



PRODUCT MANUAL

Accessories to temperature sensors Sealing rings Type 991

APPLICATION

- For fixed and impermeable connection of a temperature sensor with a thermowells, weld-on piece, bore in technological equipment or for fixed and impermeable connection of a thermowells with a weld-on piece.
- As spare part for connection of the head and adapters of temperature sensors.

DESCRIPTION

They are delivered as accessories to temperature sensors in the dimensions corresponding to the dimensions of connecting screw-joints of adapters, thermowells and weld-on pieces in two basic designs: sealing rings with heat insulating insert and gaskets.

TECHNICAL DATA

Dimensions of sealing rings are based on the invalid ČSN 02 9310 and TPD 62-014-91 and they comply with the dimensions of connecting screw-joints of individual types of sensors and relevant weld-on pieces.

DESIGNATION

Sealing rings are not marked.

DELIVERY

Unless agreed otherwise with the customer, every delivery includes:

- Delivery note
- Products pursuant to the purchase order
- Accompanying technical documentation in Czech:
 - o Product quality and completeness certificate, which also serves as the warranty certificate
 - o Product manual

PLACING AN ORDER

The purchase order shall include:

- Name
- Product ordering number
- Number of pieces

ORDER EXAMPLE

Sealing ring 991 TK 14 – 10 pcs

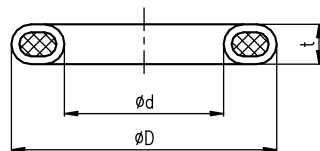
TABLE 1- OVERVIEW OF DESIGNS AND ORDERING OF SEALING RINGS:

Type	Dimension (d×D×t)	Use for thread	Material *)	Ordering number
				991 xx xx
TK 10	10×14×1	M10×1, G 1/8	Copper	991 TK 10
TK 12	12×16×1,5	M12×1,5		991 TK 12
TK 13	13×17×1,5	M12×1,5	Aluminium	991 TK 13
TK 14	14×20×2	M14×1,5, G 1/4	Copper	991 TK 14
TK 16	16×22×2	M16×1,5	Heat insulating insert	991 TK 16
TK 18	18×22×1,5	M18×1,5, G 3/8	Copper	991 TK 18
TK 20	20×24×2	M20×1,5, G 1/2	Copper	991 TK 20
TK 21	21×27×2	M20×1,5, G 1/2	Heat insulating insert	991 TK 21
TK 27	27×32×1,5	M27×2, G 3/4	Copper	991 TK 27
TK 33	33×39×2	M33×2, G 1		991 TK 33

*) Another material (stainless or galvanized steel) only as a special request on the basis of an agreement with the manufacturer.

Design:

- a) **Sealing rings with heat insulating insert**
 Jacket material – copper
 Insulating insert material – asbestos-free
 $t_{max} = 600 \text{ }^{\circ}\text{C}$
 Max. operation overpressure: 10 MPa
 (Combination of both max. values is not permitted)



- b) **Gaskets**
 Material - pursuant to the above mentioned table
 $t_{max} = 600 \text{ }^{\circ}\text{C}$ for Cu (350 °C for Al)
 Inf. operation overpressure: 0.25 to 40 MPa

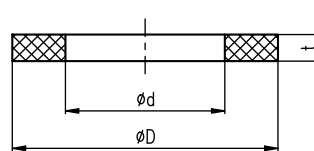


TABLE 2 - APPLICATION OF SEALING RINGS TO TEMPERATURE SENSORS AND THERMOWELLS OF ZPA Nová Paka a.s.

Type of sealing ring	Type number or resistance (thermoelectric) temperature sensor
TK 10	112 21, screw-union with threaded rings 991SR30ZM08
TK 12	112 21, 113 73, screw-union with threaded rings 991 SR 30 Z M12 a 991 SR 60 Z M12
TK 13	112 66
TK 14	231, 233, 331, 333, screw-union with threaded rings 991 SR 30 Z G14 a 991 SR 60 Z G14
TK 16	210
TK 18	203*, 231, 233, 331, 333, screw-union with threaded rings 991 SR 30 Z M18, SR 60 Z M18, 991 SR 30 Z G38 a 991 SR 60 Z G38
TK 20	thermowells 991 1010, 991 1020, outlets 991 VM
TK 21	112 60*, 112 61*, 112 61/P*, 112 68*, 112 68/P*, 112 70, 112 80, 112 80/P, 112 81, 113 13*, 113 13/P*, 113 15, 113 17, 113 18, 113 68*, 113 68/P*, 201*, 203*, 204*, 210, 231, 232, 233, 234, 243, 244, 303*, 304*, 331, 332, 333, 334, 343, 344, thermowells 991 1011, 991 1021, thermowells 991 DIN 6, screw-union with threaded rings 991 SR 30 Z M20, SR 60 Z M20, 991 SR 30 Z G12 a 991 SR 60 Z G12
TK 27	112 62*, 112 63*, 112 63/P*, 112 69*, 112 69/P*, 112 82, 113 69*, 113 69/P*, 204*, 232, 234, 244, 304, 334, 344, thermowells 991 1000, 991 10G0, 991 1100, 991 11G0, thermowells 991 DIN 6, screw-union with threaded rings 991 SR 30 Z G34 a 991 SR 60 Z G34
TK 33	204*, 232, 234, 244, 304*, 334, 344, thermowells 991 1500, 991 1700, 991 1800, thermowells 991 DIN 6

PACKING

Sealing rings are delivered welded in the package ensuring resistance to the impact of temperature effects and mechanical effects pursuant to controlled packing regulations. They are not packed individually.

TRANSPORT

Sealing rings may be transported on conditions corresponding to the set of conditions of classes IE 21 pursuant to EN 60721-3-2 (i.e. by airplanes and trucks; in areas that are ventilated and protected against atmospheric effects).

STORAGE

Sealing rings may be stored on conditions corresponding to the set of combinations of classes IE 11 pursuant to EN 60721-3-1 (i.e. in places with continuous temperature control between 5 and 40 °C and humidity from 5 to 85%, without a special threat of an attack with biological agents and not situated close to sources of dust and sand.)

INSTALLATION AND CONNECTION

Sealing rings are used for fixed and impermeable connection of temperature sensors with a thermowell, with a weld-on piece, with a bore in technological equipment or of a thermowell with a weld-on piece.

They represent standard delivered accessories to temperature sensors to thermowell and with thermowell. Before the installation of these sensors into a thermowell or a weld-on piece, the relevant sealing ring shall be put on the connecting screw-joint of the adapter or thermowell of the sensor.

When installing temperature sensors into a thermowell, torque of 70 Nm is recommended; in case of temperature sensors with a thermowell, it shall be 100 Nm (for cylindrical thermowells) and min. 300 Nm (for conical thermowells).

COMMISSIONING

Sealing rings do not require any operation and maintenance.

WARRANTY

The warranty period is 24 months from the receiving of the product by the customer, unless established otherwise in the contract. The rejection of defects shall be enforced in writing at the manufacturer within the warranty period. The rejecting side shall identify product name, ordering and manufacturing numbers, date of issue and number of the delivery note, clear description of the occurring defect and subject of the claim. If the rejecting side is invited to send the device for repair, it shall do so in the original package of the manufacturer and/or in another package ensuring safe transport.

The warranty shall not apply to defects caused by unauthorized intervention into the device, its forced mechanical damage or failure to comply with operation conditions of the product and the product manual.

DISABLING AND LIQUIDATION

The product and its package do not include any parts that could impact the environment.

The products withdrawn from the operation (including their packing) can be disposed of to sorted or unsorted waste pursuant to the type of waste.

The package of the sensor can be recycled completely.

Metal parts of the product shall be recycled, non-recyclable plastic materials shall be disposed of in accordance with applicable legislation.