



COMPANY WITH  
QUALITY SYSTEM  
CERTIFIED BY DNV  
ISO 9001



## INSTRUCTION AND MAINTENANCE MANUAL

### HELIX LEVELCONTROL FOR SOLIDS MOD. "SE-ATEX"



**Manual Purpose**

This manual has been designed by the Manufacturer to provide the necessary information regarding the instrument to those who are authorized to carry out safely its installation, maintenance, dismantling and disposal. All the necessary information for the buyers and planners can be found in the Sales catalogue.

Other than adopting good technical construction methods, the information should be read carefully and strictly applied. Inobservance of this information could cause risks for the health and safety of people and economical damage.

This information, provided by the Manufacturer in the original language (Italian language) is also available in other languages to satisfy legislative and/or commercial needs.

This manual must be kept in a good condition by a responsible person in an ideal place so that it is always available for consultation. In case this manual is lost or deteriorates, a replacement should be requested directly from the manufacturer quoting the manual's code.

This manual reflects the state of skill of the instrument at the time of input on the market: however the manufacturer reserves the right to make changes, add or improve the manual without giving any reason to hold the present manual inadequate.

**Identification of the equipment**

The identification plate is applied on the cover of the instrument:

On it are carried out all the necessary indication for working in safety.

**Environmental conditions**

Process temperature from -15°C to 80°C (inside the tank or silo, **zone 20**).

Environmental temperature from -15°C to 60°C (outside the tank or silo, **zone 21**).

**Storage**

Avoid areas with excessive moisture and exposed to weather (excluding outdoor areas). Avoid direct contact of the tool with the ground. Stack the tool being careful not to gravity with excessive loads. It is leading you to the proper functioning of the instruments and for the maintenance of mechanical protection, care in handling. It is forbidden to strike the instrument with tools like hammers or similar.

**Conformity declaration and EC marking**

The indicator answers to the following Communitarian Directives:

2014/34/UE Equipment and protective system intended for use in potentially explosive atmospheres (ATEX).

Marking: 2460 II 1/2 D Ex ta IIIC T95°C IP65 -15°C < Ta < +60°C. Utilization in zone 20 and zone 21, protection mode with case, max superficial temperature 95°C, environmental temperature from -15°C to 60°C. Certificate n. DNV-MUN00496.ATEX.07/3316 Notification number: Presafe 15 ATEX 187658Q. 2014/30/UE Electromagnetic compatibility .

**Control, maintenance, technical servicing**

The instrument does not need a periodic setting but needs a control of good functioning at last every year.

Verify the intact of case, the mobility of helix, the general functioning.

Do not open the case in potentially dangerous atmosphere.

Avoid that layer of dust higher then 50mm settled on the instrument.

The instrument does not need a particular maintenance except cleaning, that has to be carried out by using a soft, damp, cloth with ethyl alcohol or water. Do not use hydrocarbon solvents (trichloroethylene, petrol, diluents, etc.). Reparations should be done only and exclusively at the FIAMA technical assistance centre. For any technical assistance turn the request direct to the sell-net of manufacturer indicating the references on the identification plate, the approx. working hours, and type damage.

**Manufacturer's responsibility**

The manufacturer declines any responsibility in case of:

- Using the instrument contrary to the national safety and accident-prevention laws;
- Wrong installation, inobservance or wrong procedures of the instructions provided in the present manual;
- Defective electrical power supply;
- Modifications or tampering;
- Operations carried out by untrained or unqualified personnel.

The safety of the instrument also depends on the strict observance of the procedures indicated in the manual: always operate the instrument in its functioning capacity and carry out a careful routine maintenance.

• All phases of inspection and maintenance should be done by qualified personnel.

• The configurations provided in the manual are the only ones permitted.

• Do not try to use them anyway contrary to the indications provided.

The instructions in this manual do not substitute but accomplish the obligations of the current law

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## Description

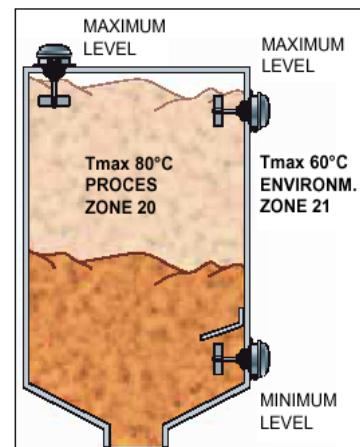
The warning level for solid **SE.ATEX** are used to control the levels in tanks containing materials in powder or granular. The body of the apparatus is applied to the outer wall of the container side or head.

The material must be able to move freely around the helix, which should not be invested by the direct jet of material.

The functioning of the device is very simple: a synchronous motor that rotates at blow speed drives a helix inside the tank to be checked. In the absence of material the motor is energized and rotates the helix. The presence of material around the helix it slows the rotation causing an exchange of contacts of command; a second micro-switch causes the detachment of the supply voltage of the motor.

The opening or closing the circuit determines the command of an audible or visual signal, or the loading of the silo itself, the conveyors stop, starting or stopping of screws, etc.

1. The body of the instrument is of cast aluminium, with two certified Ex output press-cables manufactured by Hummel AG, type HSK-M-Ex code 1.610.1600.30.
2. The tree, stainless steel, is mounted on ball bearings sealed (**FPM/FKM**), and is equipped with a dust seal ring (**FPM/FKM**).
3. The mounting plate has six holes, or at the hub with threaded 2 "1 / 2 inch GAS.
4. The auction (with port propeller shaft) is cm long. 15, 30, 50, 70, 100 in the standard executions (is the part that goes inside the tank).



## Installation

The instrument is suitable for use in environments **where a potentially explosive atmosphere in the form of a cloud of dust in the fuel is present continuously or for long periods**, inside of the tanks or silos (**zone 20**). In this zone is placed the only part of equipment that goes from flange to helix indicator.

The remaining part (from the cover to the flange) has to be placed outside the process zone, in the environment where potentially explosive atmosphere may be present only occasionally during normal use (outside of the silo, **zone 21**).

**Provide for protection against power supply short circuit in accordance to directive EN 60079-14.**

## Care in mounting

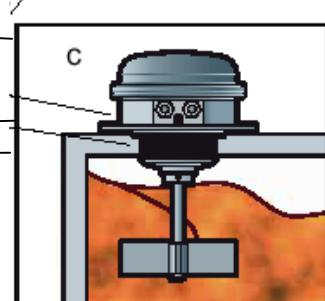
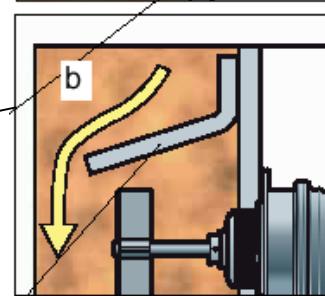
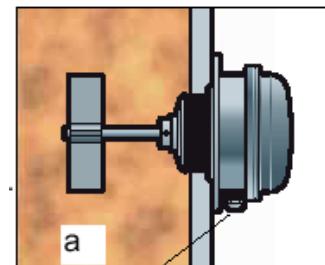
By sideways mounting the press-cables have to be directed downward. (a).

In case of using only one of the two press-cables planned, install a cap certified **Ex** (available on request).

**It's recommended to tighten the cable gland at 9Nm of torque after fitting the cable.**

It is necessary to get ready a protective flap to about 8-10 cm above the instrument, when the weight of the material on the helix is significant, for example, material with high specific gravity, or subject to movements in block (b).

The indicator must be set with **six screws M6 (mounting plate)** or by using the hub threaded 2"1/2 inch GAS (supplied on request) (c).

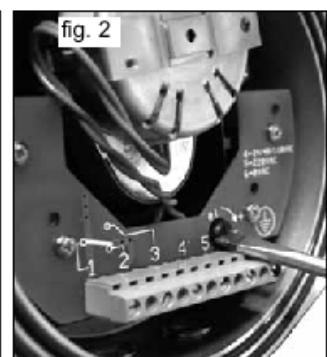
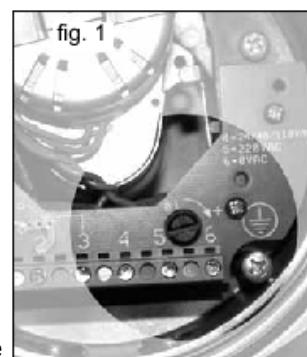


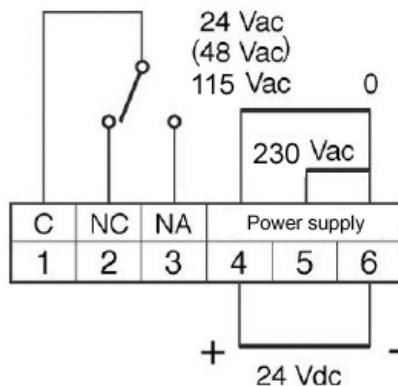
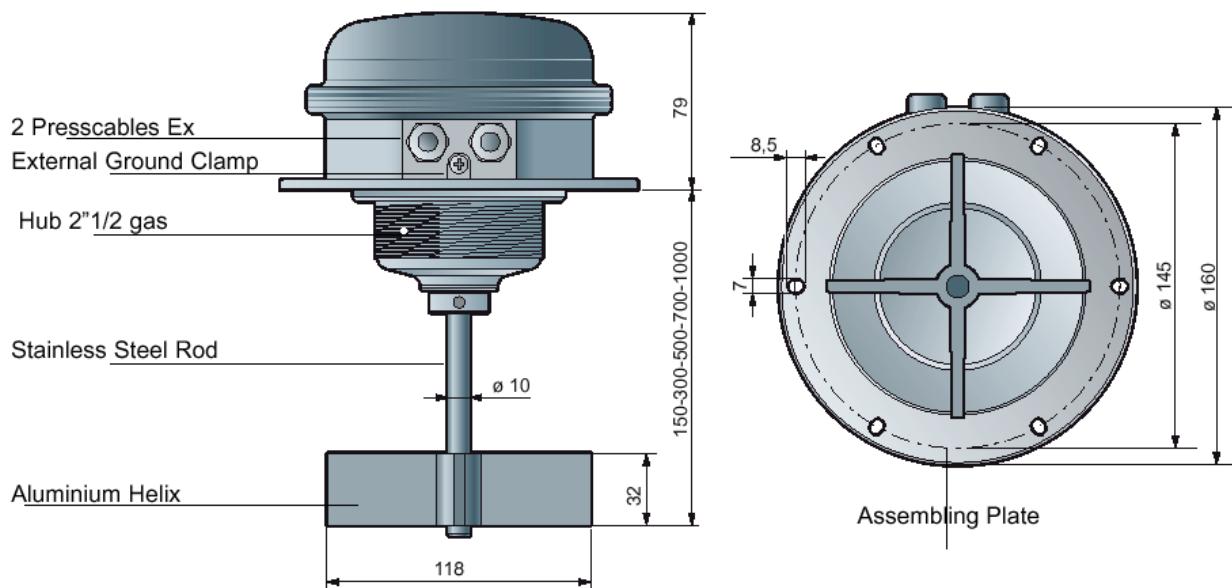
## Instruction for adjustment of spring power

The indicators SEM are usually supplied with the pressure-spring of the starter adjusted on minimum power.

For products with a high specific weight it is advisable to increase the spring power as follows:

- take off the cover of the instrument,
- identify the adjustment screw (fig.1) in front of the terminal board,
- turn the screw, equipped with 3 adjustment releases, clock-wise (fig.2).



**Connection scheme****Dimensions****Technical characteristics**

|                                |  |
|--------------------------------|--|
| Case                           | Aluminium  |
| Protection degree              | IP65   |
| Electrical contacts            | 6A 250Vac – 3A 250vdc  |
| Working temperature            | -15° +60°C environmental, -15° +80°C process                             |
| Absorption                     | 3 VA   |
| Cable 95°C temperature working | Sect. Ø1,5mm – diam. Ø5÷ Ø10 mm – peeling 5÷ 6 mm                        |
| Cable input                    | Cable gland M16x1,5  |
| Cable gland tighten torque     | 9 Nm   |
| Rod length                     | 15 – 30 – 50 – 70 – 100 cm   |
| Relative humidity              | 10-90%   |
| Working pressure               | atmospheric pressure   |
| Norms:                         | 2014/34/UE ATEX , Electromagnetic compatibility 2014/30/UE               |
| Certificate n.:                | DNV-MUNO 0496.ATEX.07/3316, Notification number: Presafe 15 ATEX 187658Q |
| Marking:                       | CE 2460 Ex II 1/2 D Ex ta IIIC T95°C IP65 -15°C<Ta<+60°C                 |

All communications to the manufacturer should be addressed to:

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**FIAMA srl is not responsible for any damage to persons or things caused by tamperings and wrong use and in any case that are not consistent with the features of the instrument.**

**F.I.A.M.A. s.r.l.**  
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# DICHIARAZIONE DI CONFORMITÀ EU

*EU Declaration of Conformity*

**FABBRICANTE / Manufacturer :** **F.I.A.M.A. s.r.l.**

**DESCRIZIONE PRODOTTO / Description of the equipment :**

**SEGNALATORI DI LIVELLO AD ELICA MODELLI SE-ATEX, SL-ATEX**  
*Level controls propeller Mod. SE-ATEX, SL-ATEX*

**DIRETTIVA 2014/34/EU ATEX**  
*2014/34/EU "Atex" Directive*



**Organismo Notificato :**  
*Notified Body/Address*



**DNV Product Assurance AS**  
 Veritasveien 3  
 1363 Høvik, Norway

**Num. Identificazione: 2460**  
*Identification number :*

**Certificato Sistema Qualità Produzione n°: PRESAFE 15 ATEX 187658Q**  
*Certificate Production Quality System n°:*

**Certificato Mod. B n°:** **DNV-MUNO 0496.ATEX.07/3316**  
*Certificate MOD B n°:*

**Marcatura:** **CE 2460 Ex II 1/2 D Ex ta IIIC T95°C IP65 -15<Ta<+60°C**



**CE 2460 Ex II 1/2 D Ex ta IIIC T100°C IP65 -15<Ta<+60°C**

*per versione SL.ATEX/S 24VCC con scheda inverter*

*for SL.ATEX/S 24VCC version with electronic inverter*

**Norme Armonizzate** **CEI EN IEC 60079-0: 2018, CEI EN IEC 60079-31:2024, EN 1127-1: 2019**  
*Harmonized Standards* **CEI EN IEC 61010-1/A1:2021 in relazione alla sicurezza elettrica** *Related to electrical safety*

**DIRETTIVA 2014/30/EU "Compatibilità elettromagnetica"** **CE**  
*2014/30/EU "Electromagnetic Compatibility" Directive*

**Norme Armonizzate** **CEI EN IEC 61326-1:2022**  
*Harmonized Standards*

La presente dichiarazione di conformità è rilasciata sotto la responsabilità esclusiva del fabbricante. L'oggetto della dichiarazione di cui sopra è conforme alla pertinente norma EU armonizzata (Vedi ns. Relazione Tecnica 2025-01-31-rel-tec-prod-SE-atex-SL-atex)

*This declaration of conformity is issued under the sole responsibility of the manufacturer. The object of the declaration described is in conformity with the relevant harmonised EU standard (Ref. FIAMA file: 2025-01-31-rel-tec-prod-SE-atex-SL-atex)*

| <b>Data / Date :</b> | <b>Posizione / Qualification :</b> | <b>Nome / Name :</b> | <b>Firma / Signature :</b> |
|----------------------|------------------------------------|----------------------|----------------------------|
| 31/01/2025           | Amministratore Delegato            | Barbieri Maria Carla |                            |