



COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV
ISO 9001

USER'S MANUAL AND MAINTENANCE



PADDLE LEVELCONTROL FOR SOLIDS MOD. "SL-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: **CE** 2460 **Ex** 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.

For 24VDC/S version with inverter board (/S suffix in the description), marking is:

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

Utilization in zone 20 and zone 21, protection mode with case, max superficial temperature 100°C, environmental temperature from -15°C to 60°C.

Certificate n. DNV-MUNO0496.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 of 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

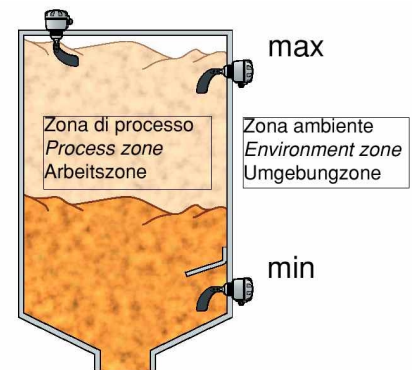
Description

The control level for solid **SL.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, wich manufacturer is Hummel AG, type HSK-M-Ex, part number 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 1"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 cloud or dust is present continuously or for long periods**, inside of the tanks or silos (**zone 20**). In this zone 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 short circuit on power supply in accordance to directive EN 60079-14.

Please note: the version at power supply of 24VDC/S with inverter board (/S suffix in the description), has a max superficial temperature of 100°C instead 95°C.

Precautions in assembling

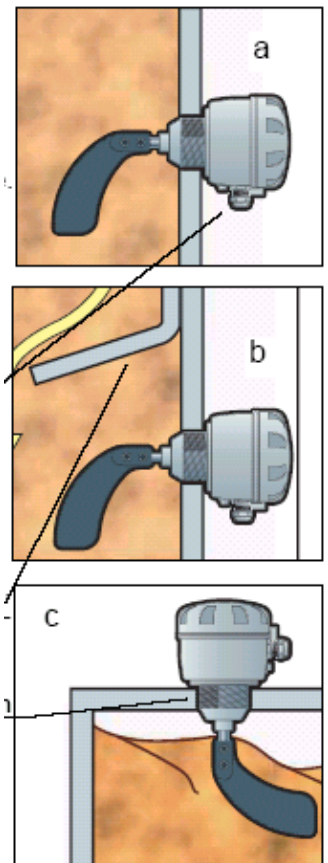
By sideways mounting the press-cables have to be directed downward. (fig.a).

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

After fitting the cable it's recommended to tighten the cable gland at torque of 9Nm .

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 (fig. b).

The indicator must be set with **the hub threaded 1"1/2 inch GAS** (supplied on request) (fig c).

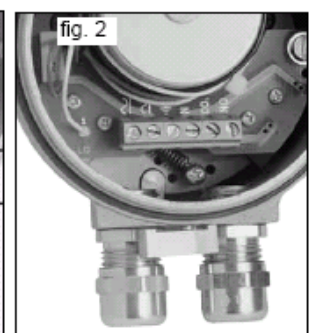
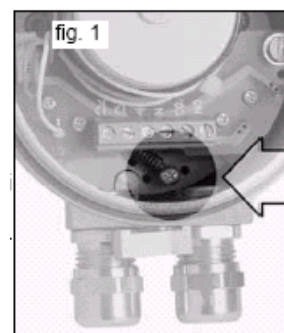


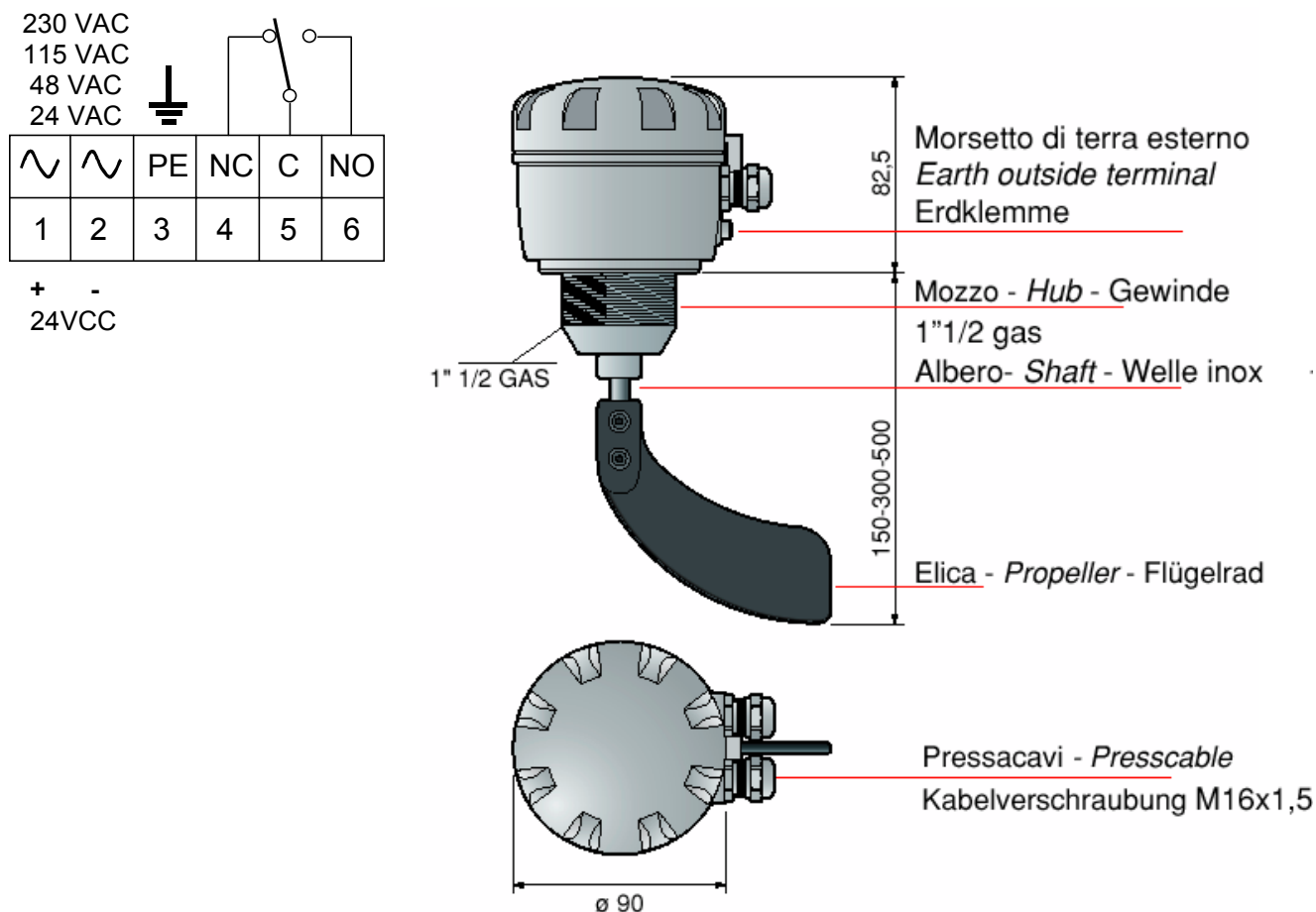
Instruction for adjustment of spring power

The indicators SL.ATEX are usually supplied with the tension spring of the motor adjusted on minimum value.

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

- take off the cover of the instrument,
- identify hold-screw of the spring (picture 1), in front of terminal board
- move the screw to increase (or decrease) the tension of the spring (picture 2).



Electrical connection and dimensions**Technical characteristics**

Case	Aluminium die cast
Protection degree	IP65
Electrical contacts	6A 250 Vac - 3A 250 Vdc
Working temperature	-15° +60°C ambient, -15° +80°C process
Power supply	24 - 115 – 230Vac ± 10% 50/60 Hz – 24Vdc ± 10%
Absorption	3 VA
Cable for 95°C	Sect. Ø1,5mm – diam. Ø5÷ Ø10 mm – peeling 5÷ 6 mm
Cable entries	Cable gland M16x1,5
Cable gland tighten torque	9 Nm
Shaft length	15 - 30 - 50 cm, others values on request
Relative humidity	10-90%
Working pressure	atmospheric
Directive conformity: 2014/34/UE ATEX, Electromagnetic compatibility 2014/30/UE	
Certificate n.: DNV-MUNO0496.ATEX.07/3316 Notification n.: Presafe 15 ATEX 187658Q	
Marking	CE 2460 Ex II 1/2 D Ex ta IIIC T95°C IP65 -15°C<Ta<+60°C
Marking for 24VDC/S (version with inverter board, suffix /S)	CE 2460 Ex II 1/2 D Ex ta IIIC T100°C IP65 -15°C<Ta<+60°C

Manufacturer

All communications to the manufacturer should be addressed to:

FIAMA s.r.l., Via G. Di Vittorio, 5/A - 43016 San Pancrazio (Parma) - Italy

Tel. (+39) 0521.672.341 - Fax. (+39) 0521.672.537 – e-mail: info@fiama.it - www.fiama.it

FIAMA srl is not responsible for any damage to persons or things caused by tampering 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.

Via G. di Vittorio, 5/a

43016 San Pancrazio PR, ITALY

Tel. + 39 0521 67 23 41 - Fax + 39 0521 67 25 37

Cod. Fisc. e Part. IVA 02046950347

E-mail : info@fiama.it

Internet: www.fiama.it

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:

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

CEI EN IEC 60079-0: 2018, CEI EN IEC 60079-31:2024, EN 1127-1: 2019

CEI EN IEC 61010-1/A1:2021 in relazione alla sicurezza elettrica Related to electrical safety

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

Norme Armonizzate
Harmonized Standards

CEI EN IEC 61326-1:2022

La presente dichiarazione di conformità è rilasciata sotto la responsabilità esclusiva del fabbricante. Il certificato di esame CE di tipo n° DNV-MUNO 0496.ATEX.07/3316 è stato emesso in accordo alle norme CEI EN IEC 60079-0:2009, CEI EN IEC 60079-31:2009, CEI EN 1127:2011, e la gap analysis nella nostra Relazione Tecnica "2026-01-31-rel-tec-prod-SE-atex-SL-atex.doc", ne conferma la validità secondo le norme vigenti. This declaration of conformity is issued under the sole responsibility of the manufacturer. EC Type Examination Certificate No. DNV-MUNO 0496.ATEX.07/3316 was issued in accordance with the CEI EN IEC 60079-0:2009, CEI EN IEC 60079-31:2002, CEI EN 1127:2011 standards, and the gap analysis in our Technical Report "2026-01-31-rel-tec-prod-SE-atex-SL-atex", has confirmed its compliance with the applicable standards

Data / Date :

31/01/2026

Posizione / Qualification :

Amministratore Delegato

Nome / Name :

Barbieri Maria Carla

Firma / Signature :

Maria Carla Barbieri