

Technical Information

Temperature Converter RCV-NMT NCT530

NCT530-7 External type



Application

Convert resistance temperature detection (RTD) signal to HART®.

Typical multi-core RTD sensors

- RCV11 (RCV1100)
- RCV12 (RCV1200)

Features and benefit

- Enables migration to HART® transmitter while continuing use of existing RTD average temperature sensor
- Digital HART® output to transmitters
- E.g. Proservo NMS5/NMS7
- E.g. Tank Side Monitor NRF590

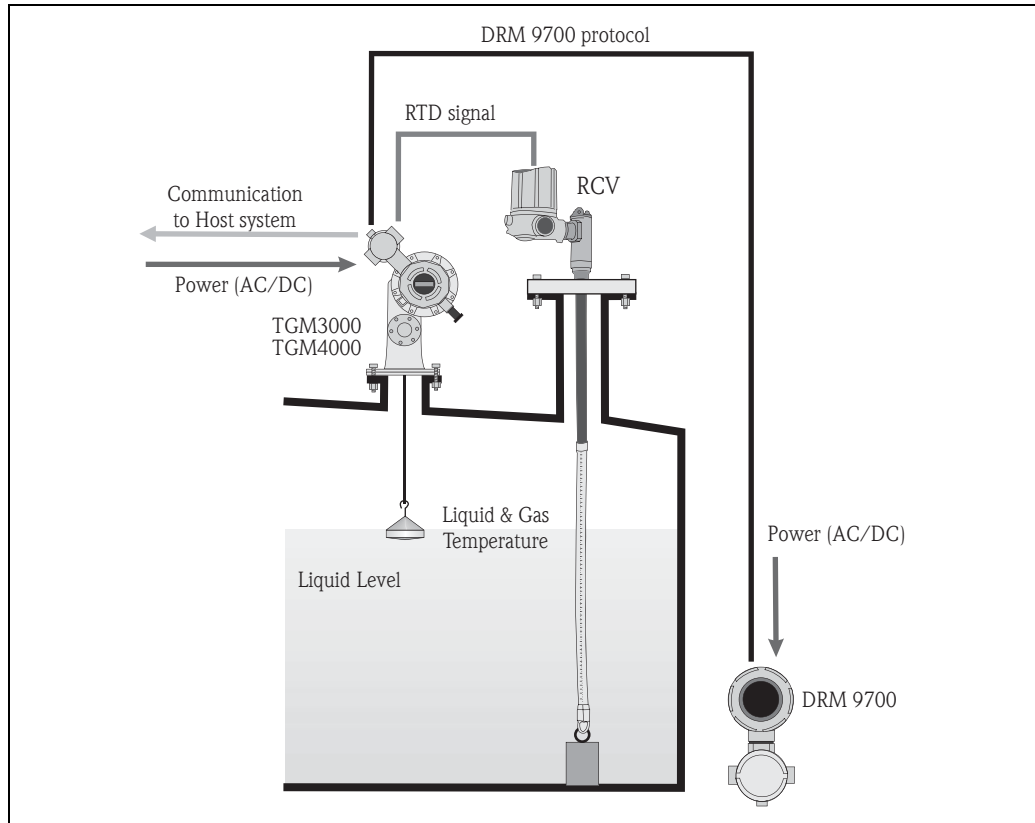
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Function and system design

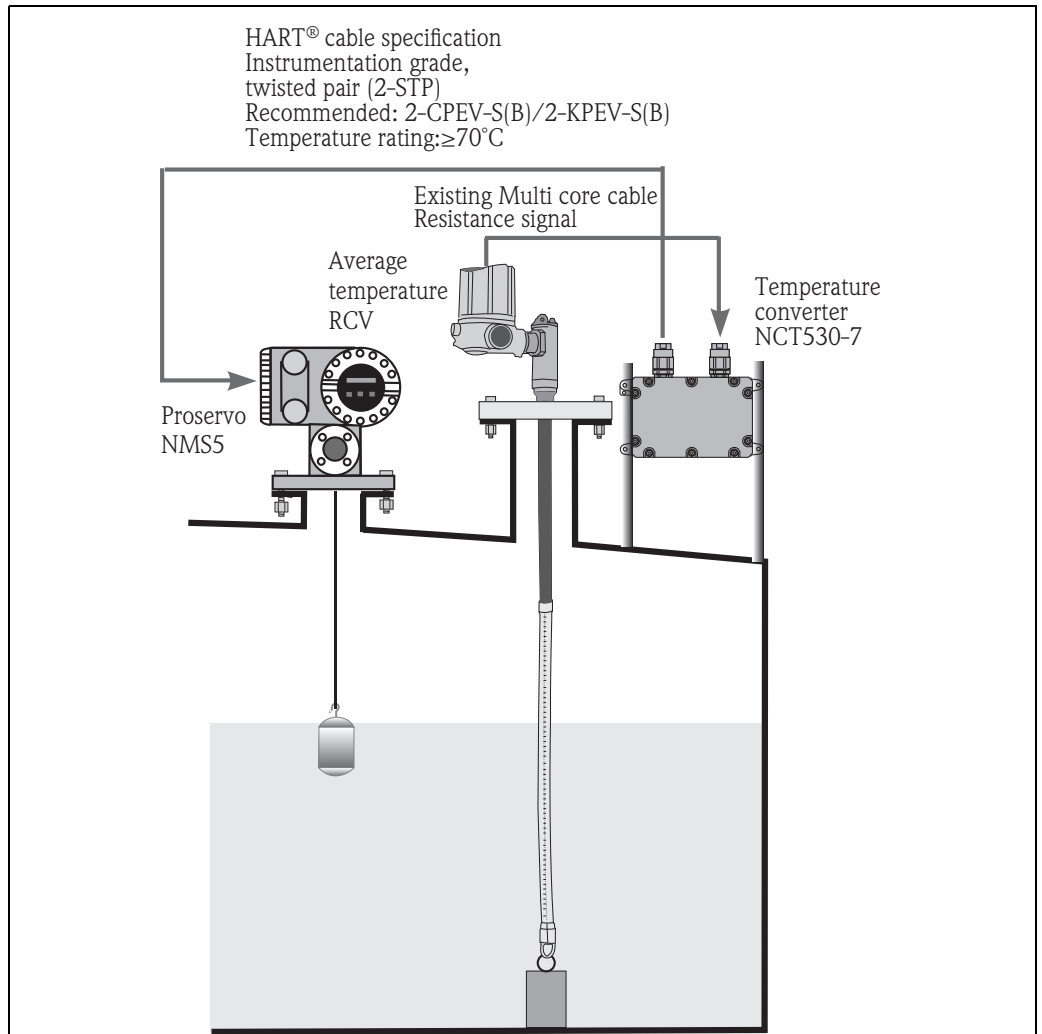
Existing system layout

Existing device configurations may include legacy average temperature sensors such as RCV11 (RCV1100), RCV12 (RCV1200), which are connected to TGM3000 or TGM4000 servo gauge transmitters. The RTD signal from RCV11/RCV12 is input directly into TGM3000/TGM4000, where the signal is converted to digital or analog 4-20mA signal. In this case up to 12 cores may extend between the average temperature sensor and the transmitter.



NCT530 system layout

NCT530 is useful when the existing transmitter is upgraded to a HART® input device, but the RTD average temperature sensor continues in place. For example, TGM4000 is upgrade to NMS5 Proservo, but the existing RCV12 cannot be replaced because the tank is in operation. In this case, NCT530 provides signal conversion, from RTD out put of RCV to HART® input for NMS5 Proservo.



Input

Temperature signal Maximum 10x JPt or Pt100

Output

Converted Temperature signal 2-wire digital HART®

Auxiliary Energy

Supply voltage DC16V~DC30V

Power consumption 6mA

Grounding The NCT530 must be grounded to the tank potential before communication and power connections are made. The connections ($A \geq 4\text{mm}^2$) from each outer ground plug of the NCT530 to the tank ground must be made before any other wiring connections are made. All grounding must be compliant with local and company regulations and checked before the equipment is commissioned.

Performance Characteristics

Reference operating conditions Measuring range -50 to +200C°

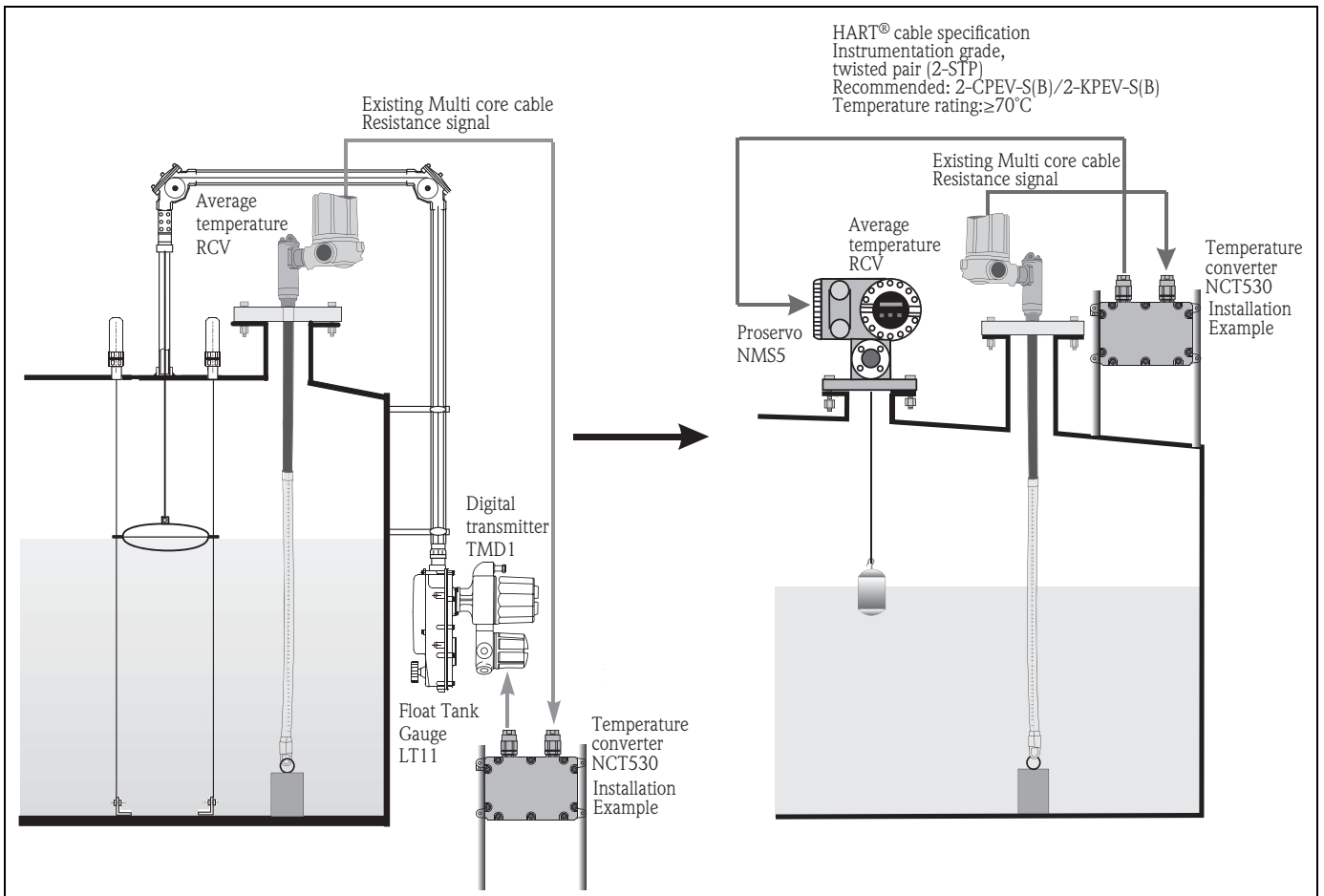
Conversion accuracy $\pm 0.15\text{C}^\circ$ ($\pm 0.27\text{F}^\circ$)

Ambient conditions

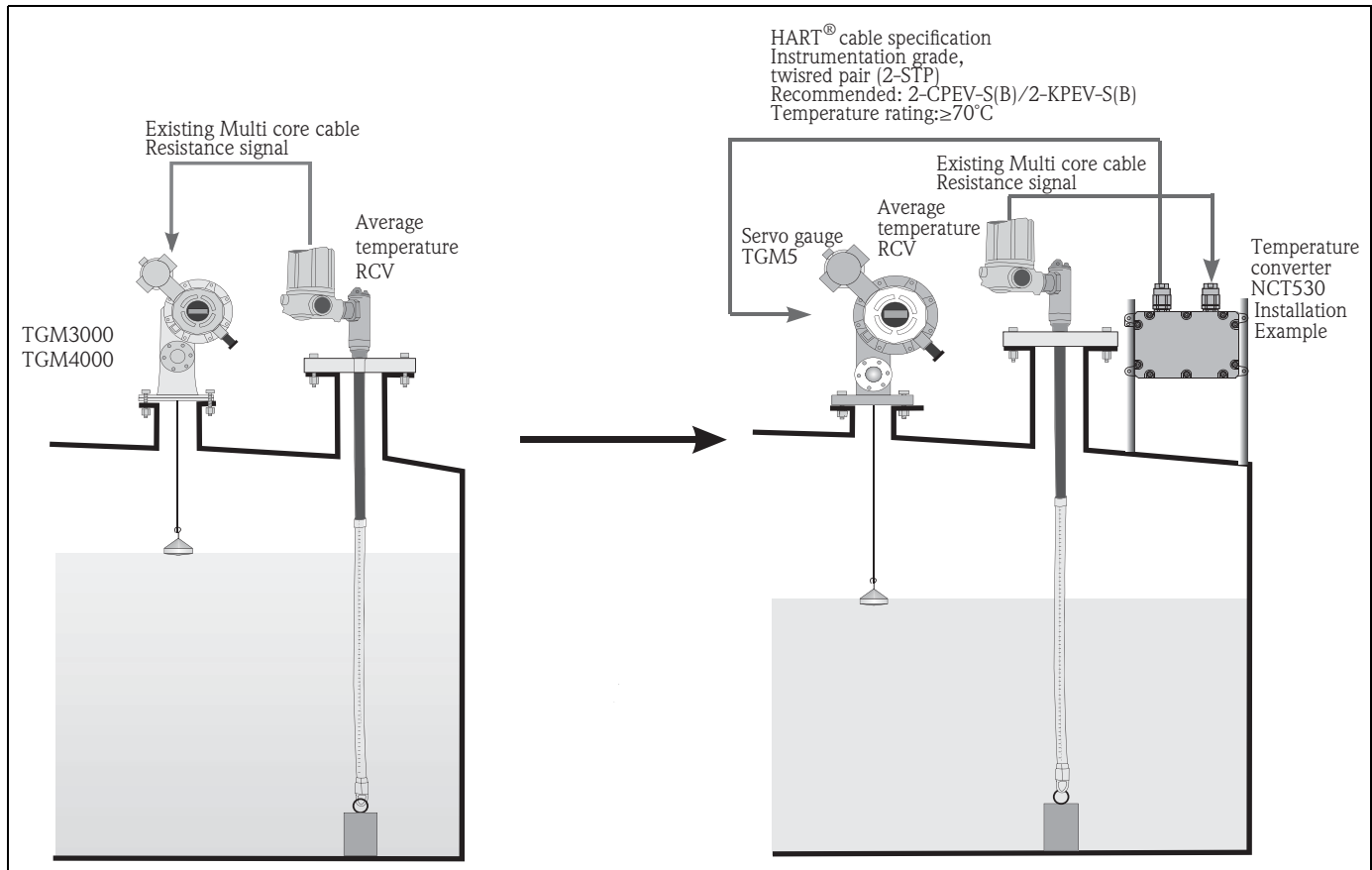
Ambient temperature range -20 to +60 C°

Operating conditions

System Overview with Proservo (Flameproof enclosures "d")

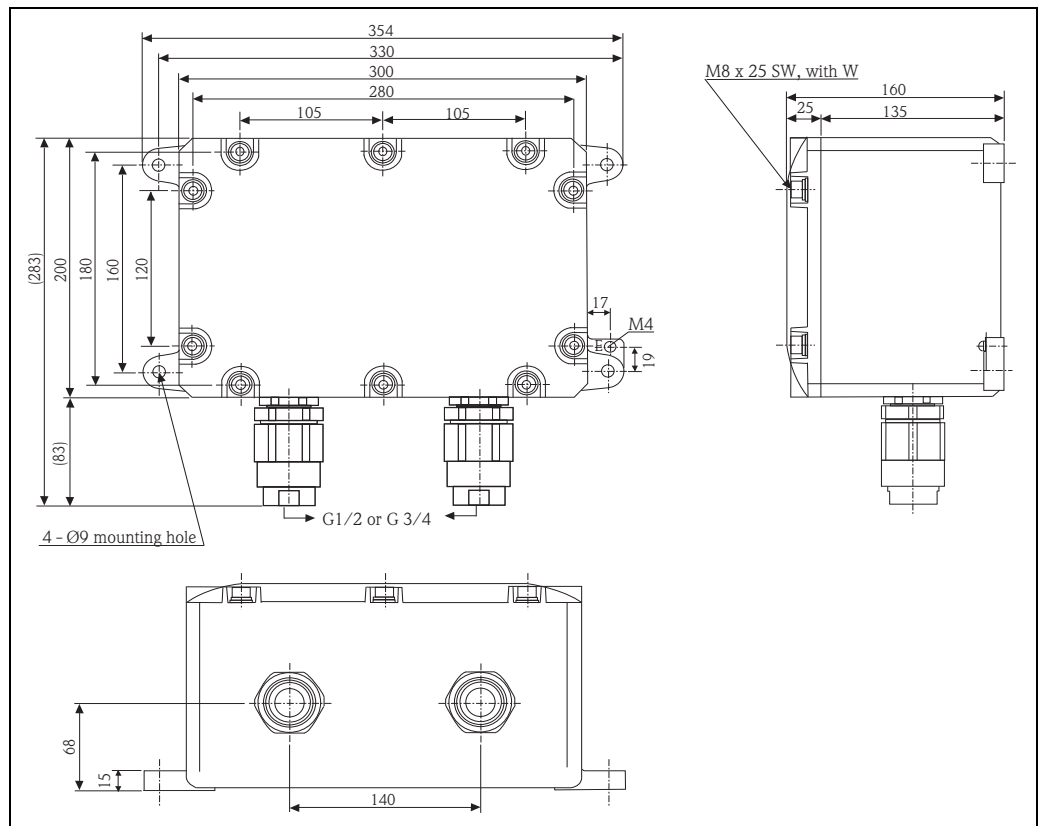


**System Overview with TGM5
(Flameproof enclosures "d")**



Mechanical construction

Design, Dimensions



Weight

Approx. 10kg

Material

Cover: AC7A-1, Body: AC7A-1, O-ring: NBR, Hexagon socket bolt: SUS304

Certificates and approvals

Ex approval

TIIS
TIIS Ex d IIB T4

Protection class

IP67

Registered trademarks

HART®
Registered trademark of HART Communication Foundation, Austin, USA

Order Information

NCT530-7

010	EN Converter:				
	7	External type			
020	EN Approval:				
	0	Weather proof IP67			
	1	Ex d IIB T4, IIIS			
	9	Special version, TSP-no. to be spec..			
030	EN Cable Entry:				
	G	2 x gland G1/2, external type			
	H	2 x gland G1/2, G3/4, external type			
	J	2 x gland G3/4, auxiliary type			
	Y	Special version, TSP-no.to be spec.			
040	EN Element Type:				
	1	Pt100, MRT			
	2	Pt100, MST			
	3	JPt100, MRT			
	4	JPt100, MST			
	9	Special version, TSP-no.to be spec.			
050	EN Temperature Range:				
	1	-50...+200°C			
	9	Special version, TSP-no.to be spec.			
NCT530-					Order code

Documentation

Technical Information

TI 006N
Proservo NMS5

TI002N
Average Temperature RCV

Operating Instructions

KA 1005N
Temperature Converter RCV-NMT NCT530
NCT530-7 External type

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