



Accessories to temperature sensors

Screw union with collet for thermocouple Ø 3, Ø 4.5 and Ø 6

Screw union with threaded rings for thermocouple Ø 6 type 991

PRODUCT MANUAL

APPLICATION

SCREW UNION WITH COLLET

- For the installation of jacketed resistance temperature sensor with the diameter of 3 and 6 mm and thermoelectric temperature sensors with jacketed thermocouple with the diameter of 3; 4.5 or 6 mm to thermowell, bore or technological equipment, enabling to adjust the immersing length of the sensor inside the measured medium
- In design by figure 3. for connection protective hose
- Maximum operation temperature 600°C
- The immersion can be changed repeatedly

SCREW UNION WITH THREADED RINGS

- For the installation of jacketed resistance temperature sensor with the diameter of 3 and 6 mm and thermoelectric temperature sensors with jacketed thermocouple with the diameter of the jacket of 3 and 6 mm to the technological equipment enabling to adjust the immersing length of the sensor inside the measured medium
- In design by figure 3. for connection protective hose
- Maximum operation pressure
 - o 6.3 MPa screw union for sensor Ø 6 mm
 - o 1,0 MPa screw union for sensor Ø 3 mm
- Maximum operation temperature 600°C
- The immersion cannot be changed repeatedly; the sensor can only be dismantled

DESCRIPTION

SCREW UNION WITH COLLET

The complete screw union consists of the actual screw union, clamping item (collet) and a nut of the screw union. Individual parts are made of stainless steel 1.4541. It does not concern a sealing design.

SCREW UNION WITH THREADED RINGS

The complete screw union consists of the actual screw union, threaded ring, thrust ring and cap nut. The applicable sealing ring and instructional label are delivered with the screw union. Individual parts are made of stainless steel 1.4541. It concerns a sealing design.

OPERATING CONDITIONS

The environment defined by the group of parameters and their severity grades IE36 pursuant to EN 60721-3-3 and the following operation conditions:

Relative ambient humidity:

10 to 100 % with condensation, with upper limit of water content 29 g H₂O/kg of dry air

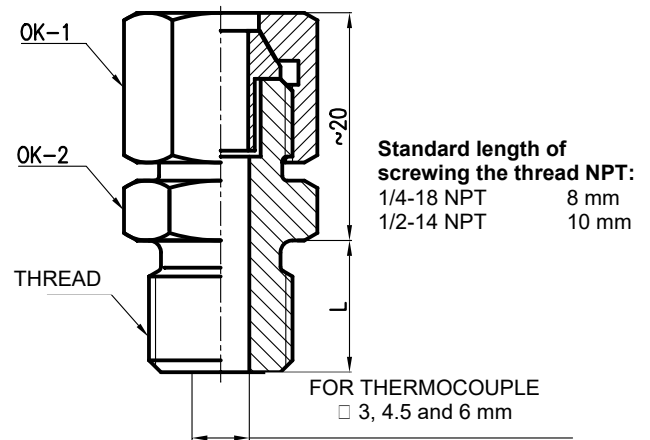
Atmospheric pressure: 70 to 106 kPa

DESIGNATION

Data on certificate of quality and completeness of the product

- Trademark of the manufacturer
- Product ordering number
- Time code

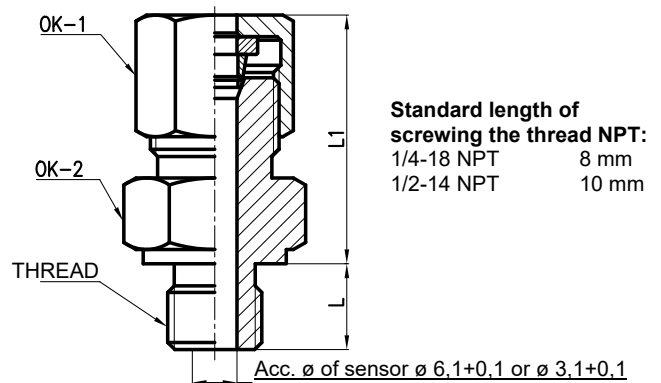
FIGURE 1 - SCREW UNION WITH COLLET



THREAD	OK-1	OK-2	L [mm]
M 8x1*)	OK 14	OK 14	11
M 12x1,5		OK 24	14
M 18x1,5		OK 14	11
M 20x1,5		OK 24	14
G 1/4		OK 22	11
G 1/2		OK 32	14
G3/8		OK 14	11
G 3/4		OK 24	14
1/4-18 NPT		OK 22	20
1/2-14 NPT			

*) Thread M 8 x 1 can not be used for jacketed temperature sensor

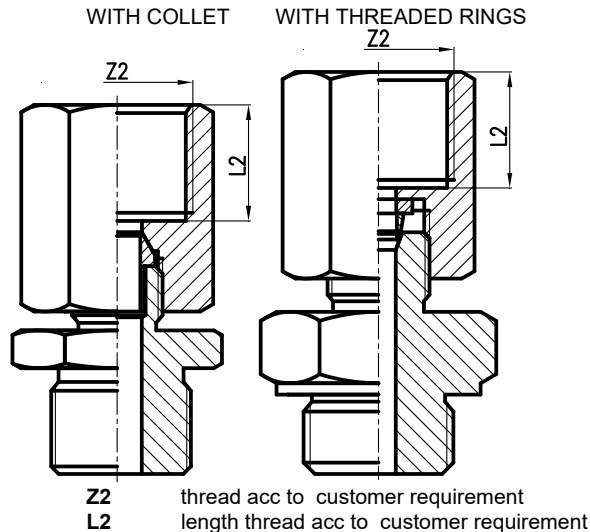
FIGURE 2 - SCREW UNION WITH THREADED RINGS



SENSOR	THREAD	OK-1	OK-2	L [mm]	L1 [mm]
Ø 6 mm	G 1/4	OK 22	OK 22	11	35
	G 3/8		OK 27	14	
	G 1/2		OK 36		14
	G 3/4		OK 14	OK 14	24
	1/4-18 NPT	OK 22	OK 22	20	33
	1/2-14 NPT	OK 14	19	11	31
	M 12x1,5	OK 22	24	12	35
	M 18x1,5		27	14	
Ø 3 mm	G 1/4	OK 14	OK 22	11	29
	G 3/8		OK 27	14	
	G 1/2		OK 36		14
	G 3/4		OK 14	20	22
	1/4-18 NPT		OK 22	20	27
	1/2-14 NPT		OK 14	11	25
	M 8x1*)		OK 19	11	29
	M 12x1,5		OK 24		
	M 18x1,5		OK 27		
	M 20x1,5		OK 27		

*) Thread M 8 x 1 can not be used for jacketed temperature sensor

FIGURE 3 - SCREW UNION FOR CONNECTION PROTECTIVE HOSEPIPE



DELIVERY

Unless agreed otherwise with the customer, each delivery includes

- Delivery note
- Products pursuant to the purchase order
- Applicable sealing ring is delivered with each screw union with a threaded ring (for threads NPT, the sealing ring is not delivered)
- Accompanying technical documentation in Czech:
 - o Product quality and completeness certificate, which also serves as the warranty certificate
 - o An instructional label is delivered with each screw union with a threaded ring
 - o Product manual

If it is established in the purchase contract or agreed otherwise, the following documentation can be also delivered with the product:

- Copy of the Inspection Certificate 3.1 pursuant to EN 10204 for material with the heat number
- Declaration of Conformity of the supplier pursuant to EN ISO/IEC 17050-1

PACKING

The products are delivered in a packing ensuring resistance to the impact of thermal effects and mechanical effects pursuant to controlled packing regulations.

TRANSPORT

The products may be transported on conditions corresponding to the set of combinations of classes IE 23 pursuant to EN 60721-3-2 but they may not be exposed to direct rain (i.e. by airplanes and trucks, semi-trailers and trailers, railway wagons with specially designed shock absorbers and ships, in premises that are not ventilated and not protected against atmospheric effects).

STORAGE

The products may be stored on conditions corresponding to the set of combinations of classes IE 12 pursuant to EN 60721-3-1, but with ambient temperature from -30 to 45 °C (i.e. in places where temperature and humidity are not regulated, with a threat of occurrence of condensation, dripping water and formation of ice, without a special threat of an attack with biological agents, with vibrations of small significance and not situated close to sources of dust and sand).

RELIABILITY

Reliability indicators in operation conditions and ambient conditions specified herein

- Mean time of operation between failures 96 000 hours (inf. value)
- Expected service life 10 years

PLACING AN ORDER

The purchase order shall specify:

- Name
- Product ordering number
- Number of pieces

PURCHASE ORDER EXAMPLE :

- 1 - Screw union with collet
991 SR 30 K M12
20 pcs
- 2 - Screw union with threaded rings
991 SR 60 Z G14
20 pcs

Special requirement:

Screw union with collet for connection protective hose with thread M16x1,5
length thread 12mm
991 SR 60 K M20M16
20 pcs

TABLE 1 - OVERVIEW OF DESIGNS AND ORDERING OF SCREW UNIONS

SPECIFICATION		ORDERING NUMBER						
		991	SR	xx	x	xxx	/xxx	/xx
Screw union for temperature sensor whitout protective tube			SR					
Stem tube of the measuring insert Ø [mm]	3			30				
	4,5 (not for screw union with threaded rings)			45				
	6			60				
Screw union	with collet				K			
	with threaded rings				Z			
Fixing thread Z	M 8x1 (not for tube of the measuring insert Ø 6)					M08		
	M 12x1,5					M12		
	M 18x1,5					M18		
	M 20x1,5					M20		
	G 1/4					G14		
	G 1/2					G12		
	G 3/8					G38		
	G 3/4					G34		
	1/4-18 NPT					N14		
	1/2-14 NPT					N12		
Thread of the protective hose Z2 *)							/xxx	

*) Only as special requirement, Thread of the protective hose must be adduce in the order

TABLE 2 - OVERVIEW OF SEALING RINGS TYPE 991 SUPPLIED WITH SCREW UNIONS WITH THREADED RINGS

EXTERNAL CONNECTION THREAD OF SCREW UNIONS WITH THREADED RINGS	SEALING RING				
	DIMENSION [mm] Ød x ØD x t	MATERIAL	NUMBER	ORDERING NUMBER	
M 8x1	10×14x1,5	copper 42 3005.11 thermal insulating insert	1 pcs	991 TK 10	
M 12x1,5	12×16x1,5	copper 42 3001.11		991 TK 12	
M18 x 1,5	18x22x1,5			991 TK 18	
M20 x 1,5	21×27x2	copper42 3005.11 thermal insulating insert		991 TK 21	
G1/4	14×20x2			991 TK 14	
G1/2	21×27x2			991 TK 21	
G3/8	18x22x1,5	copper 42 3001.11		991 TK 18	
G3/4	27 x 32 x1,5			991 TK 27	
1/4-18 NPT	-	-		-	-
1/2-14NPT	-	-		-	-

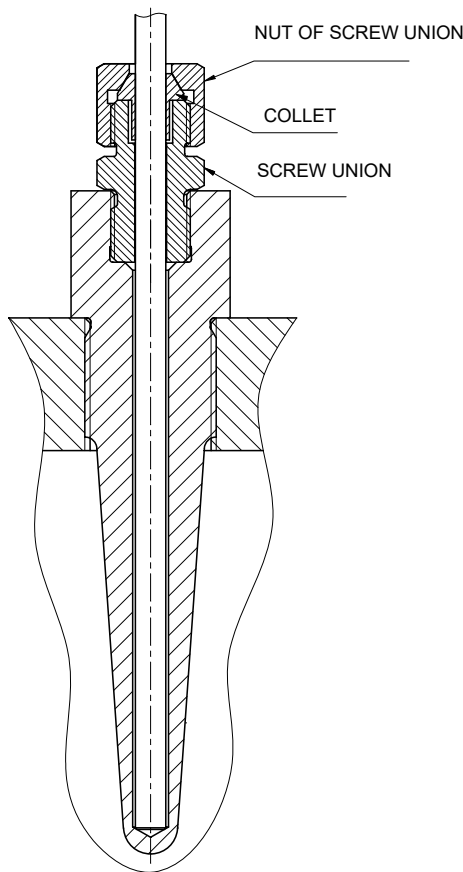
The sealing ring is supplied as standard for each screw union. Under the order number, the sealing ring can be ordered separately

INSTALLATION

SCREW UNION WITH COLLET

- 1 - Screw the screw union into the technological equipment and tighten it adequately.
- 2 - On the jacket of the thermocouple, put the nut of the screw union at first and then the collet.
- 3 - Slide the sensor into the screw union, adjust the required immersion and tighten the nut of the screw union.

EXAMPLE OF INSTALLATION OF THE SCREW UNION WITH COLLET

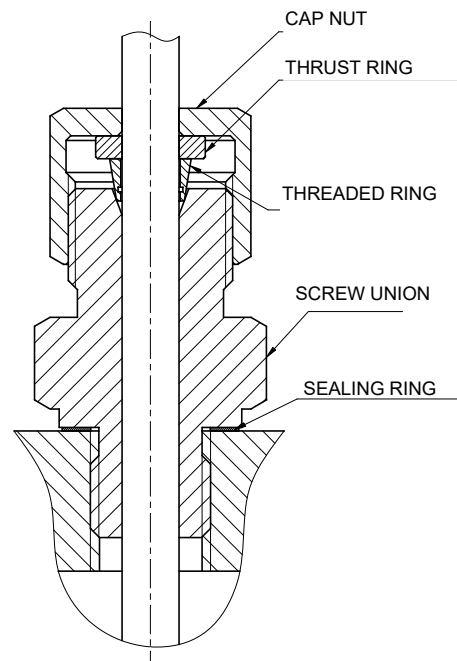


SCREW UNION WITH THREADED RINGS

- 1 - Screw the screw union with put-on sealing ring (for threads NPT, the sealing ring is not used) into the technological equipment and tighten it adequately.
- 2 - On the jacket of the thermocouple, put the cap nut at first, then the thrust ring and finally the threaded ring. Slide the jacketed thermocouple with put-on components into the prepared screw union and after selecting the immersion, tighten it adequately with the use of a torque wrench (torque 30 Nm for sensors Ø 6 mm and 10 Nm for sensors Ø 3 mm).

! WARNING: The length of the immersing part cannot be changed repeatedly; the sensor can only be dismantled!

EXAMPLE OF INSTALLATION OF THE SCREW UNION WITH THREADED RINGS



COMMISSIONING

The products do not require any operation and maintenance.

SPARE PARTS

The products do not require any delivery of spare parts.

WARRANTY

The warranty period is 24 months from the receiving of the product by the customer, unless established otherwise in the contract. Rejection of defects shall be enforced in writing at the manufacturer within the warranty period. The rejecting side shall identify the product name, ordering and manufacturing numbers, date of issue and number of the delivery note, clear description of the occurring defect and the 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.

REPAIRS

The products do not require any repair.

DISABLING AND LIQUIDATION

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

The products that are withdrawn from operation, including their packages, may be disposed of to sorted or unsorted waste pursuant to the type of waste.

The package of the sensor and metal parts of the product can be recycled completely.

TABLE 1 – USE OF SCREW UNION FOR TEMPERATURE SENSORS ZPA Nová Paka a.s.

Type of screw union	Type number of resistance (thermoelectric) temperature sensor
991 SR 30 Kxx	212 x30, Insert Ø 3 mm
991 SR 30 Zxx	312 x30, Thermocouple Ø 3 mm
991 SR 45 Kxx	312 x45, Thermocouple Ø 4,5 mm
991 SR 60 Kxx	212 x60, Insert Ø 6 mm
991 SR 60 Zxx	312 x60, Thermocouple Ø 6 mm

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ã ZPA Nová Paka, a.s.



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