



NETC3 DIN-R Cyber Head

Complete head for Refrigerant Leak Detection

055786 Rev.2 dated 11/05/2026



Key Features

- NDIR or TC gas detection: no false alarms, no regular maintenance routine required
- ATEX/IECEX certified stainless-steel or aluminium flameproof Ex d enclosure
- II 2GD marking and IP65 rating available with NET-GD3 adapter
- 15+ year expected lifetime
- Reliable detection of R-290, A2L Refrigerants
- Local relays for threshold and fault alarms
- Easy integration with MODBUS protocol on RS-485
- 3/4", 1" or M20 back thread
- 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 — with a specific gas sensor and integrated electronics. Designed for versatility, it can be used 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 (NDIR) and Thermal Conductivity (MAK) 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.

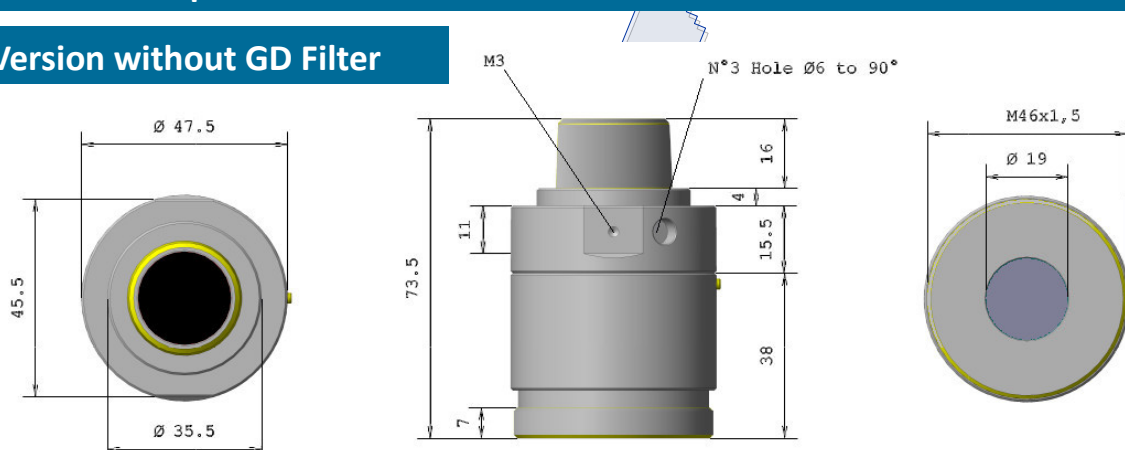
The flameproof enclosure includes an integral stainless steel sintered filter to ensure safe atmospheric sampling. An optional adapter is available upon request to provide an IP65 rating and dust protection (II 2GD protection).

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

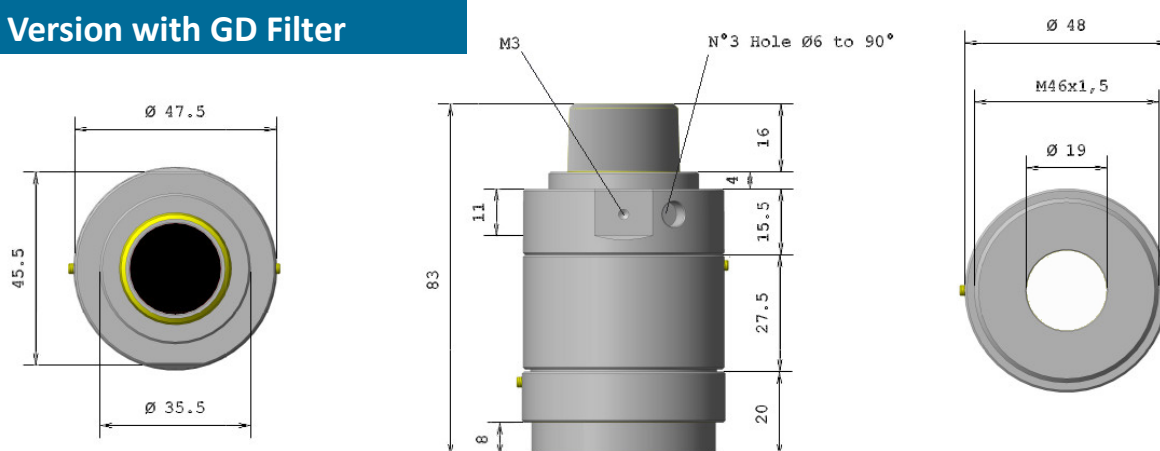
The NETC3 DIN-R Cyber Head features an M46 external thread for easy accessory mounting. For rear integration into existing detector housings, three thread options are available: 3/4", 1", or M20.

Mechanical specifications

Version without GD Filter



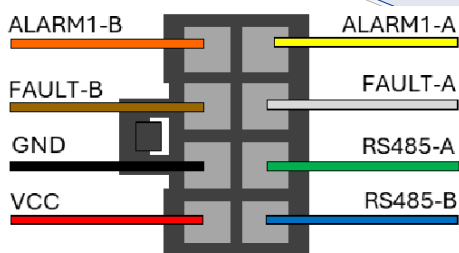
Version with GD Filter



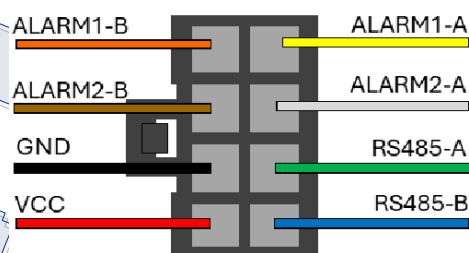
All measures are in mm.

Wiring scheme

1 Alarm+1 Fault version



2 Alarms version



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 Annex 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	EMCTR_187451-0	
	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)

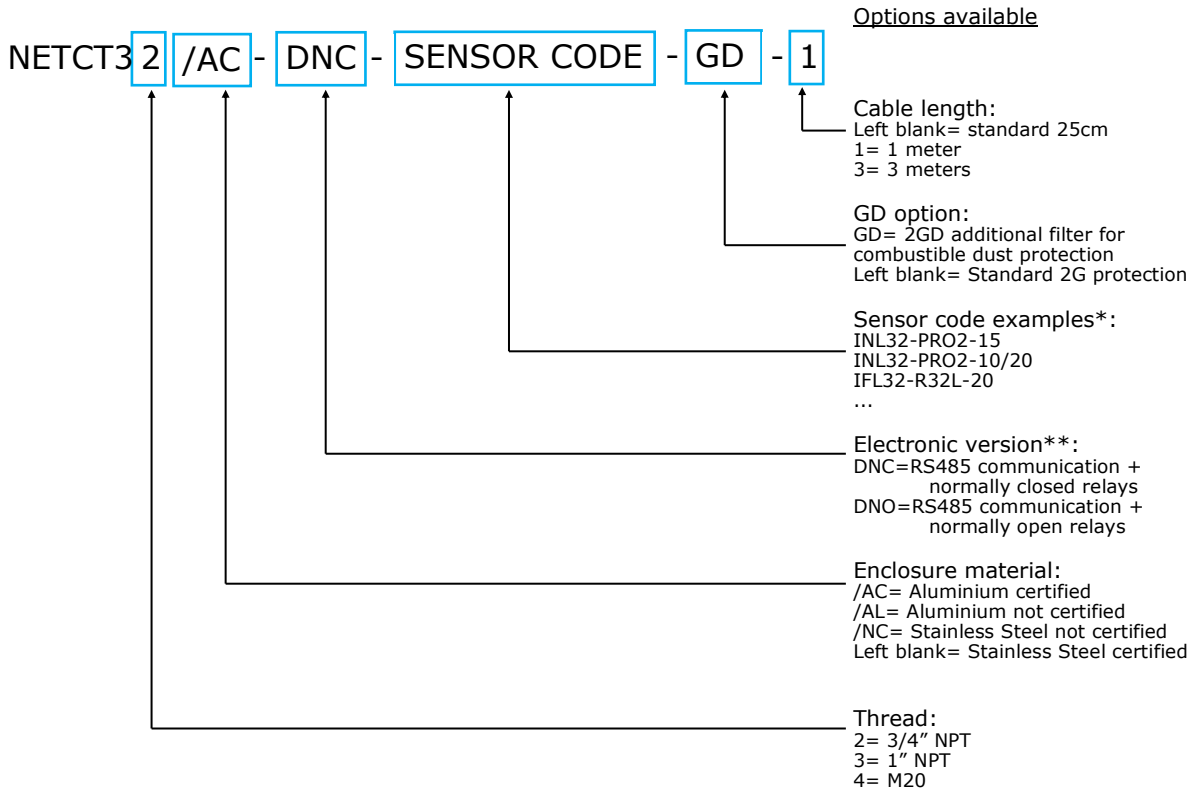
Product specifications

General	Sensing Element:	NDIR or Thermal Conductivity sensor
	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, Aluminum
	Enclosure Protection	IP65 (only with GD dust cover)
	Calibration	Individually calibrated with temperature compensation. Test report supplied.
	Weight	Approx. 550g (Stainless Steel) Approx. 250g (Aluminum)
	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 <30s (<60s with GD filter)
	Accuracy*	±2% F.S @Thresholds < 50%F.S ±5% F.S @Thresholds ≥ 50%F.S
	Resolution	See sensor specifics
	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 specifications @ 25 °C
Signal Output	Relays connection	1 Fault+1 Alarm SSR relays Normally closed or open or 2 Alarm SSR relays Normally closed or open 350mA 50Vp (350mA 50Vp @ 60°C)
	Relay ON resistance	2 Ω
	Digital communication	Modbus protocol on 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 sending an order, we kindly ask our customers to specify the basic physical and electrical properties that are needed for their specific application. This is achieved through the part number below. The highlighted fields of the part number below can be modified according to the options on the right.



*INL32-PRO2-15 this is code with 1 alarm level at 15%F.S

INL32-PRO2-10/20 this is code with 2 alarm levels at 10%F.S and 20%F.S

** Normally open means that once the head is powered and it is in Normal State (no alarm/no fault) both relays are closed whereas in case the head is not powered then the relays are open).

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

N.E.T. has a policy of continuous development and improvement of its products. As such the specification for the device outlined in the data sheet may be changed without notice. In case of modification of the product, N.E.T. disclaims all liability.

No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of N.E.T. For permission requests or technical support please contact or write to the address below:

N.E.T. SRL
Via Campania, 5 | 20006 | Pregnana Milanese | MI | Italy
T +39.02.9354.4190
E info@nenvitech.com
www.nenvitech.com