Gas Detector

PWG-4EX series

Reliability

Innovations

A wide range of sensors

Information about the product

The gas detector is specifically designed for critical functions such as measuring, monitoring and detecting hazardous gases. It is intended for operation in areas with potentially explosive atmospheres. It can operate under harsh industrial conditions where environmental parameters may vary widely (high temperatures, corrosive gases or fumes, mist and dust). It can be installed in a variety of ways:

- either integrated into the Gas Safety System Sigma Gas,
- or installed as a stand-alone detector,
- or independently integrated with supervisory systems (e.g. by means of its 4..20 mA output signal or its RS-485 interface).

The gas detector has been developed to replace our earlier gas detector devices. PWG-4EX series is based on a completely new electronic design. It has a new measuring head (either 'FL' or 'FH') which is the fruit of a three year development. This new product offers greatly improved detection capabilities. The gas detector detector equipped with a pellistor sensor now offers a halved response time (T90)* and is rated among the fastest devices available on the market.

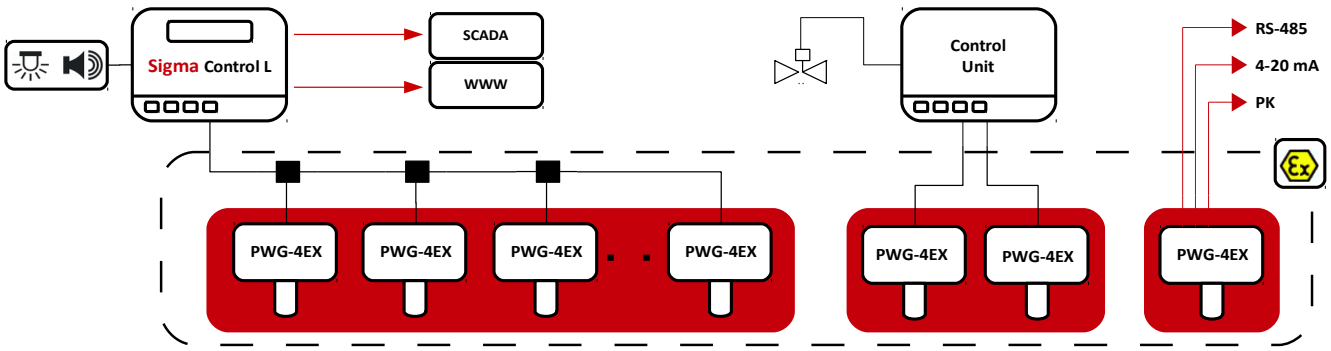
Further improvements include greater protection of the detector's measurement head against environmental effects, including moisture and dust. This is achieved by means of a PTFE membrane, which enables levels of protection up to IP67.

Other enhancements incorporated into the gas detector include:

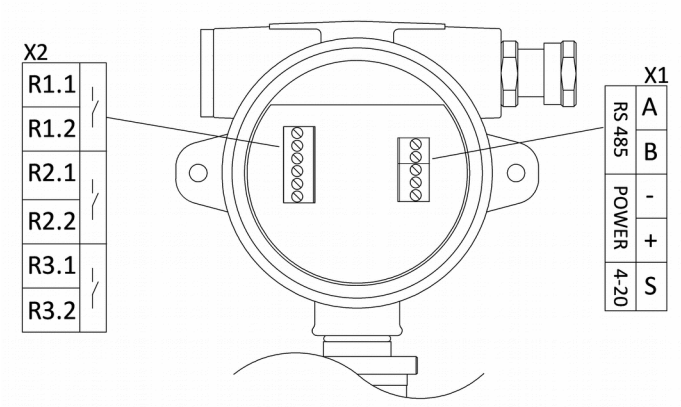
- Advanced interface for external connections,
- Power voltage range up to 50 V
- Mitigation of the long-term drift of catalytic sensors.

* in relation to the work of the detector with the HL head equipped with a pellistor sensor

Location and role of the device in Gas Safety System

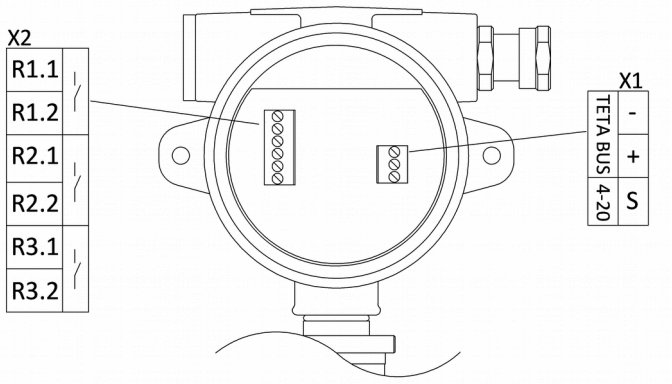


Electrical interface



1. Digital port RS-485

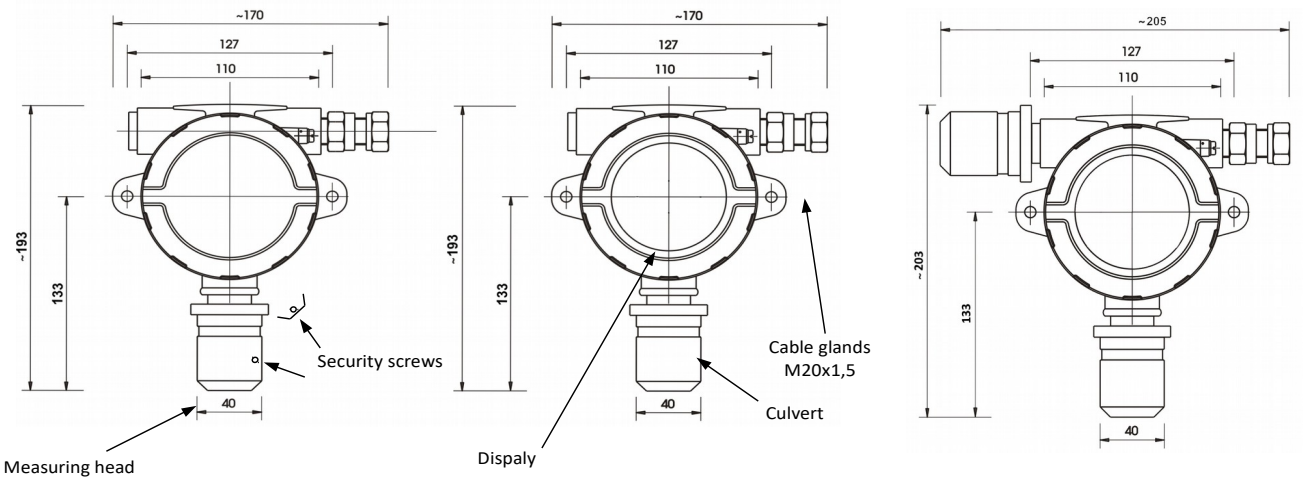
Symbol	Name	Pin	Description
X1	RS-485	A, B	Signal line RS-485 port
	POWER	-, +	Supply
	4-20	S	Current output 4 – 20 mA
X2	R1.1 – R3.2		Relays terminals



2. Digital port Teta Bus (option not available)

Symbol	Name	Pin	Description
X1	TETA BUS	-, +	Signal and supply line Teta Bus port
	4-20	S	Current output 4 – 20 mA
X2	R1.1 – R3.2		Relays terminals

Dimension



Without display	With display	With acoustic signaller

Technical specification

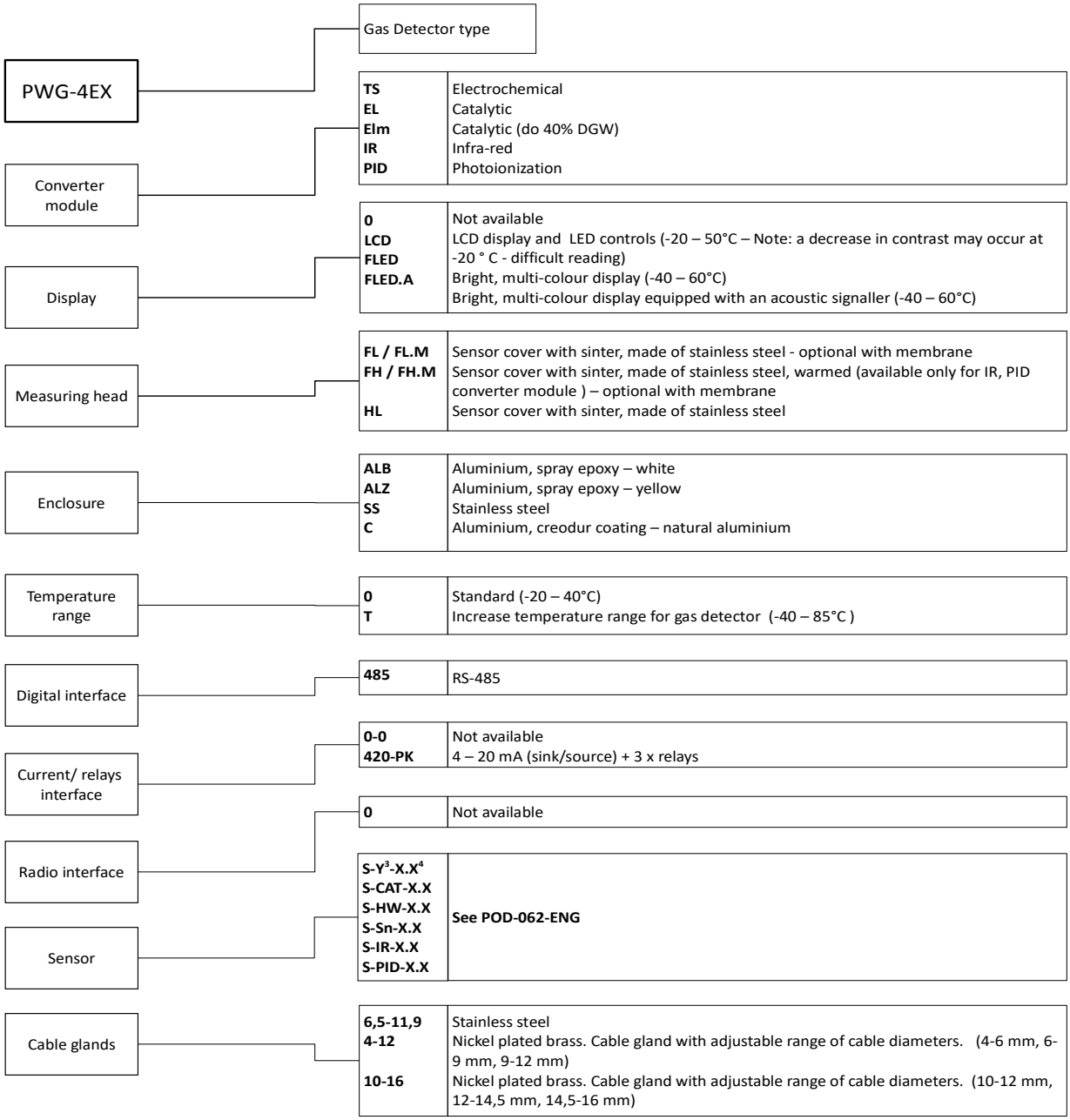
Power supply • Voltage Vcc • Power	15 – 50 V ⎓ 0,48 – 4 W	
Environment	In operation	Storage
• Ambient temperatures • Humidity • Pressure	-20 – 40°C/ -40 – 85°C 10 – 90% long term 0 – 99% short term without condensation 1013 ± 10% hPa Any of the above parameters can be limited by the parameters of the sensor	0 – 40°C 30 – 90% long term
ATEX	Ⓔx II 2G Ex d IIC T6-T5 Gb II 1D Ex t IEC 60079-29-1	
	T5: -40 < Ta < 85°C T6: -40 < Ta < 70°C	
IP	IP 63	
	IP 67 (measuring head FL.M, FH.M)**	
Time parameters	Methane: T_{90} = about 15 s Ethanol: T_{90} = about 17 s Propane: T_{90} = about 25 s	
Analog output parameters 4 – 20 mA • R_{OBC_MAX} • output type	300 Ω sink / source	
Digital output parameters • Relays	3 pcs Floating contacts, NO/NC 24 V ⎓ 0,2 A Not protected against overloading	

Digital communication parameters • RS-485 • Teta	RS-485, Modbus ASCII/RTU, Sigma Bus, 1200 - 115 200 baud Teta Bus
Integrated signalling equipment (optical)	Alphanumeric display 2x8 of the LCD type with LED indicators Multicolour status display FLED
Integrated signalling equipment (audible)	70 dB 1 m distance
Protection class	III
Cable glands • Cable diameter range • External thread	See the configurator below M20 x 1,5
Acceptable cables	0,5 – 2,5 mm^2 (cable lugs 2 x 1 mm^2 or 2 x 0.75 mm^2 should be used for double wires)
Enclosure material	• Aluminium spray epoxy / SS316L • Aluminium creodur epoxy / SS316L • SS316L
Weight	3,5 kg
Mandatory periodic inspection	Every 12 months (Calibration Certificate validity) – the time can be shortened because of the difficult working conditions
Mounting	• To the wall, 2 screw holes 4 mm, hole spacing 127 mm • We recommend using mounting brackets

** It may be possible that the detector fails to sense presence of gas when water prevents from flow of gas to the sensor but in no way it leads to physical damage of the gas detector.

Product marking

Product code	Device
PWG-4EX series	Gas Detector



e.g.: PW-044-SG4-TS-0-FL-ALB-0-485-0-0-0-S-CAT-X.X-10-16