



Application

The PGS 400 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) as a versatile, intelligent decentralised control solution designed for use in all areas of drinking water and waste water technology – in applications that require water levels, pressure or flow rate to be determined and recorded simply and precisely with high levels of operational reliability.

Description

The PGS 400 controller assigns the standard current signal 0 / 4...20 mA supplied by the sensor to a level expressed in the unit mWS (bar for pressure measurements and l/s for flow rate measurements).

The displayed value is calculated according to the input current and the fixed scaling factor.

In addition, it is also possible to scale a percentage display.

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 determine all limit values via the measurement range. The switch-on value of all three limit value pairs can be above or below the switch-off value (fill or empty tanks).

Cyclical alternating of two or three limit value contacts balances the load of the connected pumps to ensure uniform wear.

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 – eliminating the need for an additional programming device.

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

Features

General:

- ☐ Graphic display for measurement values
- ☐ Clear text display of system status and configuration
- ☐ Intuitive, menu-assisted operation
- ☐ Integrated auxiliary power source
- ☐ 2 analogue inputs 0/4... 20 mA
- ☐ 2 analogue outputs 0/4... 20 mA
- ☐ 4 relay outputs
- ☐ Max./min. value recording (indicator) including time stamp
- ☐ Uninterrupted monitoring of measurement system
- ☐ Retains parameter settings if the mains power supply should fail (EEPROM)
- ☐ Fault messages logged
- ☐ Mounts in front panel or onto mounting plate (DIN top-hat rails)
- ☐ Membrane keypad and lockable front panel

Limit values/scaling:

- ☐ User selectable units, for example mWS, bar and l/s
- ☐ Precision set limit values
- ☐ Optional user adjustable scaling of the final value or the actual value (instantaneous value) in the respective unit
- ☐ Percent value scaling
- ☐ User-definable zero point
- ☐ Programmable opening and closing of contacts
- ☐ LEDs indicate control state of the relays
- ☐ Optional alternating operation (cyclical or operating hours) of the limit value contacts

Control and timer functions:

- ☐ Level and trend recognition combinable with a limit contact
- ☐ Operating hours counter of relay outputs
- ☐ Pump start counter (number of start commands)
- ☐ On and OFF delay
- ☐ Runtime monitoring of relay outputs
- ☐ Forced relay outputs
- ☐ Maintenance intervals indicated for relay

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 400 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

Temperature

Operating temperature + 10 ... +45 °C

Surge voltage protection Overvoltage category II / protection class II

Housing

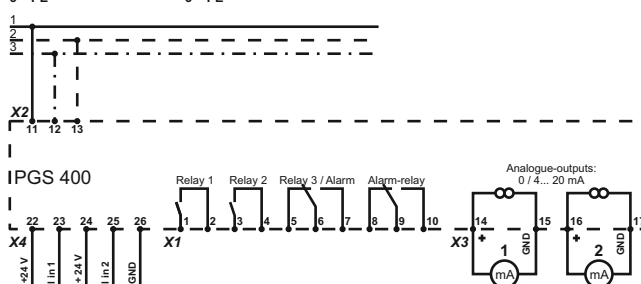
Material Plastic, ABS
Terminals Screw terminals max. 1.5 mm²
Weight 320 g
Degree of protection Device IP54 (panel-mounted in rubber sealed housing)

Approvals

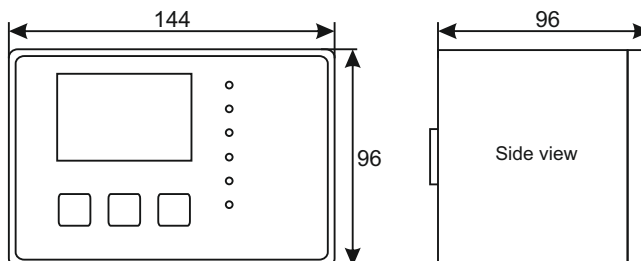
Ex(i) ATEX II (1)GD, [Ex ia] IIC
(in preparation)

Electrical connection

Supply voltage 230V/50Hz: 1 = L, 2 = N, 3 = PE
Supply voltage 24VDC: 1 = L+, 2 = L-, 3 = PE



Dimensions



Ordering numbers

Basic unit with 1 channel / 1 sensor:
PGS 400 in 230V/50 Hz: PGS400-1K-230
PGS 400 in 24V/DC: PGS400-1K-24

Basic unit with 2 channels / 2 sensors:
PGS 400 in 230V/50 Hz: PGS400-2K-230
PGS 400 in 24V/DC: PGS400-2K-24

Options:
Ex(i)-approval: PGS400-Ex *)

*) Available from 2022-05