

Bi-stable Hygiene Cartridge Valve, DN 5

Product Information



A. u. K. Müller

Solenoid valves
Control valves
Special valves and systems

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Series 50.005.110 bi



HyGenic



HyGenic Max

Type 1: Sealing area valve seat / body hygiene advantage
Type 1 and 2 patented technology

Type 2: Sealing area valve seat complete hygiene advantage

Description

2/2-way solenoid valve of nominal size DN 5 in cartridge design with pilot operated functional principle in bistable design for control of potable water. The valve is particularly suitable for use in battery operated, electronically controlled sanitary fittings.

The impulse control minimizes the power consumption in order to achieve a long service life with safe valve function with common batteries.

For use in hygienically sensitive applications, the patented volume compensation is used to reduce the volume of stagnation water to almost zero. The magnetic system is completely separated from the medium.

The design outline has been reduced so far that integration in appropriate components, while using a minimum amount of space, is given.

This feature is supported by the screw cartridge design, which relieves the user in assembly, service and testing.

It also eliminates the need for the user to design a valve seat, which is otherwise required when using exclusively pilot valves.

The flow rate of the cartridge valve has been optimized in such a way that the nominal diameter of DN 5 fulfils the standard requirements for sanitary tap ware.

Applications

- Sanitary fittings, such as electronic faucets in particularly hygienically sensitive areas

Approvals

Approved variants available on request:

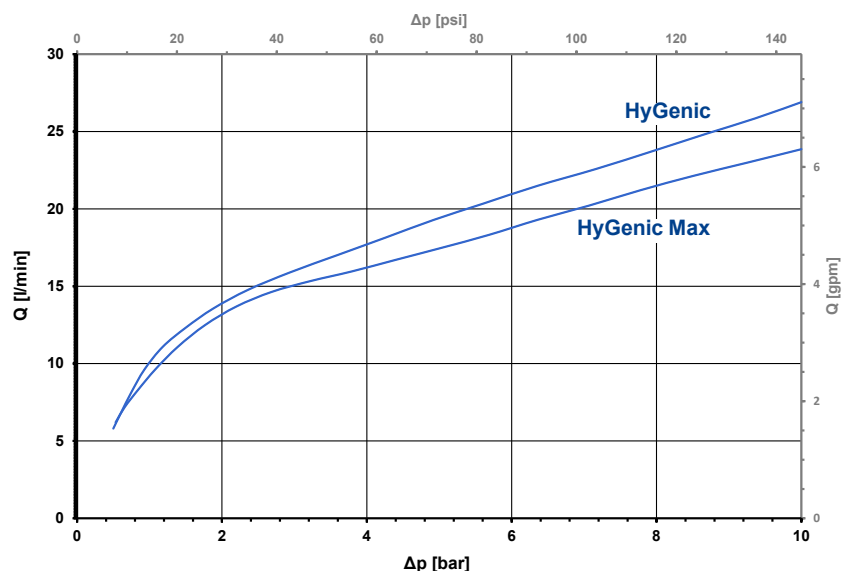
KTW - BWGL ACS

- KTW - BWGL System 1+
- ACS
- Others on request

Characteristics

- Low stagnation water volume due to patented volume compensation
- Hygiene benefit by 100% final testing with air
- Servo-controlled
- Pre-tested functional unit
- Suitable for the thermal as well as chemical disinfection
- Long term performance capability
- Compact design
- Optimized flow rate Kv for DN 5 (9.5 l/min at 1 bar HyGenic and 9 l/min at 1 bar HyGenic Max)
- Easy to assemble and service
- Cylindrical design
- Low power consumption
- Any fitting position
- High operating safety through the use of high quality material
- Hygiene benefit by 100% final testing with air

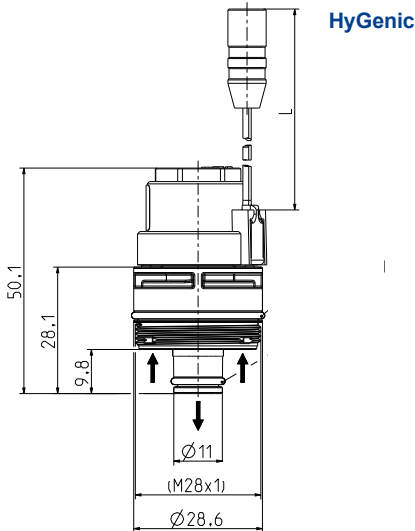
Typical Performance Curve





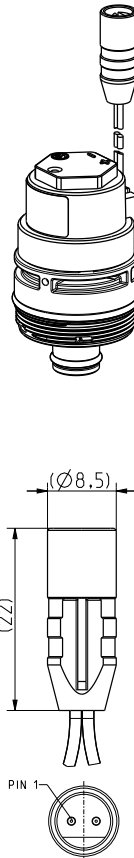
Series 50.005.110 bi

Type 1: Sealing area valve seat / body (hygiene advantage) M 28x1
(interface compatible with cartridge valve DN 7)



O-Rings are to be greased before screw-in.

Max. Torque for screw in: 1 Nm



Materials	
Valve body	PA 6/6
Membrane and sealings	EPDM
Filter (in the inlet)	stainless steel

Male connector	
Polarity of connector:	
strand color RED (PIN 1)	PLUS(+) at opening pulse
strand color BLACK	MINUS(-)

Technical Data

Type	cartridge valve	
Construction	2/2-way screw-in, servo controlled	
Function	bi-stable, pulse controlled	
Connection	thread M28 x 1	
Fitting position	any	
Media	cold and heated potable water and physically and chemically similar media	
T-Medium	5 - 70 °C	(5 - 80 °C max. 10 min)
T-Ambient	5 - 60 °C	
DN	5 mm	
p-Operating	0,5 - 10,0 bar	
Flow factor Kv	9,5 l/min	
Pressure surge	according to EN 60730	
Durability	according to ASME A112.18.1-2018 500,000 switching operations under laboratory conditions	
Coil type	MS 33	
Nominal voltage	6 V DC	other voltages on request
Operating voltage	5,0 - 7,5 V DC open/close at T-Ambient 25 °C	
Pulse shape/-time		
Nominal Power	1,6 W	
Protection Type	IP 65	
Insulation Class	F	according to EN 60730

Good resistance to thermal (e.g., T-medium 80 °C / 10 minutes) and chemical disinfection.

Options

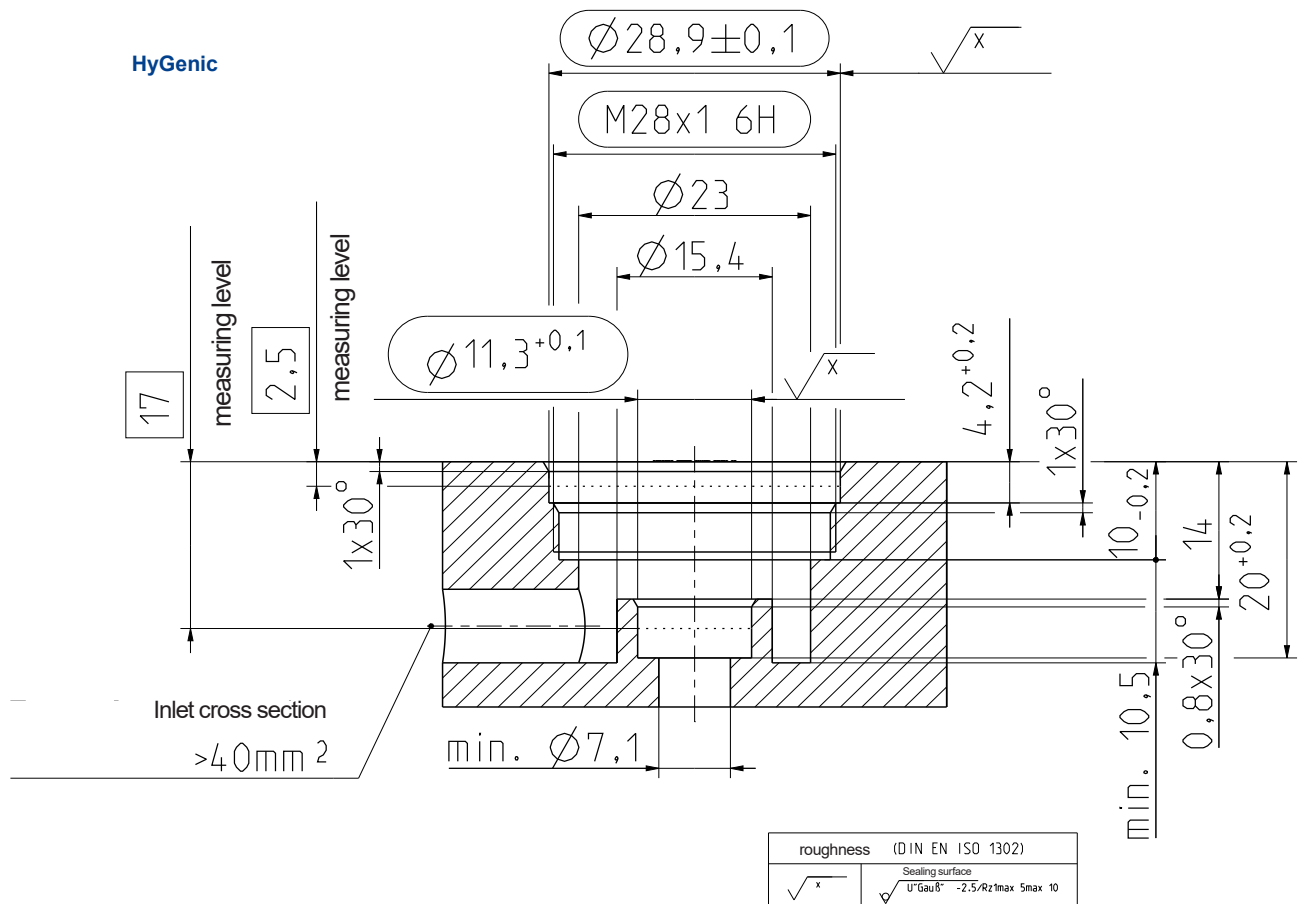
ID	Connection type	standard cable length L
063650	with leads and connector	100 ± 3 mm
other connection types or cable lengths on request		



Product Information

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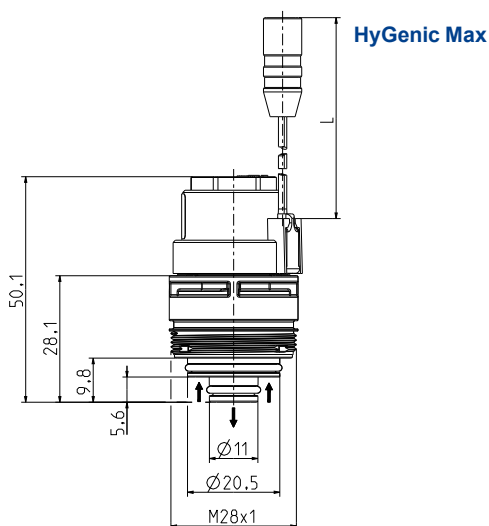
Screw-in Contour





Series 50.005.110 bi

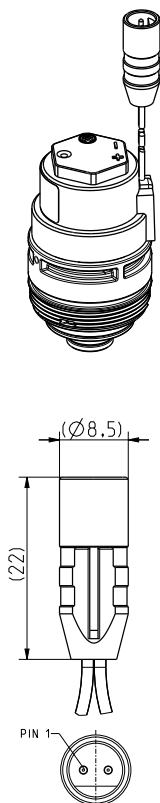
Type 2: Sealing area valve seat (complete hygiene advantage) M 28x1
(not interface-compatible with cartridge valve DN 7)



O-Rings are to be greased before screw-in.

Max. Torque for screw in: 1 Nm

Materials	
Valve body	PA 6/6
Membrane and sealings	EPDM
Filter (in the inlet)	stainless steel



Male connector	
Polarity of connector:	
strand color RED (PIN 1)	PLUS(+) at Opening pulse
strand color BLACK	MINUS(-)

Technical Data

Type	Cartridge valve	
Construction	2/2-way screw-in, servo controlled	
Function	bi-stable, pulse controlled	
Connection	thread M 28 x 1	
Fitting position	any	
Media	cold and heated potable water and physically and chemically similar media	
T-Medium	5 - 70	°C (5 - 80 °C max 10 min)
T-Ambient	5 - 60	°C
DN	5	mm
p-Operating	0,5 - 10,0 bar	
Flow rate Kv flow optimized	9,5	l/min
Pressure surge	according to EN 60730	
Durability	according to ASME A112.18.1-2018 500,000 switching operations under laboratory conditions	
Coil type	MS 33	
Nominal voltage	6	V DC
	other voltages on request	
Operating voltage	5,0 - 7,5 V DC Open/Close at T-Ambient 25 °C	
Pulse shape/-time		
Nominal Power	1,6 W	
Protection Type	IP 65	
Insulation Class	F	according to EN 60730

Good resistance to thermal (e.g., T-medium 80 °C / 10 minutes) and chemical disinfection.

Options

ID	Connection type	standard cable length L
063651	with leads and connector	100 ± 3 mm

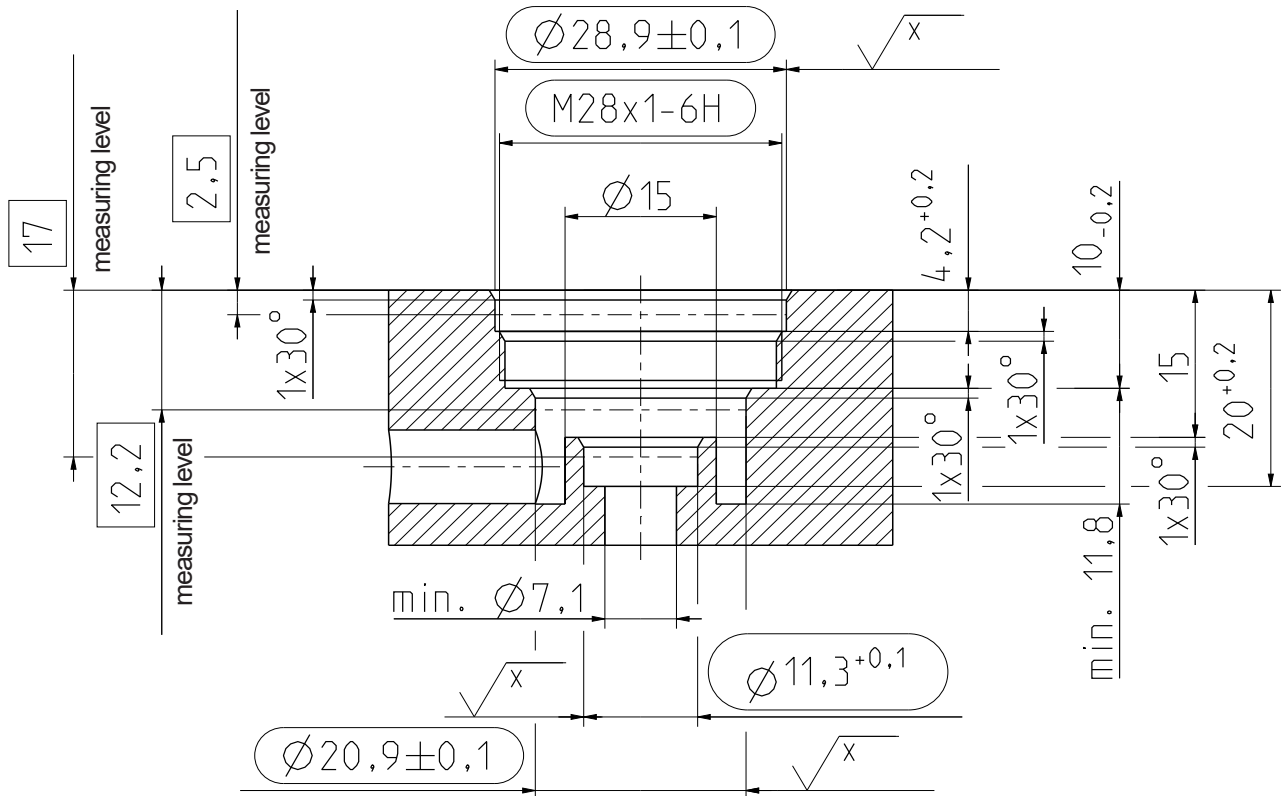
other connection types or cable lengths on request



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Screw-in Contour

HyGenic Max

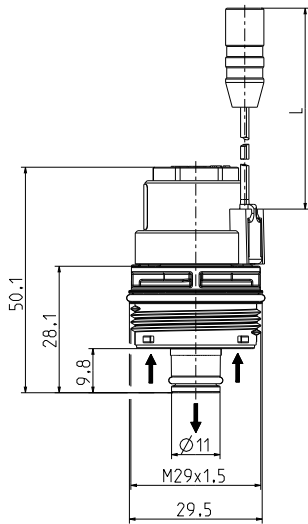


roughness (DIN EN ISO 1302)	
\sqrt{x}	sealing surface
\sqrt{x}	U ¹ Gau8 ² -2.5/Rz1max 5max 10

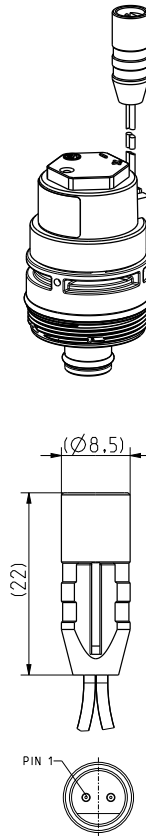


Series 50.005.110 bi

Type 1: Sealing area valve seat / body (hygiene advantage) M 29x1,5
(interface compatible with cartridge valve DN 7)



HyGenic



⚠ O-Rings are to be greased before screw-in.

⚠ Max. Torque for screw in: 1 Nm

Materials

Valve body	PA 6/6
Membrane and sealings	EPDM
Filter (in the inlet)	stainless steel

Male connector

Polarity of connector:

strand color RED (PIN 1)	PLUS(+) at opening pulse
strand color BLACK	MINUS(-)

Technical Data

Type	cartridge valve	
Construction	2/2-way screw-in, servo controlled	
Function	bi-stable, pulse controlled	
Connection	thread M29 x 1,5	
Fitting position	any	
Media	cold and heated potable water and physically and chemically similar media	
T-Medium	5 - 70 °C. (5 - 80 °C max. 10 min)	
T-Ambient	5 - 60 °C	
DN	5	mm
p-Operating	0,5 - 10,0	bar
Flow factor Kv	9,5	l/min
Pressure surge	according to EN 60730	
Durability	according to ASME A112.18.1-2018 500,000 switching operations under laboratory conditions	
Coil type	MS 33	
Nominal voltage	6	V DC
	other voltages on request	
Operating voltage	5,0 - 7,5 V DC open/close at T-Ambient 25 °C	
Pulse shape/-time		
Nominal Power	1,6 W	
Protection Type	IP 65	
Insulation Class	F	according to EN 60730

Good resistance to thermal (e.g., T-medium 80 °C / 10 minutes) and chemical disinfection.

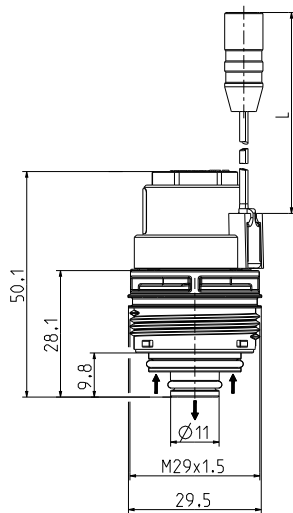
Options

ID	Connection type	standard cable length L
on request	with leads and connector	100 ± 3 mm
other connection types or cable lengths on request		



Series 50.005.110 bi

Type 2: Sealing area valve seat (complete hygiene advantage) M 29x1,5
(not interface-compatible with cartridge valve DN 7)

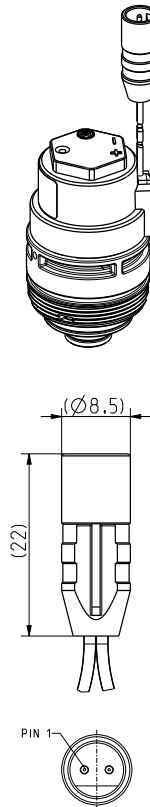


HyGenic Max

O-Rings are to be greased before screw-in.

Max. Torque for screw in: 1 Nm

Materials	
Valve body	PA 6/6
Membrane and sealings	EPDM
Filter (in the inlet)	stainless steel



Male connector	
Polarity of connector:	
strand color RED (PIN 1)	PLUS(+) at Opening pulse
strand color BLACK	MINUS(-)

Technical Data

Type	Cartridge valve	
Construction	2/2-way screw-in, servo controlled	
Function	bi-stable, pulse controlled	
Connection	thread M 29 x 1,5	
Fitting position	any	
Media	cold and heated potable water and physically and chemically similar media	
T-Medium	5 - 70	°C
	(5 - 80)	°C max 10 min)
T-Ambient	5 - 60	°C
DN	5	mm
p-Operating	0,5 - 10,0 bar	
Flow rate Kv flow optimized	9,5	l/min
Pressure surge	according to EN 60730	
Durability	according to ASME A112.18.1-2018 500,000 switching operations under laboratory conditions	
Coil type	MS 33	
Nominal voltage	6	V DC
	other voltages on request	
Operating voltage	5,0 - 7,5 V DC Open/Close at T-Ambient 25 °C	
Pulse shape/-time		
Nominal Power	1,6 W	
Protection Type	IP 65	
Insulation Class	F	according to EN 60730

Good resistance to thermal (e.g., T-medium 80 °C / 10 minutes) and chemical disinfection.

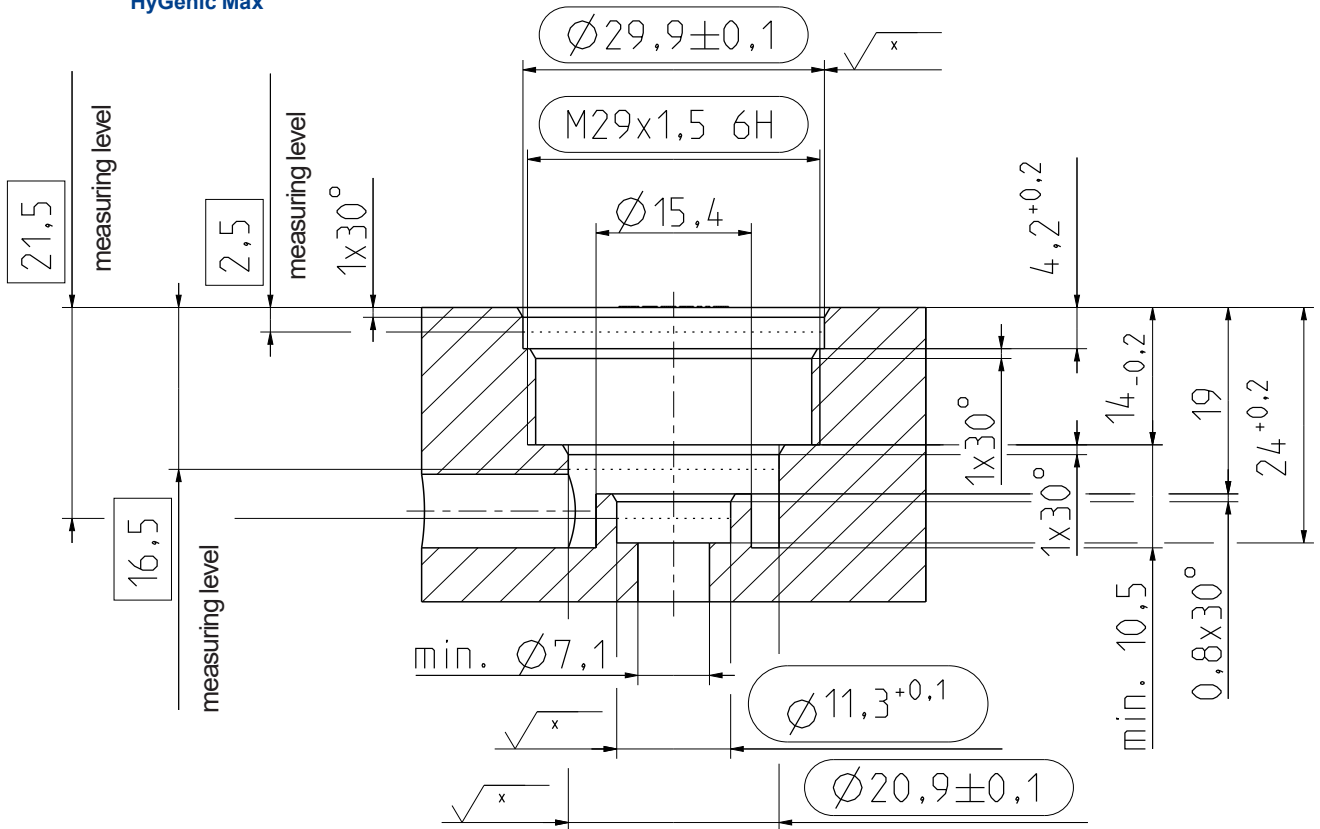
Options

ID	Connection type	standard cable length L
on request	with leads and connector	100 ± 3 mm
other connection types or cable lengths on request		



Series 50.005.110 bi

HyGenic Max



roughness (DIN EN ISO 1302)	
\sqrt{x}	sealing surface
$\sqrt{U^*Gau^*}$	-2.5/Rz1max Smax 10



Series 50.005.110 bi

Accessory

On the separate data sheets **SC1 connectors and cables** and **SC2 connectors and cables with energy storage**, electrical accessory components such as matching sockets, plugs and cables for the hygiene cartridge valve can be found.

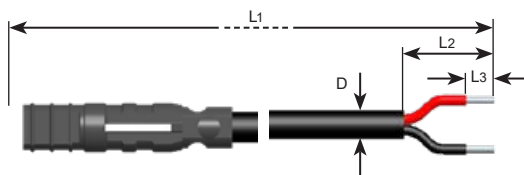
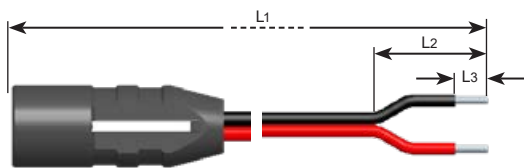
Possible cables

	Cable type	Colours	Cross-section mm ²
	single strand	red/black	2 x 0,22
	single strand	red/blue	
	twin strand	red/black	2 x 0,23
	twin strand	red/blue	
	Round cable LIYY	red/black	2 x 0,14
	Round cable LIYY	red/black	2 x 0,23

Matching plugs and sockets



Selectable cable lengths and cable ends



Cable length
L1 [mm] ± 5 [mm]
on request

Length of fanning
L2 [~mm]
on request

Stripped length
L3 [~mm]
on request

Cable ends

- Cleanly cut
- Twisted
- Twisted / Tinned
- Crimped
- on request

Customer-specific extensions

Cables can be produced with any of the above connection options on either end or other customer specific connectors as required.

