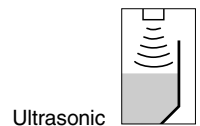


VEGA

Operating Instructions

Electronics module

VEGASON series 60



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1 About this document

1.1 Function

This operating instructions manual has all the information you need for quick mounting and setup of a replacement module. Please read this manual before you start setup.

1.2 Target group

This operating instructions manual is directed to trained, qualified personnel. The contents of this manual should be made available to these personnel and put into practice by them.

1.3 Symbolism used



Information, tip, note

This symbol indicates helpful additional information.



Caution: If this warning is ignored, faults or malfunctions can result.

Warning: If this warning is ignored, injury to persons and/or serious damage to the instrument can result.

Danger: If this warning is ignored, serious injury to persons and/or destruction of the instrument can result.



Ex applications

This symbol indicates special instructions for Ex applications.



List

The dot set in front indicates a list with no implied sequence.



Action

This arrow indicates a single action.



Sequence

Numbers set in front indicate successive steps in a procedure.

2 For your safety

2.1 Authorised personnel

All operations described in this operating instructions manual must be carried out only by trained specialist personnel authorised by the operator.

During work on and with the device the required personal protection equipment must always be worn.

2.2 Appropriate use

Oscillator, emitting electronics, housing or process components are replacement components for existing sensors.

2.3 Safety instructions for Ex areas

Please note the Ex-specific safety information for installation and operation in Ex areas. These safety instructions are part of the operating instructions manual and come with the Ex-approved instruments.

2.4 Environmental instructions

Protection of the environment is one of our most important duties. That is why we have introduced an environment management system with the goal of continuously improving company environmental protection. The environment management system is certified according to DIN EN ISO 14001.

Please help us fulfil this obligation by observing the environmental instructions in this manual:

- Chapter "*Packaging, transport and storage*"
- Chapter "*Disposal*"

3 Product description

3.1 Configuration

Scope of delivery

The scope of delivery encompasses:

- Electronics module VEGASON series 60
- Documentation
 - this operating instructions manual

3.2 Principle of operation

Area of application

The VEGASON series 60 electronics module is suitable for exchange with VEGASON series 60 ultrasonic sensors. It is available in different versions (see chapter "*Mounting preparations*").

3.3 Packaging, transport and storage

Packaging

Your instrument was protected by packaging during transport. Its capacity to handle normal loads during transport is assured by a test according to DIN EN 24180.

The packaging of standard instruments consists of environment-friendly, recyclable cardboard. For special versions, PE foam or PE foil is also used. Dispose of the packaging material via specialised recycling companies.

Transport

Transport must be carried out under consideration of the notes on the transport packaging. Nonobservance of these instructions can cause damage to the device.

Transport inspection

The delivery must be checked for completeness and possible transit damage immediately at receipt. Ascertained transit damage or concealed defects must be appropriately dealt with.

Storage

Up to the time of installation the packaging must be closed and stored according to the orientation and storage markings on the outside.

Unless otherwise indicated, the packaging must be stored only under the following conditions:

- Not in the open
- Dry and dust free
- Not exposed to corrosive media

Storage and transport temperature

- Protected against solar radiation
- Avoiding mechanical shock and vibration
- Storage and transport temperature see "*Supplement - Technical data - Ambient conditions*"
- Relative humidity 20 ... 85 %

4 Mounting

4.1 General instructions

If the electronics module is defective, it can be replaced by the user.



In Ex applications only one instrument and one oscillator with respective Ex approval may be used.

If there is no electronics module available on site, one can be ordered from the VEGA agency serving you.

Sensor serial number

The new electronics module must be loaded with the order and factory data of the sensor. These are the options:

- at the factory by VEGA
- or on site by the user



Information:

When loading on site, first of all the order data must be downloaded from the Internet (see "*Setup*").

In both cases, the sensor serial number is necessary. The serial numbers are stated on the type label of the instrument, inside the housing or on the delivery note.



Caution:

The order data and company data contain important presettings for the sensor. A reliable operation and a correction of the measurement is not possible without these data.

Assignment

Electronics modules are adapted to the respective sensor. They differ, e.g. in the signal output, the power supply or approval.

First of all check by means of the overview in section Mounting preparations, if you are using the suitable electronics module. Compare the new electronics module with the existing one. The specifications on the type label must correspond. This applies mainly to instruments with approvals.



Warning:

Switch off voltage supply before starting the mounting procedure. The replacement electronics must only be mounted in **idle condition**. Non-observance will damage the electronics!

4.2 Mounting preparations VEGASON 61, 62, 63

4 ... 20 mA/HART

Oscillator SN-E.61H is suitable for VEGASON 61, 62, 63 - 4 ... 20 mA/HART:

- SN-E.61HX (X = without approvals)
- SN-E.61HD (D = approvals XM, CX, CM, CI, UX, UF according to VEGA product list)
- SN-E.61HH (H = approvals KX, KF according to VEGA product list)

4 ... 20 mA/HART four-wire

Electronics module SN-E.61V is suitable for VEGASON 61, 62, 63 - 4 ... 20 mA/HART four-wire:

- SN-E.61VX (X = without approvals)

Profibus PA

Oscillator SN-E.61P is suitable for VEGASON 61, 62, 63 - Profibus PA:

- SN-E.61PX (X = without approvals)
- SN-E.61PD (D = approvals XM, CX, CM, CI, UX, UF according to VEGA product list)
- SN-E.61PH (H = approvals KX, KF according to VEGA product list)

Foundation Fieldbus

Oscillator SN-E.61F is suitable for VEGASON 61, 62, 63 - Foundation Fieldbus:

- SN-E.61FX (X = without approvals)
- SN-E.61FD (D = approvals CX, UX, UF according to VEGA product list)
- SN-E.61FH (H = approvals KX, KF according to VEGA product list)

4.3 Mounting preparations VEGASON 64, 65, 66

4 ... 20 mA/HART four-wire

Electronics module SN-E.64V is suitable for VEGASON 64, 65, 66 - 4 ... 20 mA/HART four-wire:

- SN-E.64VX (X = without approvals)
- SN-E.64VD (D = with approval CX, UX, UF according to VEGA product list)
- SN-E.64VG (G = with approval GX according to VEGA product list)

Profibus PA

Electronics module SN-E.64P is suitable for VEGASON 64, 65, 66 - Profibus PA:

- SN-E.64PX (X = without approvals)

- SN-E.64VD (D = with approval CX, UX, UF according to VEGA product list)
- SN-E.64VG (G = with approval GX according to VEGA product list)

Foundation Fieldbus

Electronics module SN-E.64F suitable for VEGASON 64, 65, 66 - Foundation Fieldbus:

- SN-E.64FX (X = without approvals)
- SN-E.64VD (D = with approval CX, UX, UF according to VEGA product list)
- SN-E.64VG (G = with approval GX according to VEGA product list)

4.4 Mounting procedure, two-wire instruments

Mounting steps

The electronics module is located in the electronics compartment. The below illustrations show the respective position of the electronics compartment in a single or double chamber housing.

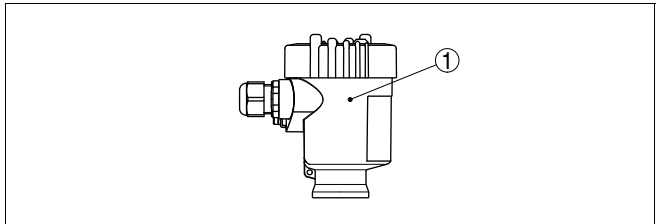


Fig. 1: Single chamber housing
1 Position of the electronics compartment

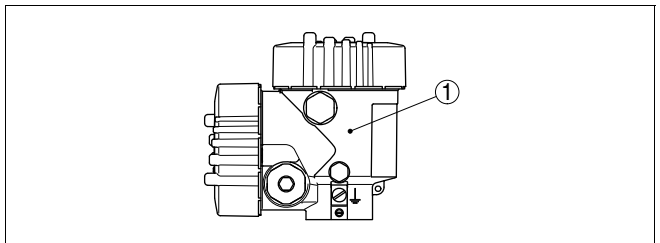


Fig. 2: Double chamber housing
1 Position of the electronics compartment

Proceed as follows:

- 1 Switch off power supply
- 2 Unscrew housing cover of the electronics compartment

- 3 Disconnect the connection cables according to the operating instructions manual of the respective sensor
- 4 Loosen the two holding screws with a screwdriver (Torx size T 10 or slot size 4)

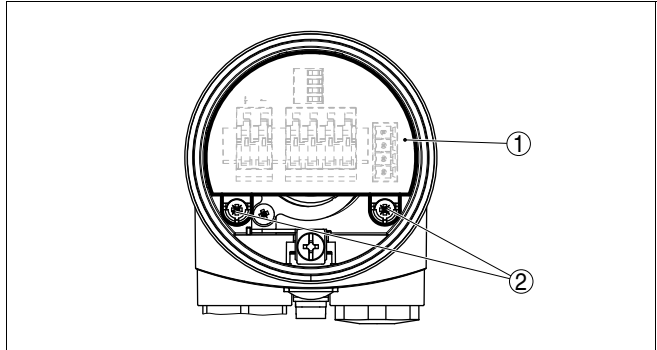


Fig. 3: Loosen the screws

- 1 Electronics module
- 2 Screws (2 pcs.)

- 5 Pull the previous electronics out by holding the opening levers.



Note:

Make sure that the housing is not rotated during the electronics exchange. Otherwise the plug may be in a different position later.

- 6 Insert the new oscillator carefully. Make sure that the plug is in the correct position.
- 7 Insert the two hold screws and tighten them
- 8 Connect the connection cables according to the operating instructions manual of the respective sensor
- 9 Screw the housing cover back on

The electronics exchange is now finished.



As a rule, the exchange of the electronics must be documented internally when used in Ex applications.

4.5 Mounting procedure, four-wire instruments

Mounting steps

The electronics module is located in the electronics compartment. The connection to the connection compartment is provided via internal connection cables. The illustration shows the position of the electronics compartment in the double-chamber housing.

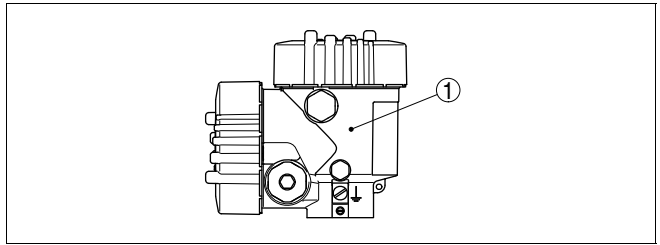


Fig. 4: Double chamber housing
1 Position of the electronics compartment

Proceed as follows:

- 1 Switch off power supply
- 2 Unscrew housing cover of the electronics compartment
- 3 Disconnect internal connection cables, on VEGASON 64, 65 and 66 also loosen the plug connector
- 4 Loosen the two holding screws with a screwdriver (Torx size T 10 or slot size 4)

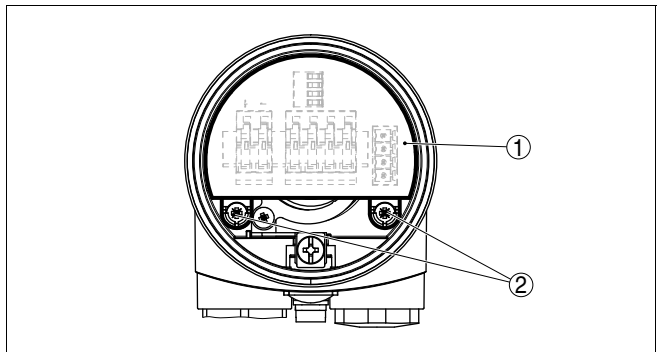


Fig. 5: Loosen the screws
1 Electronics module
2 Screws (2 pcs.)

- 5 Pull the previous electronics out by holding the opening levers.

**Note:**

Make sure that the housing is not rotated during the electronics exchange. The connection plug in the housing for the electronics can then be in another position.

- 6 Insert the new oscillator carefully. Make sure that the plug is in the correct position.
- 7 Insert the two hold screws and tighten them
- 8 Connect the internal connection cables as follows: red to terminal 1, black to terminal 2, on VEGASON 64, 65 and 66 connect also the plug connector
- 9 Screw the housing cover back on

The electronics exchange is now finished.



As a rule, the exchange of the electronics must be documented internally when used in Ex applications.

5 Connecting to power supply

5.1 Preparing the connection



Warning:

Before connecting to voltage supply, the plug connection between transducer and remote electronics must be provided in **idle condition** (see operating instructions manual of the respective sensor). Non-observance will damage the electronics!

Only then, the sensor may be connected to voltage supply.

5.2 Connection procedure

The connection to voltage supply is carried out according to the operating instructions manual of the respective sensor.

6 Setup

6.1 Setup preparations

With sensor serial number

If you have ordered the electronics module **by stating the sensor serial number**, it is ready for the setup procedure after installation and connection to power supply.

Without sensor serial number

If you have ordered the electronics module **without stating the sensor serial number** or you are using a suitable electronics module from stock, you first have to load the sensor data after installation.

Move via www.vega.com to the item "serial number search". The order data of the sensor will be displayed after entering the serial number.

VEGA ■ serial number search

Serial number:

Article no.	FX62.XXXGD1HKMAX
Delivery date	17.02.2004
Device	VEGAFLEX 62

Füllstandsensord nach dem Messprinzip der geführten Mikrowelle (TDR)

Zulassung	ohne
Ausführung/Werkstoff	Basisausführung/1.4435(316L)
Prozessanschluss/Werkstoff	Gewinde G1½A PN40/1.4435(316L)
Dichtung/Prozesstemperatur	Viton/-30...150°C
Elektronik	4...20mA HART®
Gehäuse/Schutzart	Kunststoff/IP66/IP67
Kabeleinführung/Steckeranschluss	M20x1,5/ohne
Anzeige-Bedienmodul (PLICSCOM)	eingebaut
Sprache des Menüs	DE
Messstellenkennzeichnungsschild	aus Edelstahl,laser-beschriftet
Betriebsanleitung in	DE
Anzahl Betriebsanleitungen	1,000
Markierung:	=PD10AQ01; C02YL01-LT1,

Document	Language	File type	File size
Operating instruction	DE	PDF	1018 KB
sensor data for service DTM	DE	XML	79 KB

Right-click on the image
Choose "Save target as..." to download the file to your hard drive

Fig. 6: Example for the order data of a sensor.

Below the order data you will find "Sensor data for Service-DTM" as XML file. This file includes all sensor-specific parameters as well as the data of the factory setting.

Load this file with "Save target as" on your PC. Start PACTware™ and mode in the Service-DTM to the menu item "Electronics exchange". Transfer the XML file into the sensor.

6.2 Setup procedure, two-wire and four-wire electronics

Adjustment

As a rule, all settings already carried out on site with the previous electronics module such as min./max. adjustment, false echo fade-out etc., must be repeated.



Tip:

For this purpose, use the copy function of the indicating and adjustment module or the adjustment software PACTware™.

6.3 Additional setup procedure, four-wire electronics 4 ... 20 mA

Current calibration

With four-wire instruments 4 ... 20 mA/HART there is a power supply electronics in the connection compartment. This electronics is used for connection to the voltage supply and delivers the 4 ... 20 mA output current. The electronics module must be adapted to the power supply electronics after an exchange.

Proceed as follows:

- 1 Connecting the sensor to voltage supply
- 2 Connect the PC with PACTware™ via VEGACONNECT 3 to the sensor
- 3 Connect ammeter with measuring range 20 mA as well as resolution and accuracy $\leq 1 \mu\text{A}$ to the current output
- 4 Select in the Service-DTM the menu item "Current calibration" and start the calibration



Information:

The electronics module starts a calibration procedure and simulates two current values. These values are influenced by the power supply electronics and displayed on the ammeter. Typical values are e.g. 6819 and 18597 μA .

- 5 Enter the measured current values for the first and second calibration point into the respective menu items

The Service-DTM confirms the successful input of the current values and indicates the actual current value. This value corresponds to the actual measured value taking the calibration into account.

Adjustment

As a rule, all settings already carried out on site with the previous electronics module such as min./max. adjustment, false echo fade-out etc., must be repeated.

**Tip:**

For this purpose, use the copy function of the indicating and adjustment module or the adjustment software PACTware™.

7 Maintain

7.1 Instrument repair

If a repair is necessary, please proceed as follows:

You can download a return form (23 KB) from the Internet on our homepage www.vega.com under: "*Downloads - Forms and certificates - Repair form*".

By doing this you help us carry out the repair quickly and without having to call for needed information.

- Print and fill out one form per instrument
- Clean the instrument and pack it damage-proof
- Attach the completed form and, if need be, also a safety data sheet outside on the packaging
- Please ask the agency serving you for the address of your return shipment. You can find the respective agency on our website www.vega.com under: "*Company - VEGA world-wide*"

8 Dismounting

8.1 Dismounting steps

Take note of chapters "*Mounting*" and "*Connecting to power supply*" and carry out the listed steps in reverse order.

8.2 Disposal

The replacement module consists of materials which can be recycled by specialised recycling companies. We have purposely designed the electronic modules to be easily separable.

WEEE directive 2002/96/EG

This instrument is not subject to the WEEE directive 2002/96/EG and the respective national laws (in Germany, e.g. ElektroG). Pass the instrument directly on to a specialised recycling company and do not use the municipal collecting points. These may be used only for privately used products according to the WEEE directive.

Correct disposal avoids negative effects to persons and environment and ensures recycling of useful raw materials.

Materials: see chapter "*Technical data*"

If you cannot dispose of the replacement component properly, please contact us about disposal methods or return.

9 Supplement

9.1 Technical data

Technical data

are stated in the operating instructions manual of the appropriate sensor.



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All statements concerning scope of delivery, application, practical use and operating conditions of the sensors and processing systems correspond to the information available at the time of printing.

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