

TECHNICAL DESCRIPTION

WATER JET NOZZLE
IPX5 - SW.X5 (11803)
IPX6 - SW.X6(11804)
UL / NEMA 4 - SW.UL (11805)

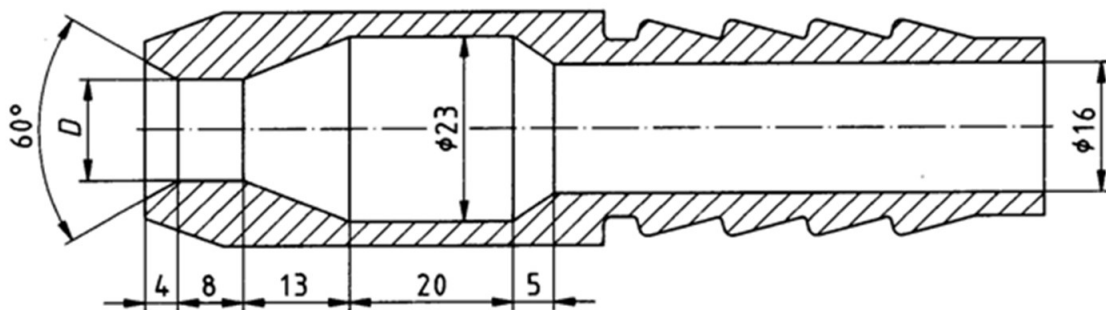


FULFILLED STANDARDS AND REGULATIONS - NOZZLE PIPE

The jet pipe enables standard-compliant testing of "electrical equipment inside an enclosure" against effects of water ingress. Depending on the desired design, the following standards and specifications for the IPX5/X6/X6K "water jets / pressurised water jets with increased pressure" or UL/Nema 4 range can be met.

Standards	Standard (depending on version)	Optional	Option
IEC 60529:1989 + A1:1999 + A2:2013	x		
ISO 20653	x		
UL 50E / NEMA 250	x		

The geometry of the nozzles is specified in DIN EN 60529. The following applies to the diameter D: Ø 6.3 mm for the tests of water protection classes IP X5 and X6K and Ø 12.5 mm for the tests of water protection class IP X6. The nozzles are manufactured with the general tolerances according to ISO 2768-m.



Standardised illustration of the nozzle without flow meter (DIN EN 60529)



Different water jet nozzles (from left to right: IPX5 - IPX6 - UL)

WATER JET NOZZLE

Nozzle IPX5 SW.X5 (11803) / IPX6 - SW.X6(11804)

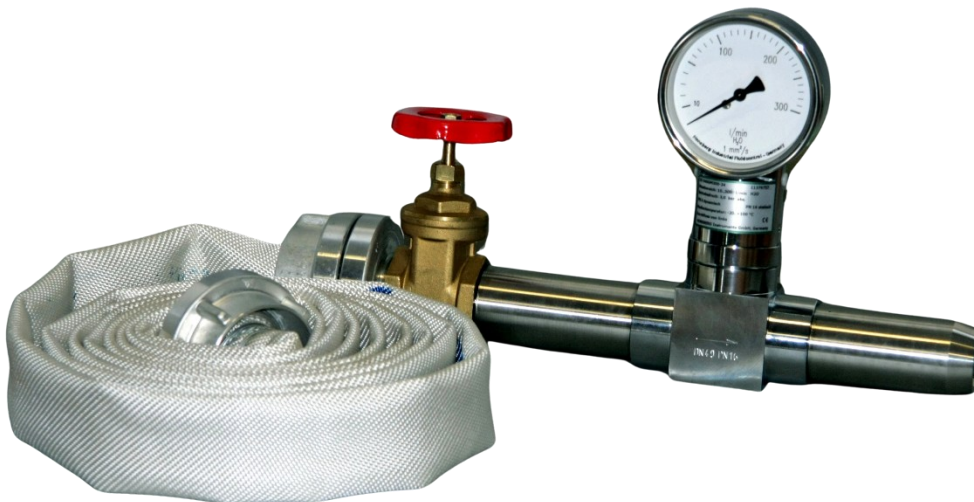
- The nozzle geometry is designed in accordance with ISO 20653 Fig. 6 / DIN EN 60529, see illustration above.
- The throttle valve is used for flow regulation and shut-off.
- A flow meter determines the flow rate. The following measuring ranges apply:
 - Measuring range for IPX6(K) nozzle: 20-100 l/min (accuracy +/- 5%)
 - Measuring range for IPX5 nozzle: 0-20 l/min (accuracy +/- 5%)
- In addition to the flow rate, the pressure is measured by a pressure gauge. The following measuring ranges apply:
 - Measuring range for IPX6K nozzle: 0 - 16 bar (accuracy class 1.0)
 - Measuring range for IPX5 nozzle: 0 - 1 bar (accuracy class 1.0)
- The nozzle diameter for IPX5 and IPX6K is 6.3 mm in accordance with the standard.
- The nozzle diameter for IPX6 is 12.5 mm in accordance with the standard.
- The hose coupling on the nozzle is compatible with the hose supplied.
- A total of 5 metres of pressure hose is included in the scope of delivery.



WATER JET NOZZLE

Nozzle UL / NEMA 4 (11805)

- The nozzle geometry is designed in accordance with UL 50E / NEMA 250.
- The throttle valve is used for flow regulation and shut-off.
- A flow meter determines the flow rate. The following measuring ranges apply:
 - Measuring range for UL nozzle: 10-300 l/min (accuracy +/- 5%)
- The nozzle diameter is 25.4 mm in accordance with UL 50E / NEMA 250.
- The hose coupling on the nozzle is compatible with the hose supplied.
- A total of 5 metres of pressure hose is included in the scope of delivery.



GENERAL ON-SITE REQUIREMENTS - WATER JET NOZZLE

Climatic installation conditions	Water Jet Nozzle
Ambient temperature [°C]	10 - 30
Relative humidity max. [%] - non-condensing)	70

Water supply	Water Jet Nozzle
Water quality	City water with a minimum conductivity of 30 µS/cm
Water filter (customer supplied) Micronage [µm]	100
Water pressure [bar]	>0.5 (for IP X5) >1.5 (for IP X6) >3 (for UL / Nema4) >12 (for IP X6K)
Removable water volume [l/min]	>20 (for IP X5) >100 (for IP X6 / X6K) >260 (for UL / Nema4)
Water hardness max. [dH]	5

- **Note: The test water should never exceed a water hardness of 6°dH. We recommend the use of demineralised water or a water softener.**
- **We can offer you an optional water supply pump. Please contact us.**

OVERVIEW: OPTIONS - WATER JET NOZZLE

Option number	Option	Checkbox
SW.OP-030 (11809)	Stand for water jets IPX5/6	<input type="checkbox"/>
SW.OP-042 (12316)	Jet pipe with electronic flow meter IPX5 / X6	<input type="checkbox"/>
SW.OP-41 (12287)	Geometrical measurement of a jet nozzle IPX5/X6	<input type="checkbox"/>
SW.OP-080 (12501)	DAkkS calibration of sensors for IPX5/X6	<input type="checkbox"/>
SW.OP-090 (12500)	Factory calibration of the sensors for IP X5/6	<input type="checkbox"/>

OPTIONS - WATER JET NOZZLE

SW.OP-030 (11809) - Stand for water jets IPX5/6

- The stand is used to hold the jet nozzles for the IPX5 and IPX6 and NEMA 4 tests.
- The height of the nozzle holder on the stand can be adjusted.
- The angle of the jet nozzles can be adjusted on the stand.
- The tripod simplifies the handling of a water jets test, as the jet pipe does not need to be held by an operator.

Note: The jet pipe (incl. sensors) must be ordered separately.



OPTIONS - WATER JET NOZZLE

SW.OP-042 (12316) – Water jets with electronic flow meter IPX5 / X6

- The nozzle geometry is designed in accordance with ISO 20653 Fig. 6 / DIN EN 60529, see illustration above.
- The throttle valve is used for flow regulation and shut-off.
- A flow meter determines the flow rate. The following measuring ranges apply:
 - Measuring range for IPX5 / IP X6 nozzles: 0-106 l/min
- The flow meter is supplied with 230V and has a 4-20mA output. The measured value is shown on an illuminated display.
- The common pressure gauge for IPX5 and IPX6 has a measuring range of 0 - 2.5 bar.
- The nozzle diameter for IPX5 and IPX6K is 6.3 mm in accordance with the standard.
- The nozzle diameter for IPX6 is 12.5 mm in accordance with the standard.
- The hose coupling on the nozzle is compatible with the hose supplied.
- A total of 5 metres of pressure hose is included in the scope of delivery.



OPTIONS - WATER JET NOZZLE

SW.OP-41 (12287) – Geometrical measurement of a jet nozzle IPX5/X6

- **Measurement of the geometry of a jet nozzle to check compliance with DIN EN 60529 and subsequent report.**
- **Assessment of compliance with geometry according to ISO 2768-m.**

SW.OP-080 (12501) - DAkkS calibration of sensors for IPX5/X6

- **DAkkS calibration by a certified company incl. test certificate for the flow meter and pressure sensor of the IP X5/6 test.**

SW.OP-090 (12500) - Factory calibration of sensors for IP X5/6

- **Factory calibration by iTS GmbH incl. test certificate for the flow meter and pressure sensor of test IP X5/6.**

REMARK

We reserve the right to make design and technical changes in the interests of further technical development.
This applies to the entire technical description.

ITS GmbH

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VERSION

Version	Reason for change	Released on	Released by
2025	New creation	18.03.2025	CM