

PolyGard® Single Point Controller SPC-X3-20XX for refrigerant gases and vapours

DESCRIPTION

Gas measuring, monitoring and warning controller based on state-of-the-art micro-technology with integrated sensor and internal buzzer for the continuous monitoring of the ambient air and detecting refrigerant gases and vapours. The SPC-X3 is provided with an input for one external analog transmitter. 4 alarm thresholds per sensor/transmitter are free programmable. Configuration and operation are possible via the logical, simple system menu structure without specific programming knowledge.

APPLICATION

The SPC-X3-20XX is particularly suitable for the leak detection in commercial applications such as cold-storage depots, ventilation systems, breweries, ice rinks etc.

In cooling systems the SPC-X3-20XX is employed for the leak detection of HCFC (hydrochlorofluorocarbon) and HFC (hydrofluorocarbon) cooling agents.

Free programmable parameters and set-points enable the individual adaptation to a variety of applications in the field of gas measuring and monitoring.

FEATURES

- Continuous monitoring
- Integrated gas sensor for Freons
- Modular design (plug-in technology)
- Standard version with display/LED/keyboard and internal buzzer
- Reverse polarity protected, overload-proof and short-circuit-proof
- (0) 4 – 20 mA / (0) 2 – 10V analog signal output
- 2 x relay outputs 30 VAC/DC, 0.5 A
- 2 x binary output, 30 VDC, 0.05 A
- 4 – 20 mA input for external transmitter
- Different housing versions
- Approved according to EN 61010-1; ANSI/UL 61010 1; CAN/CSA-C22.2 No. 61010-1
- LED flashing light in red (option)
- 2 x warning lights, colours: red – orange selectable (option)
- 1 x power light green (option)
- Up to 3 power relays (potential-free, 250 VAC/DC 5A) (option)
- External warning horn (87 dB) mounted on the housing (option)
- External multi-sound horn, mounted on the housing (option)
- 230 VAC power supply (option)
- Uninterruptible emergency power supply (option)
- Heating (option)
- Duct mounting (option)



Standard enclosure



SPECIFICATIONS

Electrical	
Power supply	18 - 28 VDC/AC, reverse polarity protected
Power consumption (without options)	130 mA, max. (2.5 VA)
Analog output, current or voltage selectable	0 (4) – 20 mA, load ≤ 500 Ω 0 (2) – 10 V, load ≥ 50 kΩ overload-proof and short-circuit-proof
Alarm relay (1)	30 VAC/DC 0.5 A, potential-free, SPDT
Alarm relay (1)	30 VAC/DC 0.5 A, potential-free, SPNO/SPNC
Binary output (2)	30 VDC / 0.05 A, open collector output
Analog input	4 – 20 mA overload-proof and short-circuit-proof, input resistance 200 Ω
Voltage for ext. analog transmitter	24 VDC max. load 50 mA
Visualisation	
Display	Two lines, 16 characters each
Status LED (4)	Normal operation- Fault- Alarm 1- Alarm 2
Operation	4 push-buttons – menu-driven
Buzzer (internal)	
Acoustic pressure	83 dB (A) (distance 200 mm) (0.6 ft.)
Frequency	2300 Hz
Gases	
Internal sensor	Refrigerant gases, Freons (see order inform.)
Sensor data	See corresponding datasheet of ADTX3 transmitter
External transmitter	Toxic gases, Ex gases, Freons, temperature, humidity, pressure, etc.
Operating environment	
Humidity	15 – 95 % RH non-condensing
Working temperature	-10 °C to + 50 °C (14 °F to 122 °F)
Storage temperature	5 °C to 30 °C (41°F to 86 °F)
Pressure range	Atmospheric ± 10 %
Physical	
Enclosure plastic type C, B und E	Polycarbonate
Flammability	UL 94 V2
Enclosure colour	RAL 7032 (light grey)
Dimensions type C and B (W x H x D)	130 x 130 x 75 mm (5.12 x 5.12 x 2.95 inch.)
Dimensions type E (W x H x D)	130 x 130 x 100 mm (5.12 x 5.12 x 3.94 inch.)
Weight	Approx. 0.6 kg (1.323 lbs.)
Protection class	IP 65
Installation	Wall mounting
Cable entry	Standard 3 x M 20
Wire connection	Screw type terminal, min. 0.25 mm ² (24 AWG) max. 2.5 mm ² (14 AWG)
Guidelines	
	EMC Directives 2004/108/EC Low Voltage Directive 2006/95/EC EN 61010-1:2010 ANSI/UL 61010-1 CAN/CSA-C22.2 No. 61010-1 CE
Warranty	1 year on material (without sensor)

GAS ALARM SYSTEMS

Options	
Power supply 230 VAC	90 to 250 VAC, 50/60 Hz, 0.5 A
Power relay	230 VAC, 5 A, potential-free, change-over contact
Emergency power supply	Supply duration 60 Min., maintenance-free
LED flashing light	IP65, LED, 3500 lm.
Warning light/power light	18 - 28 VDC/AC
Power supply	45 mA, max. (1.2 VA)
Consumption	IP 65
Protection class	
External horn	87 dB (A) (distance 1000 mm)
Acoustic pressure	3500 Hz
Frequency	18 - 28 VDC
Power supply	6 mA, max. (0.15 VA)
Consumption	
External multi-sound horn	85 -100 dB (A) (depending on sound type)
Acoustic pressure	28
Sound types	18 - 28 VDC
Power supply	6 mA, max. (depending on sound type)
Consumption	
Heating	3 °C ±2°C (37.5 °F ± 3.6°F)
Temperature controlled	- 30 °C (- 22 °F)
Ambient temperature	18 - 28 VDC/AC
Power supply	0.5 A; 12 VA
Power consumption	
Enclosure stainless steel, type 5	V2A steel, 1 mm, material 1.4301 corrosion resistant
Material	Natural, brushed
Colour	113 x 135 x 45 mm (4.45 x 5.31 x 1.77 inch.)
Dimensions (B x H xD)	ca. 0.5 kg (1.1 lbs.)
Weight	IP 55
Protection class	Wall mounting, pillar mounting
Mounting	Standard 2 x M 20
Cable entry	

GAS ALARM SYSTEMS

ORDER INFORMATION

				Power Supply			Enclosure		
				0	24 VAC/DC (standard)		C	Plastic (standard)	
				1	230 VAC		B	Duct mounting	
				2	230 VAC & UPS		5	Stainless steel (on request)	
								E	Plastic for option Power Relays, Warning lights

Relay 30 V, 0.5A	Relay 30 V, 0.5 A	Internal Buzzer (B)	Open Collect.	Standard configuration alarm outputs
--	--	--	A	Heating
--	--	B	--	Internal buzzer
--	--	C ¹	C ¹	External horn, 87 dB (max. 1 horn)
--	--	D	D	Extern. multi-sound horn (max. 1 horn)
--	--	1 ²	1 ²	LED flashing light red (max. 1 LED)
2	2	2	2	Power relays (max.3 relays)
4	4	4	4	Warning light orange (max. 1 orange)
5	5	5	5	Warning light red (max. 1 red)
7	7	--	--	Power relays & warning light orange
8	8	--	--	Power relays & warning light red

				Optional configur. alarm outputs
Alarm 1	Alarm 2	Alarm 3	Alarm 4	

		Communication protocol
		0 Without external interface
		1 RS 485 / DGC05 protocol
		2 RS 485 / MODBus RTU protocol
		3 RS 485 / customer specific

		Power light green
		0 Without
		1 With

		Language
		0 German
		1 English
		2 USA
		3 Dutch
		4 Danish
		5 Czech
		6 French
		8 Swedish

SPC-X3-20XX-X-XXXXXXXX:MB

¹ not with power relays
² not with warning light

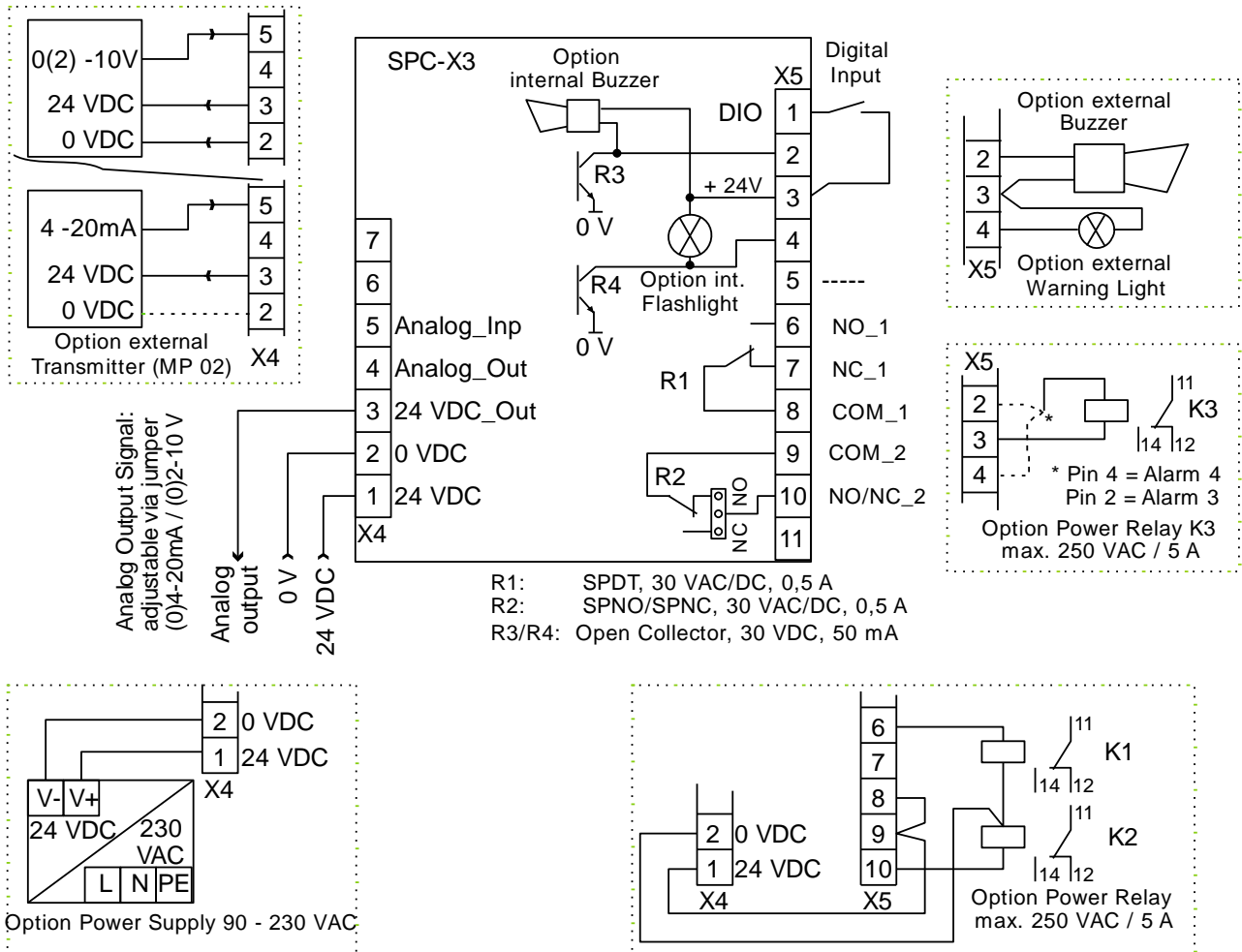
Type	Available measuring ranges (others on request)					
43-2070	R 22	HCFC	Semiconductor	20 – 2000 ppm		
43-2071	R 401a	HCFC	Semiconductor	20 – 2000 ppm		
43-2072	R 401b	HCFC	Semiconductor	20 – 2000 ppm		
43-2073	R 402a	HCFC	Semiconductor	20 – 2000 ppm		
43-2074	R 402b	HCFC	Semiconductor	20 – 2000 ppm		
43-2075	R 408a	HCFC	Semiconductor	20 – 2000 ppm		
43-2076	R 409a	HCFC	Semiconductor	20 – 2000 ppm		
43-2064	R 123	HCFC	Semiconductor	20 – 2000 ppm		
43-2077	R 134a	HFC	Semiconductor	20 – 300 ppm	20 – 2000 ppm	
43-2078	R 404a	HFC	Semiconductor	20 – 300 ppm	20 – 2000 ppm	
43-2079	R 416a	HFC	Semiconductor	20 – 300 ppm	20 – 2000 ppm	
43-2069	R 507	HFC	Semiconductor	20 – 300 ppm	20 – 2000 ppm	
43-2068	R 410a	HFC	Semiconductor	20 – 300 ppm	20 – 2000 ppm	
43-2067	R 411a	HFC	Semiconductor	20 – 300 ppm	20 – 2000 ppm	
D3-2064	R 123	HCFC	Infrared	0 – 1000 ppm	0 – 2000 ppm	
D3-2065	R 125	HFC	Infrared	0 – 1000 ppm	0 – 2000 ppm	
D3-2070	R 22	HCFC	Infrared	0 – 1000 ppm	0 – 2000 ppm	
D3-2077	R 134a	HFC	Infrared	0 – 1000 ppm	0 – 2000 ppm	
D3-2078	R 404a	HFC	Infrared	0 – 1000 ppm	0 – 2000 ppm	
D3-2083	R 407a	HFC	Infrared	0 – 1000 ppm	0 – 2000 ppm	
D3-2080	R 407c	HFC	Infrared	0 – 1000 ppm	0 – 2000 ppm	
D3-2068	R 410a	HFC	Infrared	0 – 1000 ppm	0 – 2000 ppm	
D3-2069	R 507	HFC	Infrared	0 – 1000 ppm	0 – 2000 ppm	
D3-2063	R 1234yf	HFC	Infrared	0 – 1000 ppm	0 – 2000 ppm	



Example: Single Point Controller SPC-X3-20XX for Freon R 134a, semi-conductor sensor, plastic housing, 230 VAC supply, 2 x power relay, internal buzzer, menu language English, incl. factory calibration 20 – 300 ppm,

Order No: SPC-43-2077-E-122B0001:20-300ppm

CONNECTING DIAGRAM



Note:

The alarm outputs R3 and R4 are designed as open collector outputs. Warning lamps / horn combination units with common ground can therefore not be connected!