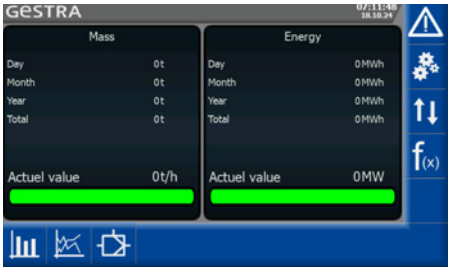
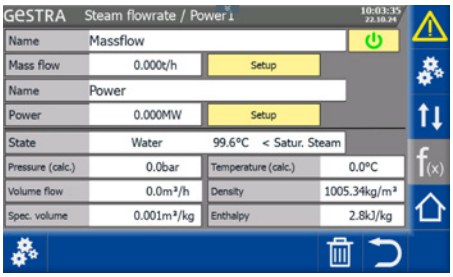
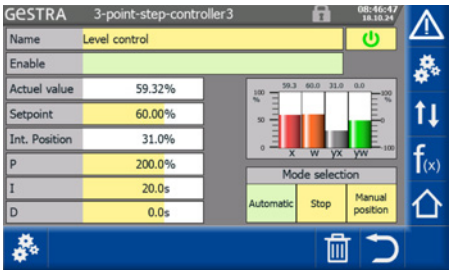
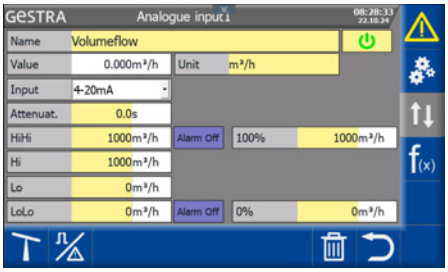








Steam flow rate calculator and universal controller
SPECTOR*control* FLOW

Function

The SPECTOR*control* Flow can be used in combination with various sensors for recording, processing and storing steam flow rate values. The steam flow rate calculator compensates a volumetric flow rate of steam with the aid of a pressure and/or temperature sensor. The data can be stored in the unit and exported for further processing. Via the connected sensors, limit values can also be generated and the controller freely configured for various uses, e.g.:

- Continuous and pump controllers
- Valve and stepping controllers

Digital and analogue logic operations and calculation functions offer further features for use as a universal controller.

Analogue and digital inputs and outputs:

The necessary analogue and digital inputs and outputs are on the back of the unit

- 20 x digital inputs 24 V (maximum input frequency< 20 Hz, ≤ 50 ms)
- 12 x digital outputs 24 V
- 4 x analogue inputs (4..20 mA, 0..20 mA, 0..10 V, Pt100)
- 1 x analogue input up to 120 °C (Pt100)

The input signals can be switched directly to the controllers or further processed by the logic and calculation functions, for example. They are then output once again via a digital or analogue output (IPO model). A great variety of switch-specific tasks can therefore be accomplished with these signals.

The following functions can be achieved:

- 2 x steam flow rate calculators for mass flow rate and output (with pressure/temperature compensation) or
- 1 x steam flow rate calculator with pressure and temperature compensation
- 3 x 3 trend logs for freely selectable input signals
- 4 x analogue outputs (4..20 mA, 0..20 mA, 0..10 V)
- 4 x day/month accumulated flow rate logs
- 4 x calculations, e.g. for switching value, limit value and setpoint multiplication
- 5 x logic operations, e.g. for controller enabling
- 2 x time switches
- Fault log
- 5 integrated, freely customisable controllers with the following functions:
  - Continuous controller and continuous pump controller:
  - 3-point stepping controller
  - 2-point controller/pumps
  - With P, PI or PID characteristic, dead zone, soft start, depending on the controller

Technical data

Supply voltage

- 24 VDC (⎓) +/- 30%

Power consumption

- Max. 14.4 VA

Analogue inputs CH1 - CH4

- 0 - 20 mA Input impedance 200 Ω
- 4 - 20 mA Input impedance 200 Ω
- 0 - 10 V Input impedance 10 MΩ
- Pt100 3-wire connection

Analogue outputs CH1 to CH4

- 0 - 20 mA Input impedance max. 470 Ω
- 4 - 20 mA Input impedance max. 470 Ω
- 0 - 10 V Input impedance min. 1 kΩ

Digital inputs 1 to 20 (2-wire connection)

- Input voltage range 12 V - 30 VDC (⎓)

Digital outputs 1 to 12

- 0.5 A (protected against overcurrent and overheating)

Data transmission interfaces

- 2 x Ethernet 10/100 Mbit switched (Modbus TCP/IP)
- 1 x USB host port (versions 2.0 and 1.1)

Indicators and controls

- Capacitive 5" touchscreen with LED backlight
- Resolution 800 x 480 pixels (WVGA)
- Installation aperture 136 mm x 96 mm

IP rating

- Front IP 66
- Rear IP 20

Admissible ambient conditions

- Service temperature: 0 °C - 50 °C
- Storage temperature: - 20 °C - 70 °C
- Air humidity: 5 % - 85 % relative humidity, non-condensing

Housing

- Material: Front (metal/glass) Rear (metal enclosure)
- Housing attachment with the supplied fastening elements
- Designed solely for installation in a control cabinet or switch panel

Weight

- Approx. 1 kg

Applicable directives:

The SPECTOR*control* Flow has been tested and approved for use in the scope governed by the following directives:

Directives:

- Directive 2014/30/EU EMC Directive

Steam flow rate calculator and universal controller

SPECTOR*control* FLOW

How to order:

SPECTOR*control* Flow

Stock code: 393114

- Capacitive 5" touchscreen, 800 x 480
- IP rating of front IP 66
- 2 x Ethernet 10/100 Mbit switched (Modbus TCP/IP)
- SD/USB ports
- 20 digital inputs 24 V, 2-wire
- 12 digital outputs 24 V
- 4 analogue inputs (4..20 mA, 0..20 mA, 0..10 V, Pt100)
- 4 analogue outputs (4..20 mA, ...10 V)
- 1 x analogue input up to 120 °C (Pt100)

Including software for the functions:

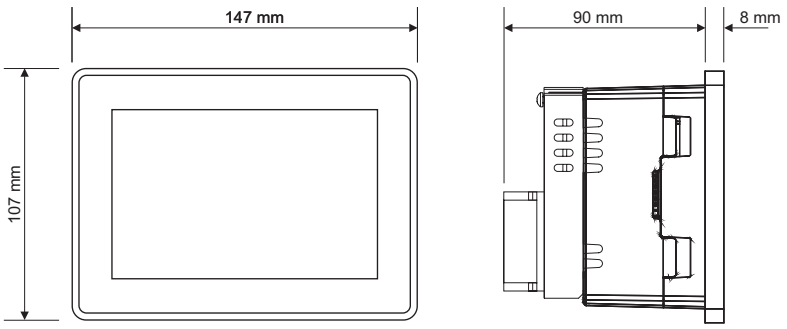
- 2 steam flow rate measurements (with pressure and temperature compensation)
- 3 x 3 trend logs for freely selectable input signals
- 4 day/month accumulated flow rate logs
- 4 calculations, e.g. for switching value, limit value and setpoint multiplication
- 5 logic operations, e.g. for controller enabling
- 2 time switches
- Fault log
- 5 integrated controllers that can be optimised as desired, featuring:
  - Continuous controller and continuous pump controller:
  - 3-point stepping controller
  - 2-point controller/pumps
  - With P, PI or PID characteristic, dead zone, soft start, depending on the controller

Directives and standards

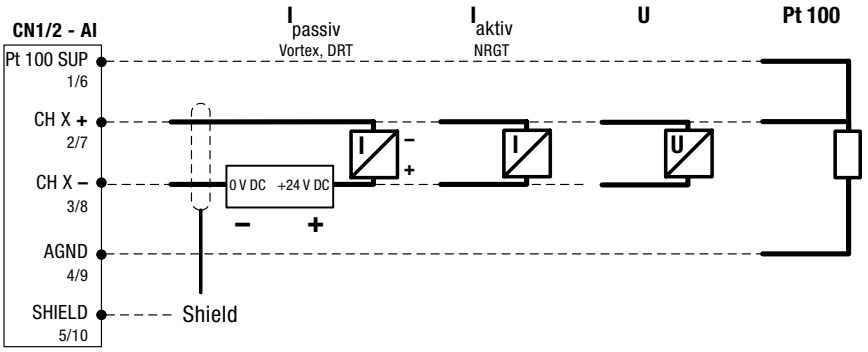
For details on the conformity of equipment and applicable standards and directives, please see our Declaration of Conformity and associated certificates and approvals.

Please note our general terms of business.

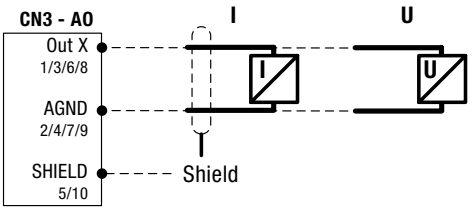
Dimensions of the SPECTOR*control* Flow



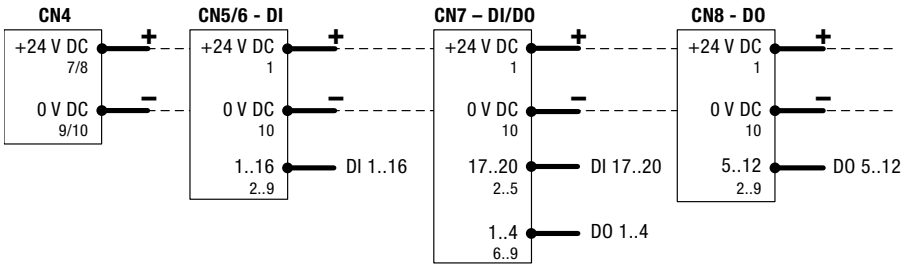
Analogue inputs (AI)



Analogue outputs (A0)



Digital inputs (DI)/outputs (DO)



Each +24 V and 0 V connection is bridged internally.

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