

Refrigerant Gas Analog Transmitters

Specifications subject to change without notice. | USA 200131 | Page 1 of 3



DESCRIPTION

Refrigerant gas transmitter with two-beam infrared sensor continuously monitors ambient air for the presence of hydrochlorofluorocarbon (HCFC) and hydrofluorocarbon (HFC) refrigerants. Integrated temperature and drift compensation yield high long-term stability and accuracy as well as target gas selectivity, with a recommended calibration interval of 5 years. Three-wire “sourcing” transmitter, field configurable for a current (0/4-20 mA) or voltage (0/2-10V) output, with overload and short circuit protection. NEMA 4X rating provides maximum protection from dust and water damage.

APPLICATION

For leak detection in commercial and industrial cooling systems, with refrigerant gases (HCFC and HFC) as cooling agents. Flexible 18-28 VAC/DC power and industry standard current or voltage output signals, for easy installation and connection to local controllers, annunciators, or building automation systems.

FEATURES

- Continuous monitoring
- Dual-beam, non-dispersive infrared (NDIR) sensor for high selectivity and long-term reliability
- ± 20 ppm accuracy (± 40 ppm for 0-2000 ppm range)
- AC or DC powered
- (0)4-20 mA, (0)2-10 VDC output, selectable
- Life expectancy > 10 yrs.
- Calibration interval > 5 yrs.
- Modular plug-in technology
- High-impact polycarbonate enclosure, NEMA 4X standard
- 1/2" conduit adapter included
- Two-stage relay output control, optional

SPECIFICATIONS

Electrical

Power supply 18-28 VAC/DC, polarity protected
 Power consumption 45 mA (1.1 VA), max.

Sensor Performance

Gas detected R123, R125, R134a, R404a, R407a (factory configured)
 Sensor element Dual-beam, non-dispersive infrared (NDIR)
 Measuring range 0-500 ppm for R123 only; 0-1000 ppm; 0-2000 ppm

Accuracy

- 0-500 / 0-1000 ppm ± 20 ppm, max.
 - 0-2000 ppm ± 40 ppm, max.

Response time

t₉₀ < 30 sec.

Long-term zero-point drift

< 2% f.s. range/year

Long-term output drift

< 3% f.s. range/year

Sensor life expectancy

> 10 years

Recommended cal. interval

> 5 years

Type of Control

General Continuous analog output proportional to sensor measurement input
 Analog output (0)4-20 mA, load ≤ 500 Ω, or (0)2-10 VDC, load ≥ 50 kΩ

Optional contact outputs

(2) relays, potential free

Environmental

Permissible ambient

- working temperature 14°F to 104°F (-10°C to 40°C)
 - storage temperature -4°F to 104°F (-20°C to 40°C)
 - humidity 0 to 95% RH, non condensing
 - working pressure 1 bar -20%/+10%

Physical

Enclosure “A”, standard

- material Polycarbonate, UL 94 V2, fire-retardant
 - conformity UL 50
 - color Light gray
 - protection NEMA 4X (IP65)
 - installation Wall (surface) mounted, or single gang electrical box

Dimensions (H x W x D)

5.12 x 3.70 x 2.25 in. (130 x 94 x 57 mm)

Cable entry

1 hole for 1/2 in. conduit for wall (surface) mounting, and 1 hole on back side of base plate for single gang electrical box mounting

Wire connection

Terminal blocks, screw type terminal

PolyGard® AT-2000 V3



- NRTL Performance Tested
- EMC Directives 2014/30/EU
- EN 61010-1:2010
- ANSI/UL 61010-1
- CAN/CSA-C22.2 No. 61010-1
- CE

SPECIFICATIONS

Physical (cont...)

Wire size Min. 24 AWG (0.25 mm²),
Max. 14 AWG (2.5 mm²);
*each terminal connection can
handle two 18 AWG wires*

Weight 0.6 lb (0.25 kg)

Calibration Adjustment via onboard zero
push-button and gain potentiometer

Conforms to

NRTL Performance Tested
EMC Directives 2014/30/EU
EN 61010-1:2010
ANSI/UL 61010-1
CAN/CSA-C22.2 No. 61010-1
CE

Warranty

Two years material and
workmanship, 12 months normal
exposure for sensor element

OPTION

Relay Package

Type (1) SPDT (R1), and (1) SPST-NC
or SPST-NO (R2), jumper
selectable

Contact rating 30 VAC/VDC, 0.5 A, max.

Setpoint (factory set) Lo/SPDT = 50 ppm*
Hi/SPST = 100 ppm*

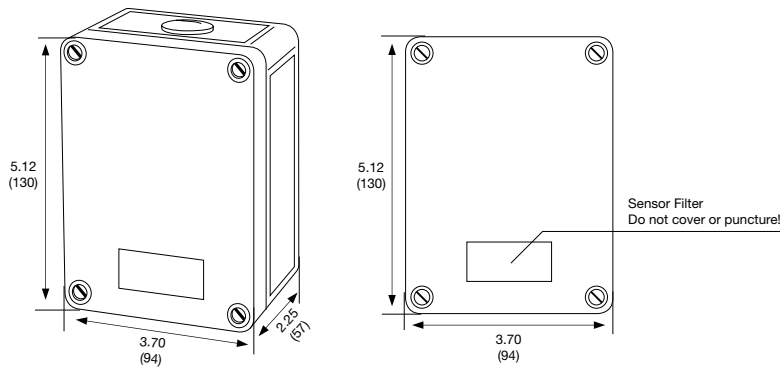
Switching differential (factory set) 15 ppm*
* other values on special request
at time of ordering

Relay mode (factory set) De-energized for each relay,
energized (fail-safe) mode on
special request

Status indicator (2) LEDs, one for each relay

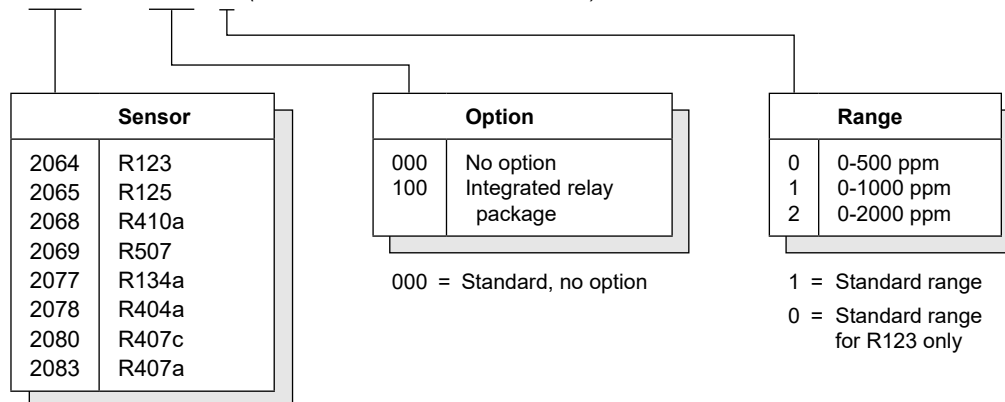
DIMENSIONS

inches (mm)



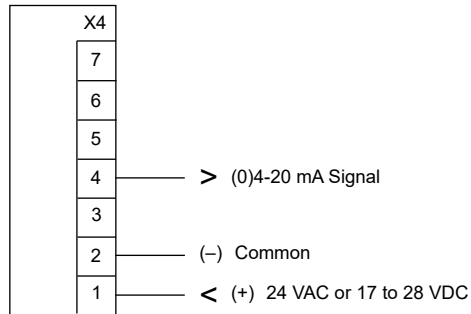
ORDERING INFORMATION

AT- 2000 - A - 000 - 0 (Product label "AT-20xx-A-000-0 V3")

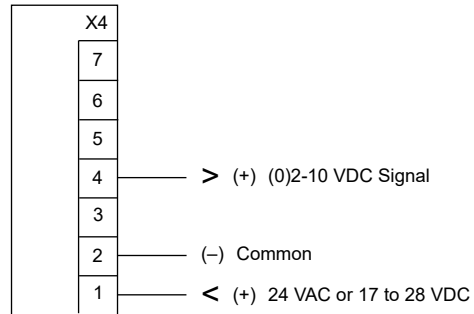


WIRING CONFIGURATION

AT-20xx
(0)4-20 mA signal, 3-wire, 24 VAC or 24 VDC



AT-20xx
(0)2-10 VDC signal, 3-wire, 24 VAC or 24 VDC

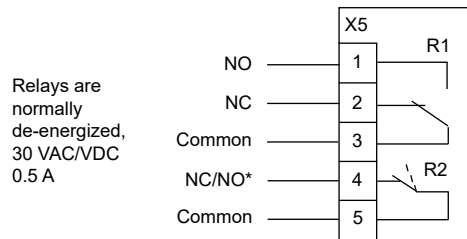


Jumper output signal range selectors:

- V-A Over both pins = VDC
Pins not covered = mA
- 0-20% Over both pins = 4-20 mA / 2-10 VDC
Pins not covered = 0-20 mA / 0-10 VDC

Notes: *Twisted, shielded wire is recommended.*
Shield should be grounded only at the controller.
DO NOT ground shield at both ends!
Conduit should be "sealed" to prevent condensation from dripping into transmitter enclosure.

Optional relay package



*Jumper SPST relay NC/NO selector:

- NC Covers top two pins = SPST-NC
- NO Covers bottom two pins = SPST-NO

Note: *When using AT-XXXX transmitter w/relay package as a stand-alone unit (no connection to a controller), pins on jumpers "V-A" and "0-20%" must be covered.*
See Jumper output signal range selectors.

INSTALLATION

AT-20XX
Transmitter must be mounted in the vertical position!

