

Instruction Manual

Alfa Laval Pressure Transmitter

TE67Exxxxxxx

1. General information

1.1 Information on the Instruction manual

This Instruction manual contains important information on proper usage of the device. Read this Instruction manual carefully before installing and starting up the pressure measuring device.

Adhere to the safety notes and operating instructions which are given in the Instruction manual. Additionally applicable regulations regarding occupational safety, accident prevention as well as national installation standards and engineering rules must be complied with!

This Instruction manual is part of the device, must be kept nearest its location, always accessible to all employees.

This Instruction manual is copyrighted. The contents of this Instruction manual reflect the version available at the time of printing. It has been issued to our best knowledge. However, errors may have occurred. Alfa Laval Tank Equipment A/S is not liable for any incorrect statements and their effects.

– Technical modifications reserved –

1.2 Symbols used

Y DANGER! – dangerous situation, which may result in death or serious injuries

Y WARNING! – potentially dangerous situation, which may result in death or serious injuries

Y CAUTION! – potentially dangerous situation, which may result in minor injuries

! CAUTION! – potentially dangerous situation, which may result in physical damage

NOTE – tips and information to ensure a failure-free operation

1.3 Target group

Y WARNING! To avoid operator hazards and damages of the device, the following instructions have to be worked out by qualified technical personnel.

1.4 Limitation of liability

By non-observance of the Instruction manual, inappropriate use, modification or damage, no liability is assumed and warranty claims will be excluded.

1.5 Intended use

- The Alfa Laval Pressure Transmitters TE67Exxxxxxx have, according to the type, been developed for applications in overpressure and vacuum as well as for absolute pressure measurement. It is the operator's responsibility to check and verify the suitability of the device for the intended application. If any doubts remain, please contact our local Alfa Laval Company in order to ensure proper usage. Alfa Laval Tank Equipment A/S is not liable for any incorrect selections and their effects!

- Permissible media are gases or liquids, specified in the data sheet. In addition it has to be ensured, that this medium is compatible with the media wetted parts.

- The technical data listed in the current data sheet are engaging and must be complied with. If the data sheet is not available, please order or download it from our homepage. (<http://www.alfalaval.com>)

Y WARNING! Danger through improper usage!

1.6 Package contents

Please verify that all listed parts are undamaged included in the delivery and check for consistency specified in your order:

- pressure transmitter
- mounting instructions

2. Product identification

The device can be identified by its manufacturing label. It provides the most important data. By the ordering code the product can be clearly identified.

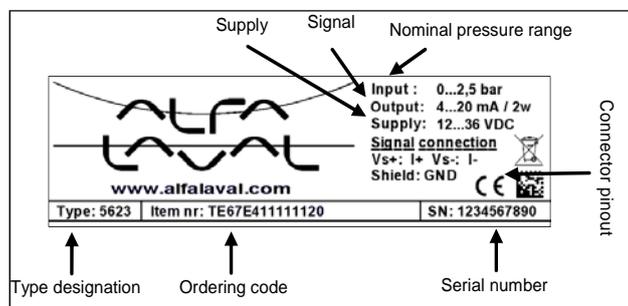


Fig. 1 manufacturing label

! The manufacturing label must not be removed from the device!

3. Mechanical installation

3.1 Mounting and safety instructions

Y WARNING! Install the device only when depressurized and currentless!

Y WARNING! This device may only be installed by qualified technical personnel who has read and understood the Instruction manual!

! Handle this high-sensitive electronic precision measuring device with care, both in packed and unpacked condition!

! There are no modifications/changes to be made on the device.

! Do not throw the package/device!

! To avoid damaging the diaphragm, remove packaging and protective cap directly before starting assembly. The delivered protective cap has to be stored!

! Place the protective cap on the pressure port again immediately after disassembling.

! Handle the unprotected diaphragm very carefully - it is very sensitive and may be easily damaged.

! Do not use any force when installing the device to prevent damage of the device and the plant!

! For installations outdoor and in damp areas following these instructions:

- To prevent moisture admission in the plug the device should be installed electrically after mounting, at once. Otherwise a moisture admission has to be blocked e.g. by using a suitable protection cap. (The ingress protection in the data sheet is valid for the connected device.)
- Choose an assembly position, which allows the flow-off of splashed water and condensation. Avoid permanent fluid at sealing surfaces!
- When using a cable gland or outlet device, turn the outgoing cable downwards. If the cable has to be turned upwards, then point it downward so the moisture can drain.
- Install the device in such a way that it is protected from direct solar irradiation. Direct solar irradiation can lead to the permissible operating temperature being overstepped in the worst case. By this the operability of the device can be affected or damaged. If the internal pressure increases due to solar irradiation, measurement errors may be caused.

! For devices with gauge reference in the housing (small hole next to the electrical connection), install the device in such a way, that the gauge reference is protected from dirt and moisture. Should the device be exposed to fluid admission, the functionality will be blocked by the gauge reference. An exact measurement in this condition is not possible. Furthermore this can lead to damages on the device.

- ☞ Take note that no assembly stress occurs at the pressure port, since this may cause a shifting of the characteristic curve. This is especially important for very small pressure ranges.
- ☞ Provide a cooling line when using the device in steam piping.
- ☞ If there is any danger of damage by lightning or overpressure when the device is installed outdoor, we suggest putting a sufficiently dimensioned overpressure protection between the supply or switch cabinet and the device.

3.2 General installation steps

- Carefully remove the pressure measuring device from the package and dispose of the package properly.
- Go ahead as detailed in the specific instructions below.

3.3 Installation steps for Clamp

- Use a suitable seal corresponding to the medium and the pressure input.
- Put the seal onto the corresponding mounting part.
- Center the Clamp connection on the fitting counterpart with seal.
- Then fit the device with a suitable fastening element (e. g. semi-ring or retractable ring clamp) according to the supplier's instructions.

3.4 Installation steps for connecting flanges

- Use a suitable seal corresponding to the medium and pressure input. (e. g. a fiber gasket).
- Put the seal between connecting flange and counter flange.
- Install the device with 4 resp. 8 screws (depending on flange version) on the counter flange.

4. Electrical Installation

⚠ **WARNING!** Install the device in currentless condition only!

Establish the electrical connection of the device according to the technical data shown on the manufacturing label, the following table and the respective wiring diagram.

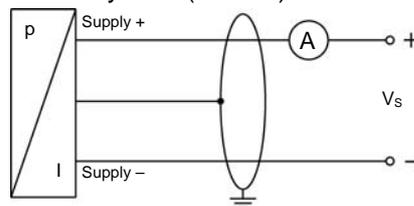
Pin configuration:

| Electrical connections | M12x1 (4-pin) |
|------------------------|---------------|
| Supply + | 1 |
| Supply - | 2 |
| 3-wire: Signal + | 3 |
| Shield | 4 |

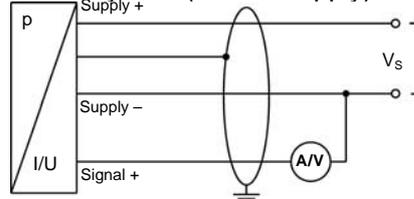
| Electrical connections | field housing | cable colours (DIN 47100) |
|------------------------|---------------|---------------------------|
| Supply + | IN + | white |
| Supply - | IN - | brown |
| 3-wire: Signal + | OUT+ | green |
| Shield | ⊕ | yellow / green |

Wiring diagrams:

2-wire-system (current)



3-wire-system (current/supply)



! For devices with cable gland as well as cable socket, you have to make sure that the external diameter of the used cable is within the allowed clamping range. Moreover you have to ensure that it lies in the cable gland firmly and cleftlessly

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- ! For the installation of a device with cable outlet following bending radiuses have to be complied with:
 - cable without ventilation tube:
 - static installation : 5-fold cable diameter
 - dynamic application:10-fold cable diameter
 - cable with ventilation tube:
 - static installation : 10-fold cable diameter
 - dynamic application: 20-fold cable diameter
- ! On devices with field housings, the terminal clamps are situated under the metal cap. To install the device electrically, the cap must be screwed off. Before the cover is screwed on again, the O-ring and the sealing surface on the housing have to be checked for damages and if necessary to be changed! Afterwards screw the metal cap on by hand and make sure that the field housing is firmly locked again.
- ! Prevent the damage or removal of the PTFE filter which is fixed over the end of the air tube on devices with cable outlet and integrated air tube.
- 🔧 For the electrical connection a shielded and twisted multicore cable is recommended.
- 🔧 If a transition is desired from a transmitter cable with gauge tube to a cable without gauge tube, we recommend to use a terminal box.

5. Initial start-up

- Y **WARNING!** Before start-up, the user has to check for proper installation and for any visible defects.
- Y **WARNING!** The device can be started and operated by authorized personnel only, who have read and understood the Instruction manual!
- Y **WARNING!** The device has to be used within the technical specifications, only! (compare the data in the data sheet)
- 🔧 Devices with an accuracy of 0.1 % FSO have micro-controlled electronics for processing and improving the signal. Principally, the processing takes more time as for analogue sensors, which have only an amplifier. Due to this longer response time, the output signal follows the measured value discontinuously. For nearly stable measured values, this characteristic is secondary. Please compare the specification of the response time in the data sheet.

6. Placing out of service

- Y **WARNING!** Disassemble the device only in current and pressure less condition! Check before disassembly, if it is necessary to drained off the media before dismantling!
- Y **WARNING!** Depending on the medium, it may cause danger for the user. Comply therefore with adequate precautions for purification.

7. Maintenance

In principle, this device is maintenance-free. If desired, the housing of the device can be cleaned using a damp cloth and non-aggressive cleaning solutions, in switched-off state.

Depending on the measuring medium, however, the diaphragm may be polluted or coated with deposit. Is

there a pollution tendency of the medium, the user has to determine the appropriate cleaning interval. After placing the device out of service correctly, the diaphragm can usually be cleaned carefully with a non-aggressive cleaning solution and a soft brush or sponge. If the diaphragm is calcified, it is recommended to send the device to Alfa Laval Tank Equipment for decalcification. Please note the chapter "Service/Repair" below.

- ! A false cleaning of the device can cause an irreparable damage on the diaphragm. Therefore never use pointed objects or pressured air for cleaning the diaphragm.

8. Service / Repair

8.1 Recalibration

During the life-time of a transmitter, the value of offset and span may shift. As a consequence, a deviating signal value in reference to the nominal pressure range starting point or end point may be transmitted. If one of these two phenomena occurs after prolonged use, a recalibration is recommended to ensure furthermore high accuracy.

8.2 Return

Upon every return of the device, no matter if for recalibration, decalcification, modifications or repair, it is necessary to contact your local Alfa Laval office to guarantee a quick execution of your request. Please inform us by sending an email to: Alteq.PartsandService@alfalaval.com. Include the number of devices sent and request a Return Number. Afterwards clean the device, pack it shatterproof and send it to Alfa Laval Tank Equipment A/S indicating the Return Number.

9. Disposal

The device has to be disposed of according to the European Directives 2002/96/EG and 2003/108/EG (on waste electrical and electronic equipment). It is prohibited to place electrical and electronic equipment in domestic refuse!



- Y **WARNING!** Depending on the used medium, deposit on the device may cause danger for the user and the environment. Comply with adequate precautions for purification and dispose of it properly.

10. Warranty conditions

The warranty conditions are subject to the legal warranty period of 12 months from the date of delivery. In case of improper use, modifications of or damages to the device, we do not accept warranty claims. Damaged diaphragms will also not be accepted. Furthermore, defects due to normal wear are not subject to warranty services.

11. Declaration of conformity / CE

The delivered device fulfils all legal requirements. The applied directives, harmonised standards and documents are listed in the EC declaration of conformity, which can be downloaded from our homepage <http://www.alfalaval.com>.

Additionally, the operational safety is confirmed by the CE sign on the manufacturing label.

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How to Contact Alfa Laval Tank Equipment A/S

For further information please feel free to contact:

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