



Application

The PGS 300F controller is deployed together with one or two sensors capable of supplying standard 0 or 4-20 mA current signals (e.g. submersible transmitters ETG) to offer a versatile, intelligent decentralised control solution designed for use in all areas of water management where in addition to easy operation and high levels of operational reliability precise determination of flow rates in open flumes and a linearization function are required.

Description

The PGS 300F controller assigns the standard current signal 0 / 4...20 mA supplied by the sensor to a level expressed in the unit of measurement [m].

Utilizing selectable integrated mathematical functions it is possible to convert the measured level to a quantity Q.

When applications demonstrate complex, non-linear mathematical relationships it is possible to utilize PC software to create and transfer a custom linearization via the integrated RS-232 interface.

The calculated quantity Q is issued as a pulse via digital output 3, and can be used for external cumulative purposes.

As well as the total quantity the PGS 300F controller provides a clear and unambiguous readout of the measured height, flow rate and utilization of the measurement range expressed in percent.

The value of the analogue output changes in line with this scaling, with 100 % corresponding to 20 mA at the output.

It is possible to display limit values above both measured level values (channel 1 and channel 2), which can then be assigned to relay 1 and relay 2 to suit requirements.

Uninterrupted monitoring of the measurement system facilitates a high level of operational reliability.

Fault states – wire breaks or short-circuits – corresponding to falling below the programmed zero point or exceeding the permitted input current are displayed in clear text as well as indicated as a potential-free fault signal.

For user convenience it is possible to configure all functions in a menu-assisted environment using just three buttons (excludes linearization) – eliminating the need for an additional programming device.

A separate DC voltage source supplies the requisite auxiliary power supply to the sensors.

Features

General:

- Graphic display of measurement values
- All parameters displayed in plain text
- Linearization for open flumes: V-notch/rectangular weirs, venturi/parschall flumes and so forth
- Custom linearization function
- Intuitive, menu-assisted operation
- Integrated auxiliary power source
- 2 analogue inputs 0/4... 20 mA
- 2 analogue outputs 0/4... 20 mA
- 3 or 4 relay outputs
- Max./min. value recording (indicator) including time stamp
- Permanently monitored measurement system
- Fault messages logged
- Integrated data logger including SD card and archiving function (optional)
- Mounts in front panel or onto mounting plate (DIN top-hat rails)
- Membrane keypad and lockable front panel

Limit values/scaling:

- User selectable units of measurement, e.g. m³/s, l/s and so forth.
- Percent value scaling
- User-definable zero point
- Precision set limit values
- Programmable opening and closing of contacts

Control and timer functions:

- Level trend recognition
- On and OFF delay
- Summation of start commands
- Relay outputs with operating hours counter, runtime monitoring, forced operation and maintenance intervals

Technical data

Power supply

Operating voltage 230 V / 50 Hz and 24 V DC
Power consumption max. 10 VA; 7.5 W

Display

Display Graphic LCD, 128x64 pixels, backlit
Update measured value Every 2 s

6 LEDs for relay status indication

Operation

3 x front-side keys and menu navigation

Analogue input

Number 2 x 0/4 ... 20 mA type of input (selectable)
Active input PGS 300F supplies sensor with power
Passive input Sensor has own power supply
Terminal voltage Non Ex version: 28.5 ... 22 V at 4 ... 20 mA
Ex version: 19 ... 15 V at 4 ... 20 mA
Current limit Approx. 45 mA (26 mA for Ex version)

Broken wire detection ≤ 3.6 mA

Wire short-circuit detection ≥ 21 mA

Calibration 2.4 ... 21.6 mA

Analogue output

Number: 2 x 0/4... 20 mA (electrically isolated)
Max. burden 500 Ohms
Fault alarm Behaviour selectable
Linearity error Referenced to 0.1 % 20 mA

Relay output

Number 3 function relays with NO contacts
1 fault/alarm relay with CO contact

Switching capacity ≤ 200 VA

Memory

Parameters EEPROM
Data / measurement SD card (optional)

Temperature

Operating temperature + 10 ... +45 °C

Surge voltage protection

Overvoltage category II / protection class II

Housing

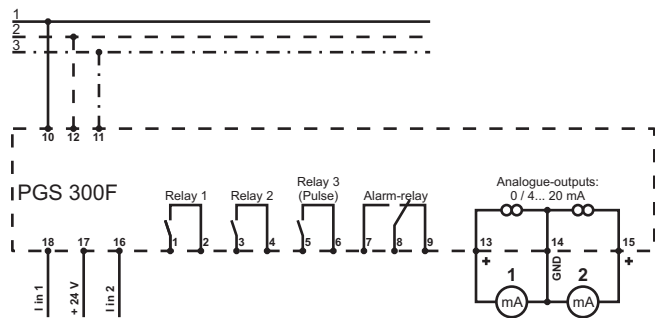
Material Plastic, ABS
Terminals Screw terminals max. 1.5 mm²
Weight 320 g
Degree of protection Device IP54 (panel-mounted in rubber sealed housing, behind transparent panel)

Approvals

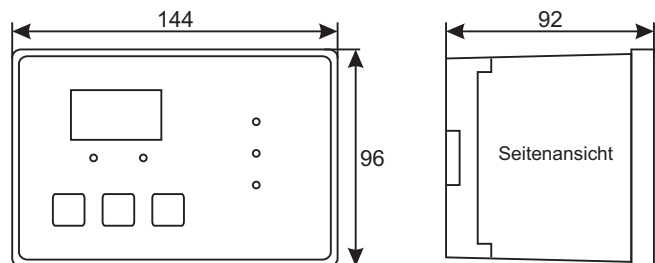
Ex(i) ATEX II (1)GD, [EEx ia] IIC
(in preparation)

Electrical connection

Supply Voltage 230V/50Hz: 10 = L
11 = PE
12 = N
Supply Voltage 24V/DC: 10 = L+
11 = PE
12 = L-



Dimensions



Ordering numbers

Basic unit with 2 channels:

PGS 300F in 230V/50 Hz:

PGS300-F-230

PGS 300F in 24V/DC:

PGS300-F-24

Options:

Passive inputs:

PGS300-PV

Data logger including SD card:

PGS300-SD

Ex(i)-approval:

PGS300-Ex *)

*) Available from 2014-08