NETC3 DIN-R Cyber Head

Complete head for Refrigerant Leak Detection

DS5786 Rev.0 dated 26/02/2026

BBS BLACK BODY gas technology
IR INFRARED gas technology
K KATHAROMETER gas technology
µ PROCESSOR gas technology

Key Features

- NDIR gas detection: no false alarm, no regular routine maintenance required
- ATEX/IECEx certified stainless steel or aluminium flameproof Ex d enclosure
- II 2GD marking available with NET-GD3 adapter
- 15+ years of expected lifetime
- Reliable detection of R-290, A2L Refrigerants
- Local relays for threshold and fault alarms
- Easy integration with MODBUS protocol on RS-485
- ¾", 1"or M20 back thread for connection to the detector's main body
- Front M46 thread for connection to flanges and calibration caps

General Description

The NETC3 DIN-R Cyber Head by N.E.T. is a high-performance enclosure — available in stainless steel or aluminium — housing with a specific gas sensor and integrated electronics. Designed for versatility, it can serve as a core component for fixed gas detection systems or as a fully compliant, standalone field device.

The NETC3 DIN-R Cyber Head is the ideal solution for gas detection system manufacturers, heat pump/chiller or other refrigerant appliance manufacturers looking to streamline their development process. By adopting this ready-made solution, users can avoid the substantial investment required for:

- **Sensor Sourcing**: Identifying or developing specialised sensors.
- **R&D**: Developing complex electronics and firmware for signal processing, compensation, and linearisation.
- **Engineering**: Designing proprietary detection heads.
- **Certification**: ATEX/IECEx certification process.

The NETC3 DIN-R Cyber Head supports the full range of N.E.T. Infrared (IR) sensors and is delivered pre-configured and pre-calibrated to the customer's specific requirements.

The NETC3 DIN-R Cyber Head features RS-485 Modbus output, alongside dedicated fault and alarm relays, operating on a 12-24VDC power supply.

The flameproof enclosure includes an integral stainless steel sintered filter to ensure safe atmospheric sampling. An optional adapter is available upon request to provide an IP65 rating and dust protection (II 2GD protection).

The NETC3 DIN-R Cyber Head can be opened, allowing straightforward sensor replacement at the end of its operational lifespan.

The NETC3 DIN-R Cyber Head features an M46 external thread for easy accessory mounting. For rear integration into existing detector housings, three thread options are available: 3/4", 1", or M20.

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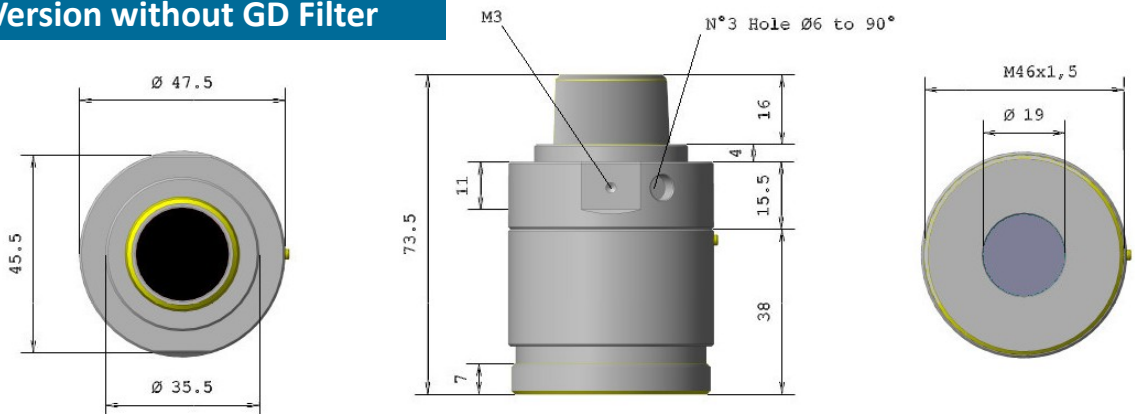
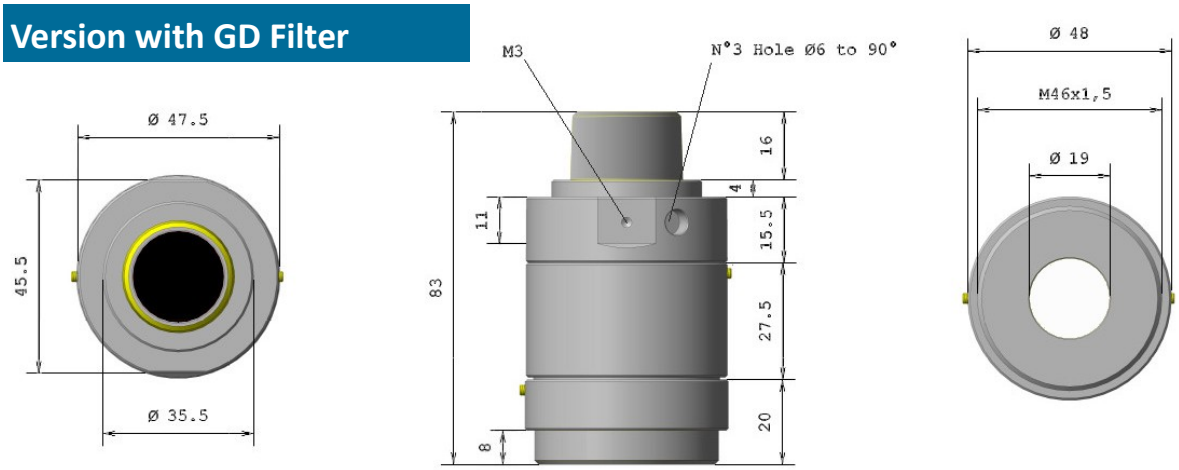
Mechanical specifications

Version without GD Filter

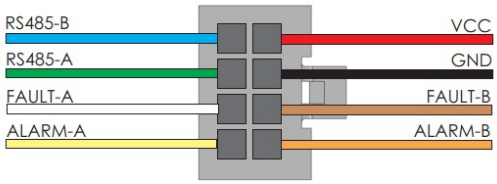


Version with GD Filter



All measures are in mm.

Wiring scheme



Connector with 8 wires Molex micro fit 3.0 code:43025-0800

Possible Mating Connector Molex code: 43020-0801

Certification details

Statement of Conformity	**Test report number**	Pending	
	Reference standards	IEC TS 63542 ED1; IEC/EN 60335-2-40 Annexx LL (ed.7)	
Statement of Conformity	**Test report number**	722266211 from Tüv SUD	
	Reference standards	IEC 60079-29-1	
Safety Integrity Certification	**Test report number**	Pending	
	Reference standards	EN 61508:2010 Parts 1-7, EN 50402:2017	
EMC Certification	**Test report number**	Pending	
	Reference standards	EN IEC 61326-1:2021; EN 50270:2015;	
ATEX/IECEx certification details	**Certificate number**	Pending	Pending
	Marking (only gas)	II 2G Ex db IIC T6 or T5 Gb[(1)]	Ex db IIC T6 or T5 Gb[(1)]
	Marking (gas and dust, with dust cover)	II 2D Ex tb IIIC T85°C or T100°C Db IP65[(1)]	Ex tb IIIC T85°C or T100°C Db IP65[(1)]

[(1)] The temperature class (T6 or T5) depends on the sensor power dissipation inside the sensor head and is thus dependent on the type of sensor used. See certificate for details.

Available gases

- R-290 (0-2.1%vol)
- R-1234yf (0-6.2%vol)
- R-1234ze (0-6.5%vol)
- R-32 (0-14.4%vol)
- R-454a (0-6.3%vol)
- R-454b (0-7.7%vol)
- R-454c (0-6.2%vol)
- R-455a (0-11.8%vol)
- R-744 (0-1%vol, 0-5%vol)

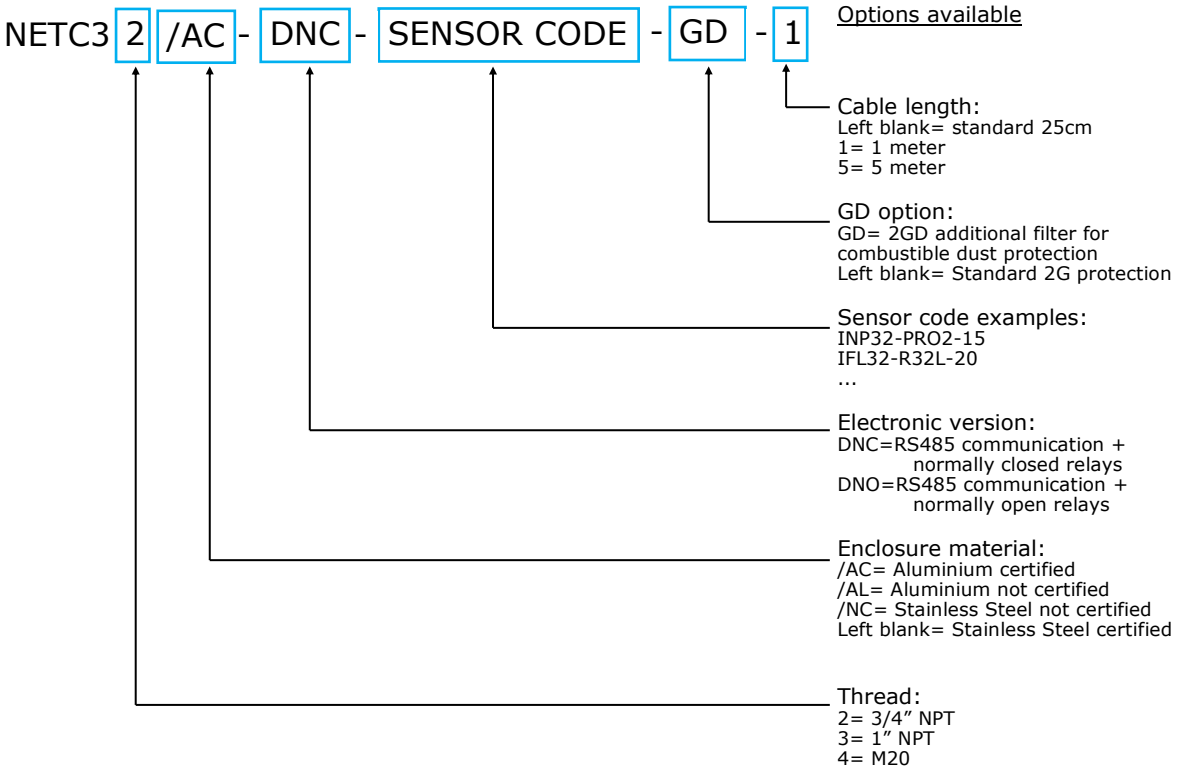
Product specifications

General	**Sensing Element:**	NDIR sensor, katharometric
	Operating temperature range	-40 +60°C
	Storage temperature range	-40 +85°C
	Maximum temperature cycle variations	± 1°C/min
	Operating humidity range	0-95% Relative with maximum dew point 40°C
	Operating pressure range	800-1200 mBar
	Enclosure	Stainless Steel, Aluminuim
	Enclosure Protection	IP65 (only with GD dust cover)
	Calibration	Individually calibrated with temperature compensation. Test report supplied.
	Weight	520 gr (Stainless Steel) 240 gr (Aluminuim)
	MTBF	> 15 years (IR Source MTTF > 15 years)
Measurement	**Range**	%vol ; ppm
	Alarm Threshold	Minimum threshold 10%F.S
	Alarm hysteresis	2,5% F.S
	Response time	T_{90} <30 seconds
	Accuracy*	±2% F.S @Thresholds < 50%F.S ±5% F.S @Thresholds ≥ 50%F.S
	Resolution	Depend by the sensor
	Temperature Performance	±5% F.S
	Pressure dependence	0.1 % to 0.2 % value per hPa
Electrical	**Power Voltage**	Nominal 12-24VDC±10%
	Current Requirements	<100 mA
	Warm up time	60 s for full operation @ 25 °C 1 hour for full specification @ 25 °C
Signal Output	**Relays connection**	1 Fault+1 Alarm SSR relays Normally closed or open. 350mA 50Vp (350mA 50Vp @ 60°C)
	Relay ON resistance	2 Ω
	Digital communication	Modbus protocol RS485 (Termination resistance of 120Ω normally present)
	Baud Rate	4800; 9600; 19200; 38400 bps

* Test conditions: 25°C ambient temperature and 1000hPa absolute pressure

Ordering details

When making an order, we kindly ask our customers to specify the basic physical and electrical properties that are needed for their specific application. This is made through the part number here below. The squared fields of the part number below can be modified according to the options on the right.



Warranty and warning

The WARRANTY of the product is 3 years from the purchased date against defects in materials or production. This warranty however is not valid for articles that have been broken, repaired by a third person or not used according to the instructions contained in this document or supplied with the products, related to the storage, installation, operation, maintenance, or servicing of the products.

Recalibration of the sensor will void the calibration warranty

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