.

CODE

MS/24/11-400-EX

### EXAMPLE LUXOREX

Magnetic starter with thermal relay Luxorex 23-32A,  
380-400V voltage of AC contactor.

CODE

MS/32/15-400-EX-P





Zones 1, 2, 21 and 22

## INVERTER MOTOR STARTERS **ATEX & IECEX** IP66



Example screw closure (Geoex)



Example hinged closure (Luxorex)

### Security and Strength for your Motors in Explosives Atmospheres

The inverter motor starter Atex & IECEX has been designed to invert the turn of motor with guarantee and protection in high explosion risk zones.

It's used to control the electric motor switching, with two turns for switching on and off, besides protecting it against overloads thanks to the thermal relay.

This is achieved with two phase contactors and a thermal relay to protect the starting power peak.

The Ex motor starter components, are protected inside an Atex & IECEX enclosure, IP66 made with stainless steel 304L.

This enclosure has a specific design, being rustproof and with IP66 protection. It has a protection "Ex e" and "Ex d", so enabling its use in zones with high explosion risk outdoor and open to rust.

We have two types of closures:

- Screw closure (Geoex)
- Hinged closure (Luxorex)

➔ [FOR MORE INFORMATION CLICK HERE](#)

## TECHNICAL FEATURES

The rated voltage is 690V and the rated current is from 12A to 38A.

The power for which the Ex motor starter has been designed is between 4 and 18.5 kW.

It can work between two temperature ranges, which give it a higher use capacity.

- $-20^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$
- $-20^{\circ}\text{C} \leq T_a \leq 40^{\circ}\text{C}$

Regarding the enclosure ATEX & IECEx :

- The joint between the cover and body, is designed to secure a really high degree protection IP66.
- It has an "Ex e" protection, to use it in zones 1, 2, 21 and 22 with explosive atmospheres with dust and gas.
- It includes three cable glands in nickel plated brass with "Ex e" in M25.



## OPTIONS

- We have two types of closures:
  - Screw closure (Geoex)
  - Hinged closure (Luxorex)
- The rated current of AC contactor can be chosen between: 12, 25 and 38A.
- The coil service voltage is between: 24, 36, 48, 110, 220-230 and 380-400V.
- The setting range of thermo relay is really large: 7-10, 9-13, 12-18, 16-24, 23-32 y 30-38A.
- The enclosure can be manufactured in stainless steel AISI 316L for marine or highly corrosive places.
- Cable glands available in any size and thread and they can be in stainless steel.
- Possibility of different configurations, with indicator lights, emergency mushrooms...

## ADVANTAGES

- Selecting the motor turn safely.
- This Ex motor starter allows a faster switching on after a thermal relay trip.
- It has a longer use thanks to the thermal relay, which avoids sudden motor stops and therefore machine stops.
- It's possible to get the coil with low voltages, controlling high capacity motors with a low tension circuit.
- There are so many voltage and current possibilities to choose from Ex motor starter: 12A to 38A.
- It can be manufactured with AISI 316L for marine atmospheres.
- Great versatility and possibilities.

## PROTECTION MODE

This equipment is certified for use in potentially explosive atmospheres in 1, 2, 21 and 22 zones and it has a protection "Ex e" and "Ex d".

Atex mark:

- II2G Ex d e IICT6/T5 Gb
- II2D Ex tb IIIC T85°C /T100°C Db

- Certificate number: LOM I4ATEX2082
- Certificate number: LOM I7ATEX1011

IECEX mark:

- Ex d e IICT6/T5 Gb
- Ex tb IIIC T85°C/T100°C Db
- Certificate number: EX/LOM/IECEX



## REGULATIONS

Atex directive and regulations:

- Directive Atex 2014/34/EU
- EN 60079-0:2012
- EN 60079-1:2007
- EN 60079-7:2015
- EN 60079-31:2010

IECEX regulations:

- IEC 60079-0:2011
- IEC 60079-1:2006

- IEC 60079-7:2015
- IEC 60079-31:2013

Enclosure regulation:

- Norme IP IEC 60529
- Norme IK IEC 62262

Low voltage directive and regulation:

- Directive 2014/35/UE
- EN 61439-1:2011
- EN 61439-2:2011

# INVERTER MOTOR STARTERS **ATEX & IECEX** IP66

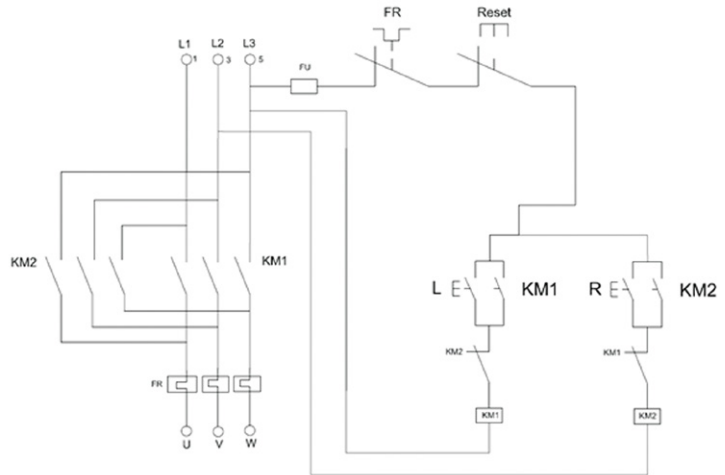
## ELECTRIC DIAGRAM



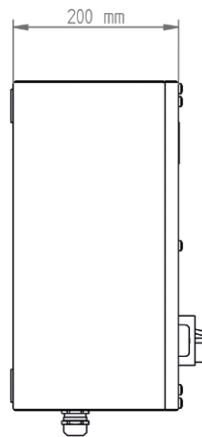
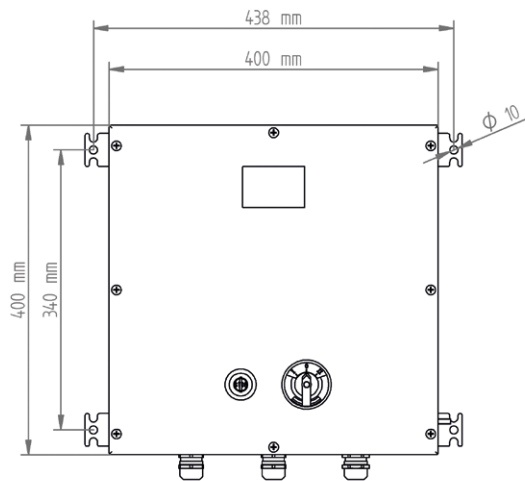
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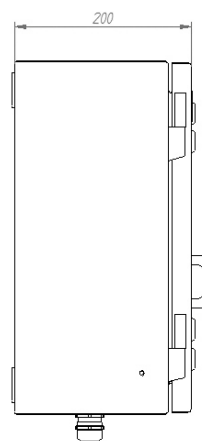
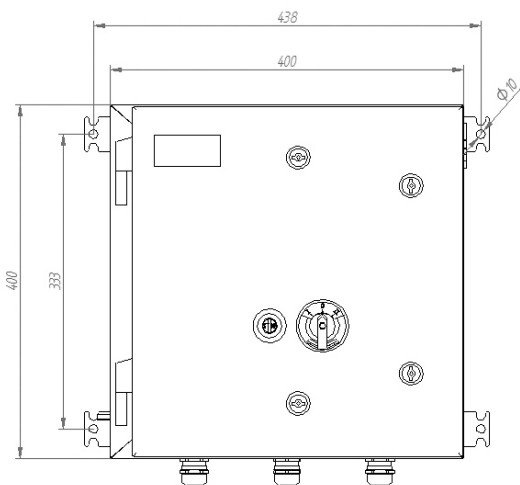
MECHANICAL PARTS



## BLUEPRINT AND DIMENSIONS GEOEX



## BLUEPRINT AND DIMENSIONS LUXOREX



# INVERTER MOTOR STARTERS **ATEX & IECEX** IP66

## REFERENCES

This magnetic motor starter includes some possibilities and as consequence of this we have created the next table to know the equipment's code.

TYPE	SETTING RANGE OF OVER LOAD TRIP (A)	POWER (KW)	COIL SERVICE VOLTAGE (VAC)	EX
MSI	Choose one and write the highest number		Choose one. In case of two write the highest number	EX
	7-10	4	24	
	9-13	5,5	36	
	12-18	7,5	48	
	16-24	11	110	
	23-32	15	220-230	
	30-38	18,5	380-400	

### EXAMPLE GEOEX

Inverter motor starter Geoex 16-24A and 220-230V voltage

CODE

MSI/24/230-EX

### EXAMPLE LUXOREX

Inverter motor starter Luxorex 23-32A and 220-230V voltage

CODE

MSI/32/230-EX-P



Zones 1, 2, 21 and 22

# EX STAR TRIANGLE MOTOR STARTERS IP66



Example screw closure (Geoex)



Example hinged closure (Luxorex)

## Used to Reduce the Peak Start Current in the Induction Ex Motors

The Atex & IECEx star-triangle motor starter has been designed for optimum performance at start-up.

This start-up mode is used to reduce the peak start current in the induction ex motors, which can damage the network and / or other receivers during the acceleration period of the machine.

The peak current, in direct connection, can reach 5 to 6 times the nominal motor current. With this method, the starting current will be reduced by 1/3 of the rated current and therefore there will be no danger of any component being damaged.

The Ex components of the Atex & IECEx motor starter are protected inside an Atex & IECEx enclosure, made of 304L stainless steel.

The enclosure has a specific design, being watertight, anticorrosive and with an IP66 protection. Achieving "Ex e" and "Ex d" protection, allowing its use in areas with a high risk of explosion.

➔ [FOR MORE INFORMATION CLICK HERE](#)



## TECHNICAL CHARACTERISTICS

The maximum rated voltage of the Atex & IECEx motor starter is 690V and the rated current is from 12A to 38A.

The power for which the Atex magnetic starter is designed is between 4 and 18.5 kW.

It is able to work between two temperature ranges to give it greater versatility:

- $-20^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$
- $-20^{\circ}\text{C} \leq T_a \leq 40^{\circ}\text{C}$

Regarding the Atex & IECEx enclosure that surrounds it:

- The connection between the body and the cover is designed to ensure minimum IP66 protection.
- It has "Ex e" protection suitable for areas with explosive gas and dust atmospheres 1, 2, 21 and 22.
- Includes three Ex cable glands with "Ex e" protection made of nickel-plated brass or stainless steel from M25.
- It has "Ex e" and "Ex d" protection, suitable for zones 1, 2, 21 and 22, with explosive atmospheres of gas and dust.

## OPTIONS

- We have two types of closures:
  - Screw closure (Geoex)
  - Hinged closure (Luxorex)
- The rated current of the Ex contactors is selectable between: 12, 25 and 38A.
- The control voltage has several options: 24, 36, 48, 110, 220-230 and 380-400V.
- The capacity range of the thermal relay is selectable between: 7-10, 9-13, 12-18, 16-24, 23-32 and 30-38A.
- The Ex enclosure can be made of AISI 316L stainless steel.
- Atex cable gland of any size and thread in nickel plated brass & stainless steel.
- Possibility of different ex configurations, with indicator lights, emergency mushroom...



## ADVANTAGES

- Reduction of Ex motor starting current, avoiding high voltage drop in the main supply system.
- It avoids interferences in equipment installed in the distribution system (network).
- Reduced cost in the protection system (cables, contactors), avoiding excessive oversizing.
- It allows adapting to the limitations imposed by the rules of distribution of electric power, in terms of voltage drop in the network.
- Suitable for loads requiring small starting force / pressure.
- Possibility of manufacturing of the enclosure in AISI 316L stainless steel for highly corrosive & marine environments.
- Great versatility and possibilities.
- Unique monobloc enclosure system that achieves perfect sealing and impact resistance. With pre-assembled body and door, and minimum welding.

# EX STAR TRIANGLE MOTOR STARTER IP66

## PROTECTION MODE

It is certified for use in potentially explosive atmospheres of zones 1, 2, 21 and 22 and has an "Ex e" and "Ex d".

Atex marking:

- II2G Ex d e IICT6 Gb
- II2D Ex tb IIIC T85°C Db

- Certificate number: LOM I4ATEX2082
  - Certificate number: LOM I7ATEX1011
- IECEX marking:

- Ex d e IICT6 Gb
- Ex tb IIIC T85°C Db
- Certificate number: EX/LOM/IECEX

## REGULATIONS

Atex directive and normative:

- Directiva Atex 2014/34/EU
- EN 60079-0:2012
- EN 60079-1:2007
- EN 60079-7:2015
- EN 60079-31:2010

- IEC 60079-7:2015
- IEC 60079-31:2013

Enclosure normative:

- Norme IP66 IEC 60529
- Norme IK10 IEC 62262

IECEX normative:

- IEC 60079-0:2011
- IEC 60079-1:2006

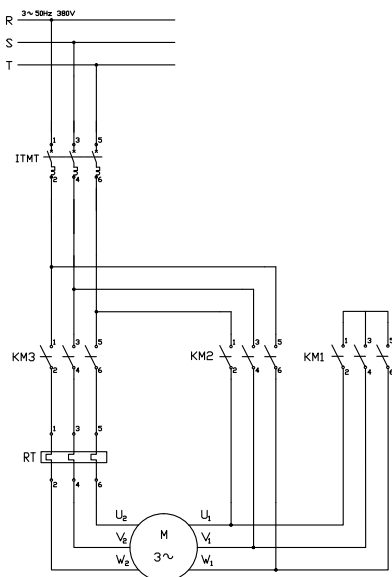
Low voltage directive and normative:

- Directiva de 2014/35/UE
- EN 61439-1:2011
- EN 61439-2:2011

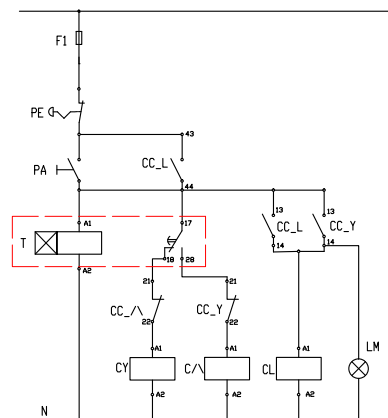
## ELECTRIC DIAGRAM

The Ex star-triangle motor starter consists of two independent circuits, on one side is the power circuit and on the other the control circuit.

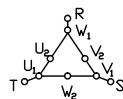
- Power circuit



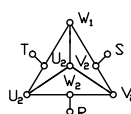
- Control circuit



Slow gear

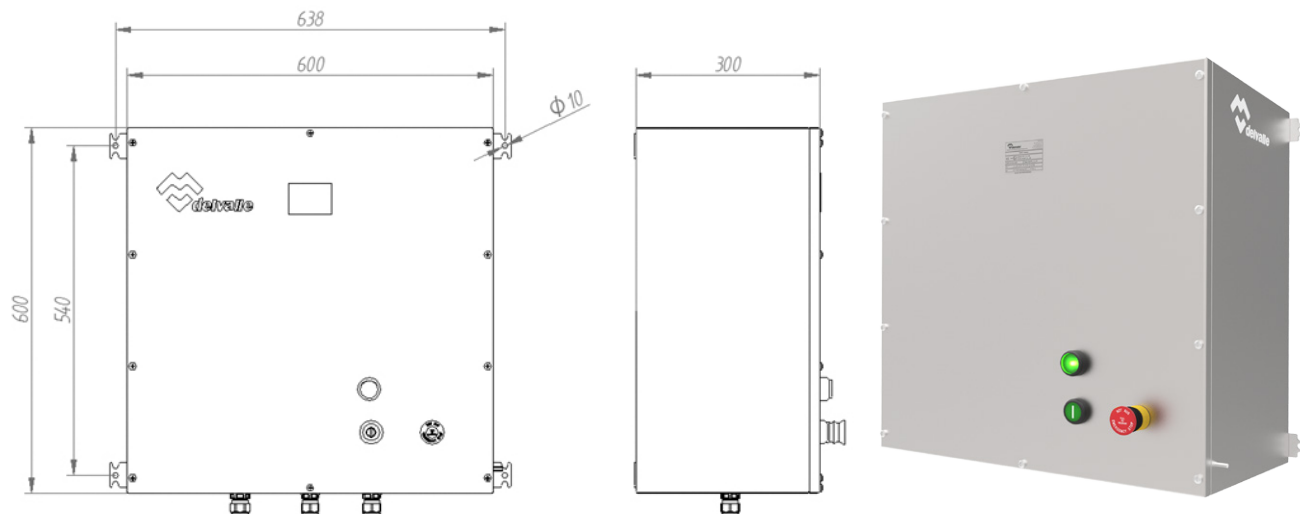


Fast gear



# EX STAR TRIANGLE MOTOR STARTER IP66

## BLUEPRINT AND DIMENSIONS GEOEX



**10**  
YEARS  
GUARANTEE

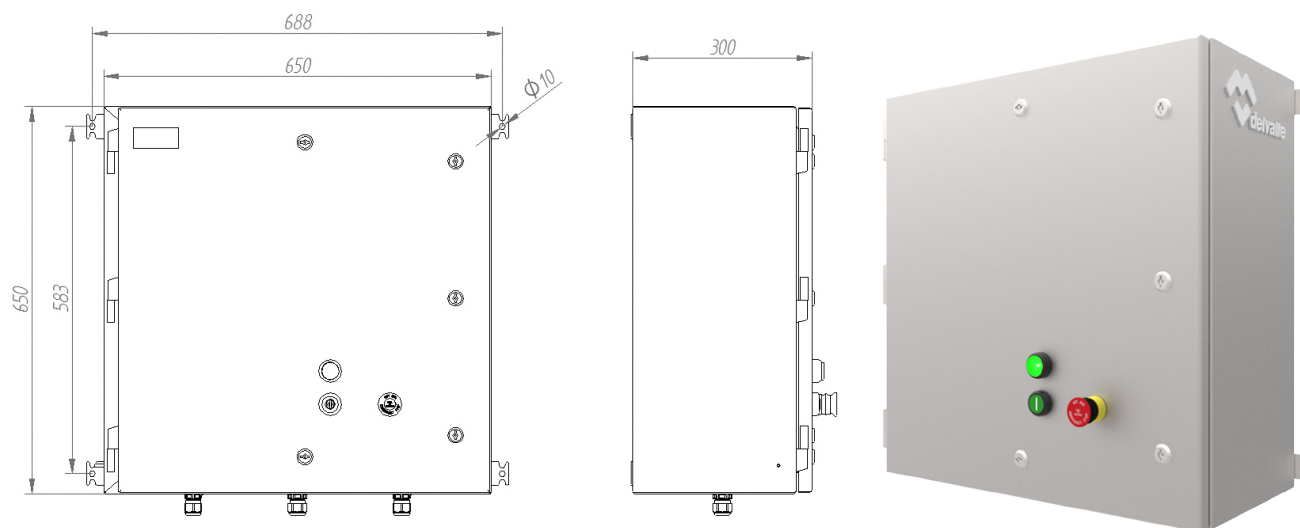
STAINLESS  
ANTICORROSIVE

**5**  
YEARS  
GUARANTEE

MECHANICAL  
PARTS



## BLUEPRINT AND DIMENSIONS LUXOREX



# EX STAR TRIANGLE MOTOR STARTER IP66

## REFERENCES

This table has been created to know the reference of the desired product with the chosen characteristics:

TYPE	THERMAL RELAY RANGE (A)	CONTACTOR CURRENT (A)	POWER (KW)	CONTROL VOLTAGE (VAC)	EX
MSD	Choose one and write the highest number			Choose one. In case of two write the highest number	EX
	7-10	12	4	24	
	9-13	25	5,5	36	
	12-18		7,5	48	
	16-24		11	110	
	23-32	38	15	220 - 230	
	30-38		18,5	380 - 400	

### EXAMPLE GEOEX

Star-triangle starter Geoex with a range of 12-18A and a control voltage of 220-230Vac

CODE

MSD/18/230-EX

### EXAMPLE LUXOREX

Star-triangle starter Luxorex with a range of 23-32A and a control voltage of 220-230Vac

CODE

MSD/32/230-EX-P

# SOLUTIONS FOR HAZARDOUS AREA



With over 50 years of experience in design, manufacture and supply of electrical high quality Atex & IECEX solutions

Atex Delvalle adapts to our clients' needs by offering Hazardous Area enclosures and boxes on demand. They are adapted to your specific requirements of installation and assembly, up to the last detail.

Atex Delvalle designs and manufactures a range of Hazardous Area enclosures; junction and terminal boxes, pressurized, flameproof Ex d and increased Safety Ex e Atex & IECEX compliant enclosures.



ATEX CABLE GLANDS



MOTOR STARTER & LOAD DISCONNECT SWITCHES



ATEX TERMINAL & JUNCTION BOXES



ATEX LIGHTING FIXTURE

## HMI INDUSTRIAL PANELS WORKSTATIONS



### FLAMEPROOF ENCLOSURES & PULLING BOXES



### CONTROL STATIONS & DISTRIBUTION BOXES

Atex control boxes (Contrex Series), they are specially designed to perform checks, maneuvers and as actuators in explosive atmospheres. They have a rugged, corrosion system and finished in stainless steel or GRP polyester. It allows you to perform maneuvers and controls at the machine in hazardous areas and take programming and automation in a safe area. Offering customers a great combination of possibilities and flexibility. Select the component that best suits your operator panels, keypads, mushrooms, switches, ammeters... and you assemble all with Atex certified, Ex & IECEx and UL.



### ENCLOSURES FOR CORROSION ENVIRONMENTS

### PRESSURIZED PANELS & ATEX PURGE







## **HAZARDOUS AREA SOLUTIONS ATEX E IECEx**



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**Contact us, we will be available at any time**