HB Products

WE INCREASE
UPTIME AND EFFICIENCY
IN THE REFRIGERATION INDUSTRY

Instruction Manual

HBTS – Temperature Sensor
For temperature measurement in refrigeration systems

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Safety Instructions

CAUTION! Always read the instruction manual before commencing work! Heed all warnings to the letter! Installation of the sensory requires technical knowledge of both refrigeration and electronics. Only qualified personnel should work with the product. The technician must be aware of the consequences of an improperly installed sensor and must be committed to adhering to the applicable local legislation.

If changes are made to type-approved equipment, this type approval becomes void. The product's input and output, as well as its accessories, may only be connected as shown in this guide. HB Products assumes no responsibility for damages resulting from not adhering to the above.

Explanation of the symbol for safety instructions. In this guide, the symbol below is used to point out important safety instructions for the user. It will always be found in places in the chapters where the information is relevant. The safety instructions and the warnings in particular, must always be read and adhered to.

	CAUTION! Refers to a possible limitation of functionality or risk in usage. NOTE! Contains important information about the product and provides further tips. The person responsible for operation must commit to adhering to all the legislative requirements, preventing accidents, and doing everything so as to avoid damage to people and materials.

Intended use, terms of use. The temperature sensor is designed for continuous measurement of temperature in refrigeration systems. If the sensor is to be used in a different way and if the operation of the product in this function is determined to be problematic, prior approval must be obtained from HB Products.

Prevention of collateral damage Make sure that qualified personnel assess any faults and take necessary precautions before attempting to make replacements or repairs, so as to avoid collateral damage.

Disposal instructions: The sensor is constructed so that the modules can easily be removed and sorted for disposal.

Introduction

HBTS is a temperature sensor conforming to DIN 60751, and it is available in two variants, PT100 and PT1000 – DIN B – class 3. The sensor is designed for the refrigeration industry where servicing of the electronics can be carried out without emptying refrigerant from the system. The sensor is delivered with a 60 & 90 mm sensor element length and a 6 mm sensor diameter.

Technical Data

Connection:

Connector:	M12, 5 pins – DIN 0627

Output:

Temperature output:	PT100 or PT1000
Sensor class:	DIN B - cl. 1/3
Sensor for threading:	4-wire

Installation conditions:

Ambient temperature:	-30…50°C
Refrigerant temperature:	-50…+130°C
Max. operational pressure:	150 bar
Waterproof rating:	IP67
Vibrations:	IEC 68-2-6 (4g)
Certifications:	
EMC Emission:	EN61000-3-2
EMC Immunity:	EN61000-4-2

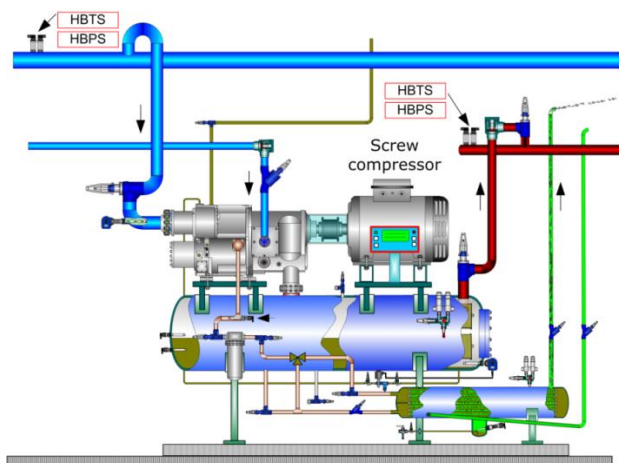**Mechanical specifications:**

Thread connection:	1/4" NPT or BSP
Sensor element:	Ø6 – 60/90 mm
Materials – mechanical parts:	AISI304

Application Examples

The sensor is designed for temperature measurement of refrigerant in industrial refrigeration systems:
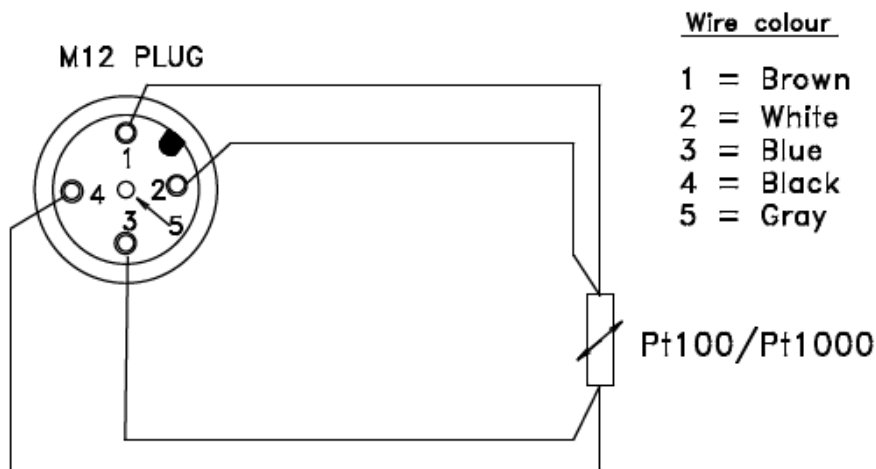
Installation Instructions
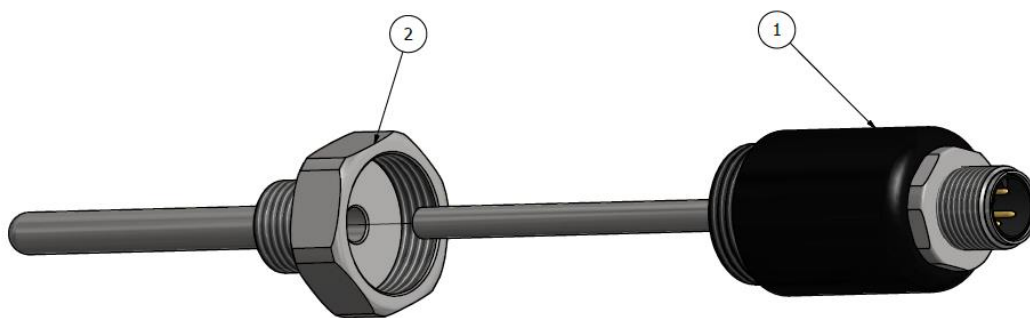
The following applies to system design:

1)   Can be installed both horizontally and vertically
2)   The sensor must be installed and supplied with a standard unshielded cable. If the EMC is higher than described in EN 61326, a shielded cable must be used.

Power Connection

Wire colour

1 = Brown
2 = White
3 = Blue
4 = Black
5 = Gray

Sensor Repair

The sensor electronics can be separated from the sensor pocket, and the system can be serviced without depressurising the system. The electronic part can also be ordered as a separate item.

Spare Parts

Temperature element	Length of sensor pocket	Product number
PT100	60	HBTS-PT100/60-EL
PT100	90	HBTS-PT100/90-EL
PT1000	60	HBTS-PT1000/60-EL
PT1000	90	HBTS-PT1000/90-EL

Further Information

For further information, please visit our website, www.hbproducts.dk, or send an email to: support@hbproducts.dk.

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