

BMS SERIES



BMS is a bubbling system for level detection based on the measurement of hydrostatic pressure caused by the liquid contained in the tank.

The working principle is founded on the measure of the pressure value needed to maintain a constant and regular air flow through a pipe probe open in the bottom and submerged into the liquid. At any level variation of the liquid in the tank corresponds a variation of the hydrostatic pressure applied on the air outgoing from the probe pipe; these pressure variations are precisely detected by the 27M P/I converter and converted into a standard 4÷20 mA electric signal.

PR3 regulator keeps constant the bubbling air flow at any level value assuring high precision measurement.

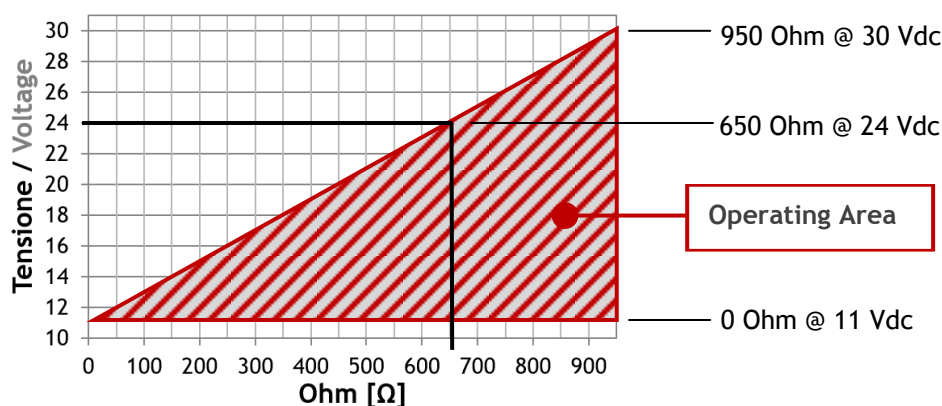


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TECHNICAL FEATURES

Electrical parameters

Supply:	2 wires: 12 ÷ 30 Vdc 3 wires: 16 ÷ 26 Vdc
Output signal:	2 wires: 4 ÷ 20 mA 3 wires: 0 ÷ 10 Vdc (min 30 mVdc) 0 ÷ 5 Vdc (min 30 mVdc)
Input signal:	Min: 0 ÷ 3 mbar Max: 0 ÷ 16 bar
Load resistance:	2 wires: $R_{\Omega} = (U_{\text{supply}} - 12 \text{ V}) / 0.02 \text{ A}$ 3 wires: $R_{\Omega} \geq 10 \text{ K}\Omega$
Max load:	As per chart



Measurement performance

Total accuracy (*)	< ± 0.25 % FS (*)
Zero offset:	< ± 1 % FS
Overpressure:	< 3 x FS
Temperature zero drift:	< ± 0.025 % FS / °C (-10 ÷ 60 °C) (*)
Span thermal drift:	Piezo < ± 0.02 % FS / °C (*) Ceramic < ± 0.01 % FS / °C (*)
Long term stability:	Piezo: < ± 0.15 % FS / year Ceramic: < ± 0.12 % FS / year
Response time (63% FS):	Piezo: 10 ms Ceramic: 5 ms

Allowable de-range: Piezo Sensors: down to 4 times the Nominal Range
Ceramic Sensors: down to 2.5 times the Nominal Range

Notes

(*) Including hysteresis, non-linearity and non-repeatability (IEC 60770).

ENVIRONMENTAL FEATURES

Environmental Conditions

Ambient temperature: -40 ÷ +85 °C

Storage temperature: -40 ÷ +90 °C

Ingress protection degree: IP65

Relative Humidity: < 98% RH not condensing

APPROVALS

Type approvals

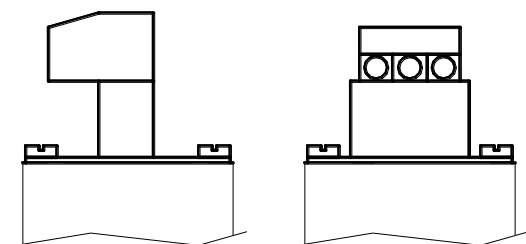
Directive 2014/30/EU (EMC) Adequate level of electromagnetic compatibility (27M)

WARNINGS

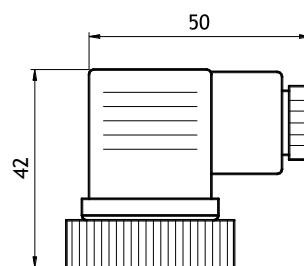
Instruments are delivered already calibrated and tested. It is possible to make recalibration or maintenance checks, adjusting the 4 mA output signal (zero) of the converter by means of trimmers.

ELECTRICAL WIRING

Converters are protected against reverse polarity. The recommended wiring cable is a screened signal cable, with wires of min. section area of 0.2 mm² (AWG24) and shielding > 80 %.



Code 11 Extractable
terminals 3 poles



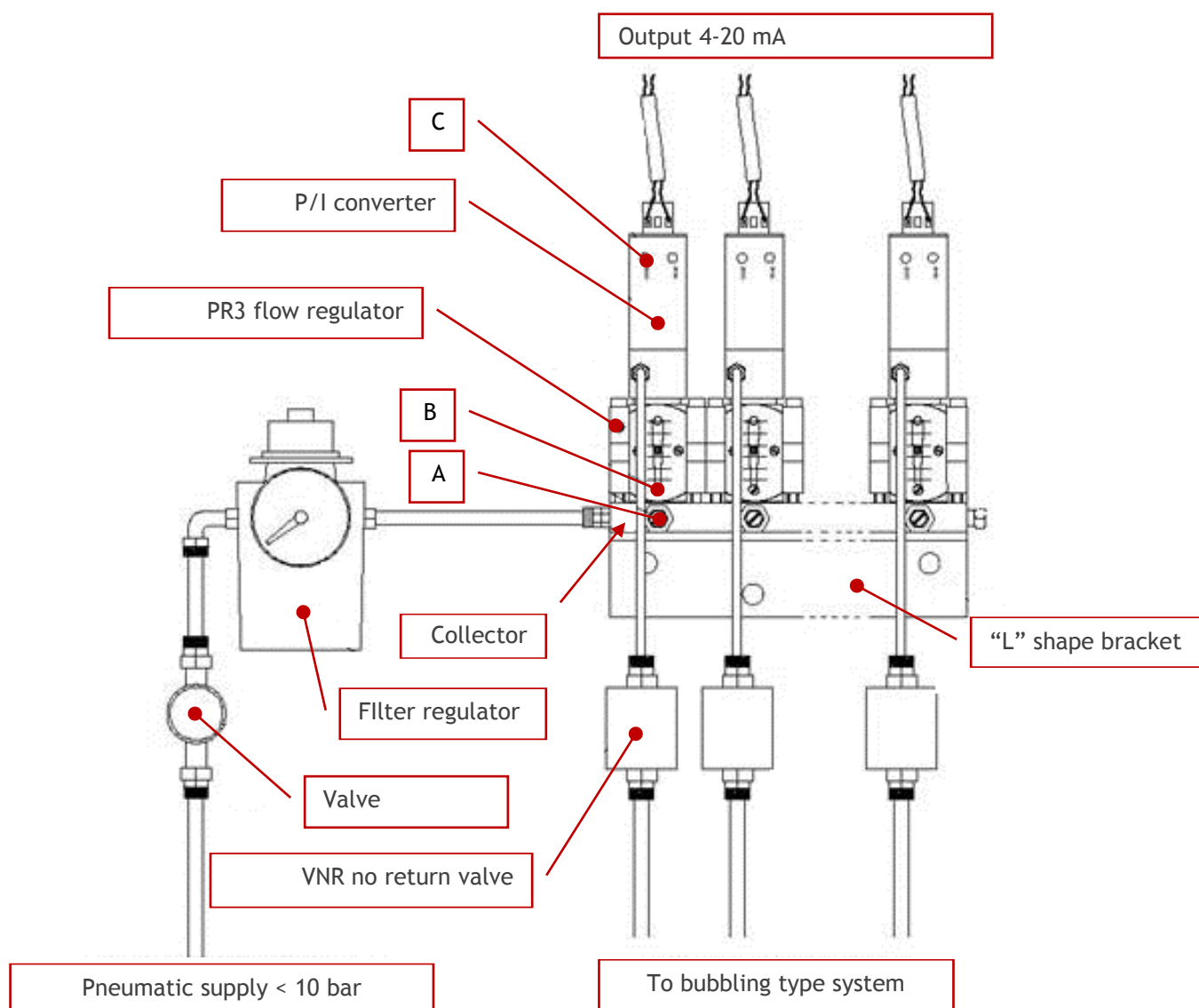
Code 04
DIN 175301 PG9/PG13 3+1 poles IP65

SYSTEM COMPONENT:

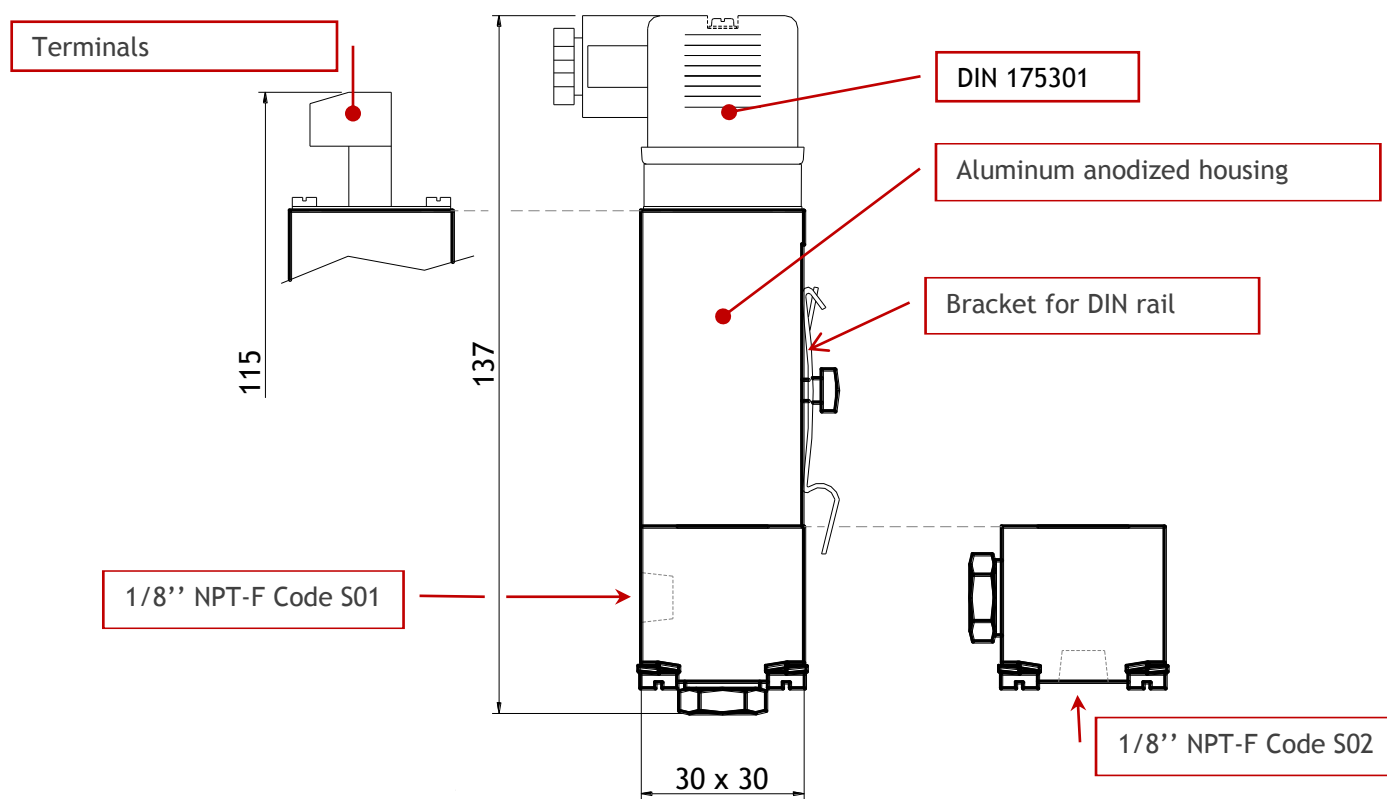
BMS system consists of the following main components:

- Pressure/current converter 27 series ;
- Flow regulator complete with PR3 series rotameter.

These components are supplied already assembled both in single and multiple version, i.e. with components mounted on a multiposition collector (up to 15) provided with needle shutoff valves for each position (A), useful when it is requested to shut off one line without interrupt the normal functioning of the others. Flow rate value on PR3 regulator (B) as well as trimmer positions on 27M converter (C) are factory adjusted in the analog version. To insulate system from process it is available as an option a non-return valve VNR series.



DIMENSIONAL DRAWINGS



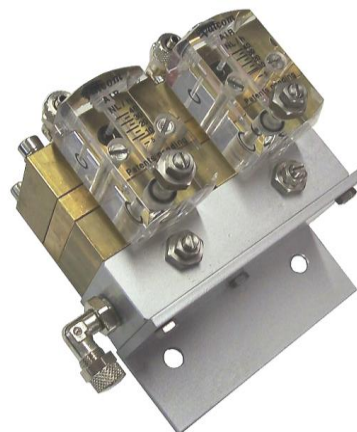
ORDERING CODE

For the ordering codes, please refer to the data sheet of the 27M and PR3 series products.

ACCESSORIES



Cod. VNR
Not return valve



Cod. PR3
Air flow regulator



Cod. FR20
Air filter regulator

and MORE

- DIN rail mounting bracket
- Complete control panel