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**JUMO Instrument Co. Ltd.**  
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**JUMO Process Control, Inc.**  
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 Internet: www.jumousa.com



## Technical data

Type	202924/10...	202924/20...	202924/21...	202924/30...	202924/31...
Cell constants <sup>a</sup>	K = 0.01 cm <sup>-1</sup> K = 0.1 cm <sup>-1</sup>				
Typical measuring ranges <sup>b</sup>	0.05 to 20 µS/cm (when K = 0.01) 0.1 µS to 1 mS/cm (when K = 0.1)				
Temperature compensation	With Pt100 or Pt1000, both at least class A				
Process connections	Thread G 1/2 A, Thread G 3/4 A, Thread G 1 A, Thread 1/2"-14 NPT, Thread 3/4"-14 NPT, Taper socket for union nut DN 25 DIN 11851 (dairy pipe fitting), Clamp DN 25	Thread G 1/2 A Clamp DN 25	Clamp DN 25	JUMO PEKA Adapter: Orbital welding socket DN 25-40, VARIVENT® DN 50- 150	JUMO PEKA Adapter: Orbital welding socket DN 25-40, VARIVENT® DN 50- 150, Clamp DN 25-50, Aseptic DN 40/50, Aseptic NKS DN 40
Body materials	PVDF (default), Stainless steel 1.4571 (optional extra),  <b>High temperature version:</b> Stainless steel 1.4404 (optional extra)	Stainless steel 1.4435, similar to 316L, version for pharmaceutical industry			
Cell materials	Stainless steel 1.4571 (default), Titanium (optional extra)  <b>High temperature version:</b> Stainless steel 1.4404 (default)	Stainless steel 1.4435, similar to 316L, version for pharmaceutical industry			
Operating temperature	Up to 135 °C;  <b>High temperature version:</b> Up to 200 °C	Up to 135 °C	Up to 135 °C (standard operation); Up to 150 °C (sterilization, max. 45 min.)		
Maximum pressure	16 bar at 25 °C or 9 bar at 60 °C;  <b>High temperature version:</b> 40 bar at 25 °C or 17 bar at 200 °C;	16 bar at 25 °C or 1 bar at 135 °C	9 bar at 25 °C or 5 bar at 150 °C, max. 45 min.		
Electrical connections	Right-angle connector (default) Fixed cable (optional extra)  <b>High temperature version:</b> Right-angle connector	M12 connector (default) Fixed cable (optional extra) Right-angle con- nector (optional extra)	M12 connector		

### Certificates

ASTM test report	Determination of the exactly measured cell constant according to ASTM D1125-95 and ASTM D5391-99 (one-point calibration)
FDA certificate	The plastics used (insulators and O-rings) are FDA-listed
Optional certificates	Certificate of compliance according to EN 10204 2.1, EN 10204 2.2, EN 10204 3.1 (material, roughness)

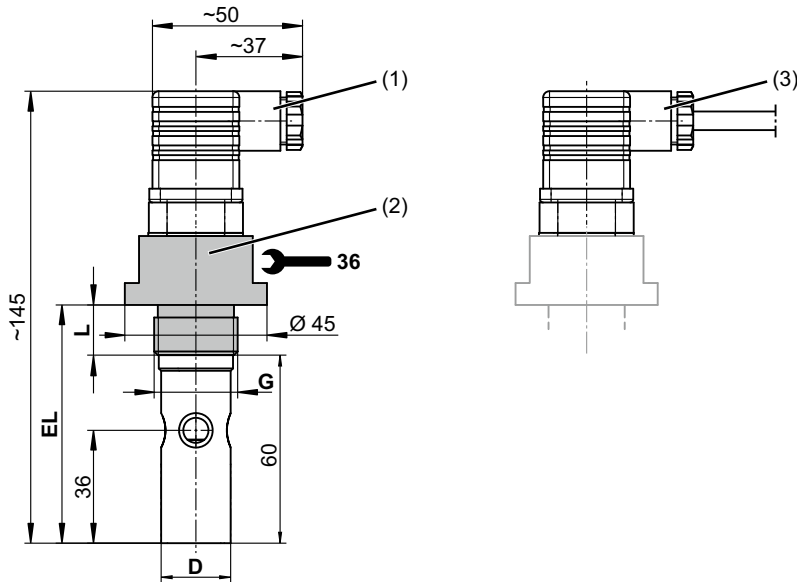
<sup>a</sup> The cell constant can differ by ±10 % of the nominal value depending on manufacturing. This deviation can be equalized on the transducer.

<sup>b</sup> The measuring ranges depend on the transducer being used. When used in measuring ranges larger than the "typical" one, incorrect measured values may occur due to polarization.



## Type 202924/10 dimensions...

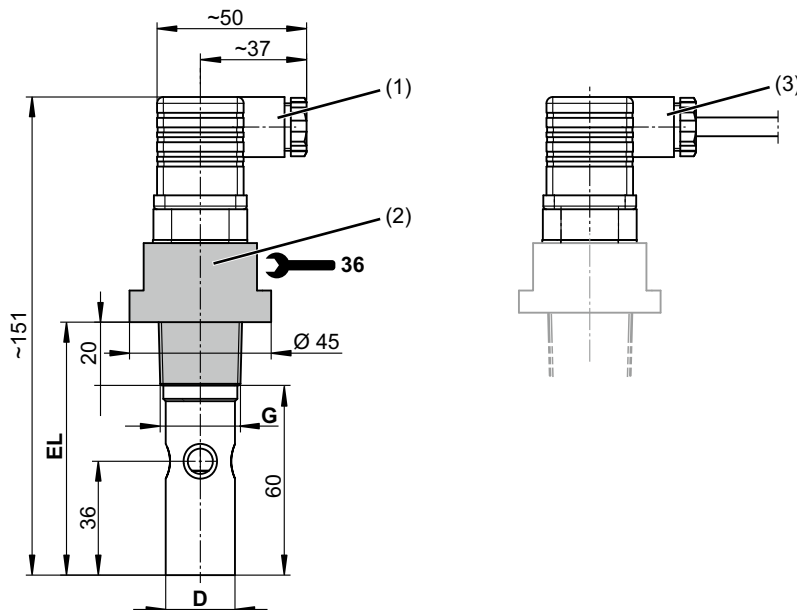
### Process connections -104, -105 und -106 (G thread)



Thread	L	Shaft Ø	Insertion length
<b>G</b>		<b>D</b>	<b>EL</b>
G 1/2 A	14	16	74
G 3/4 A	16	22	76
G 1 A	18	22	78

- (1) Right-angle connector (default)      (3) Fixed cable (optional extra)  
 (2) Process connection

### Process connections -144 and -145 (NPT thread)



Thread	Shaft Ø	Insertion length
<b>G</b>	<b>D</b>	<b>EL</b>
1/2-14 NPT	16	80
3/4-14 NPT	22	80

- (1) Right-angle connector (default)      (3) Fixed cable (optional extra)  
 (2) Process connection

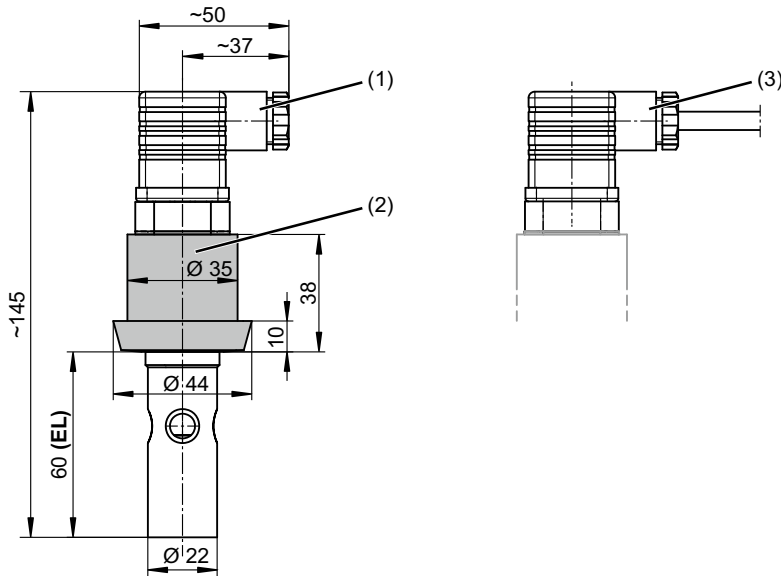
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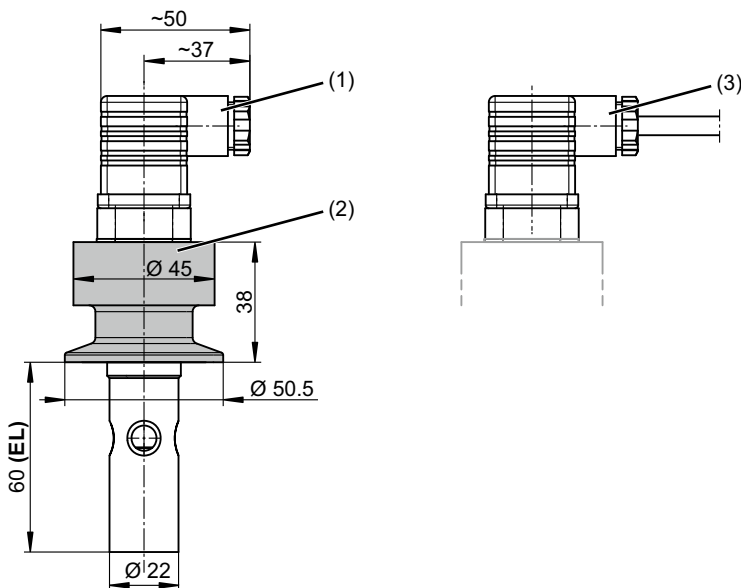


**Process connection -604 "dairy pipe fitting"  
 (taper socket with union nut DN 25 DIN 11851)**



- (1) Right-angle connector (default)
- (2) Process connection
- (3) Fixed cable (optional extra)

**Process connection -613 (clamp DN 25)**



- (1) Right-angle connector (default)
- (2) Process connection
- (3) Fixed cable (optional extra)

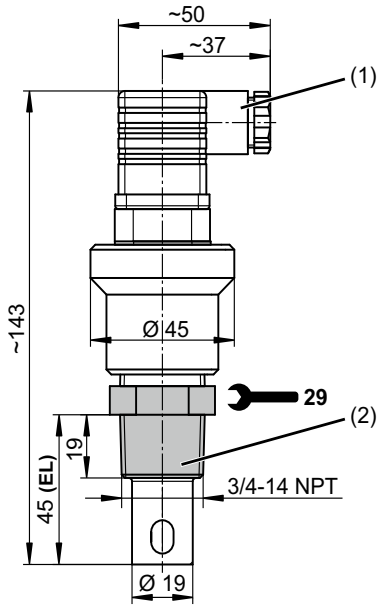
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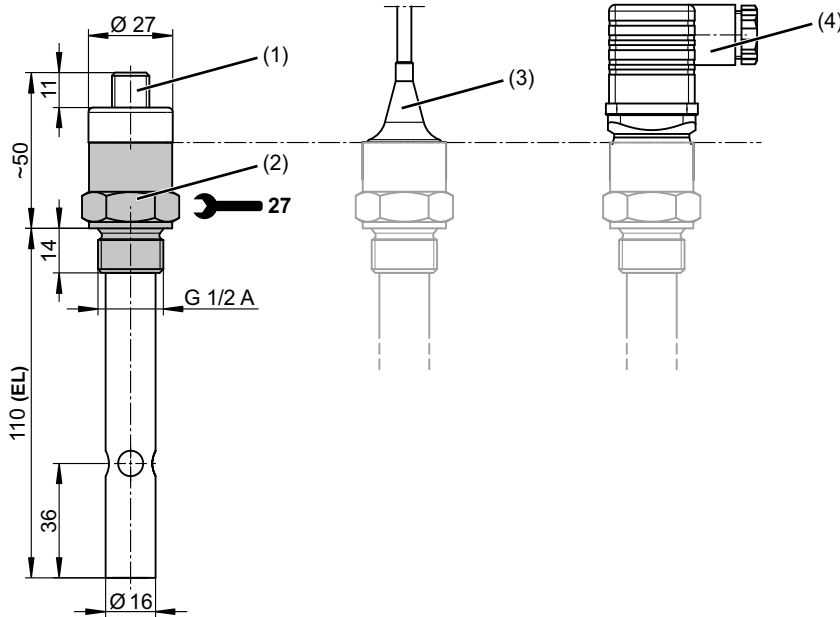
### High temperature version (extra code -765)



- (1) Right-angle connector
- (2) Process connection

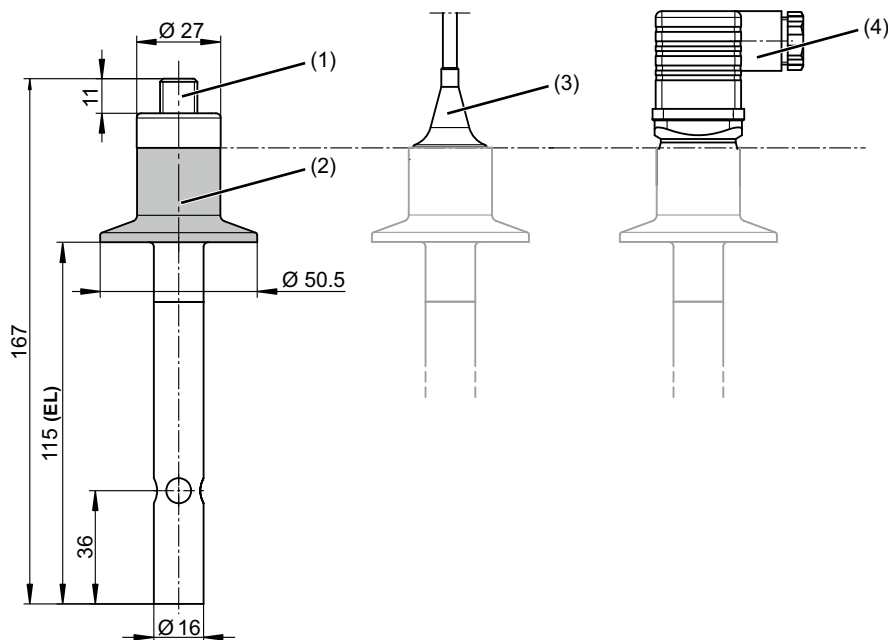
## Type 202924/20 dimensions...

### Process connection -104 (thread G 1/2 A)



- (1) M12 connector (default)
- (2) Process connection
- (3) Fixed cable (optional extra)
- (4) Right-angle connector (optional extra)

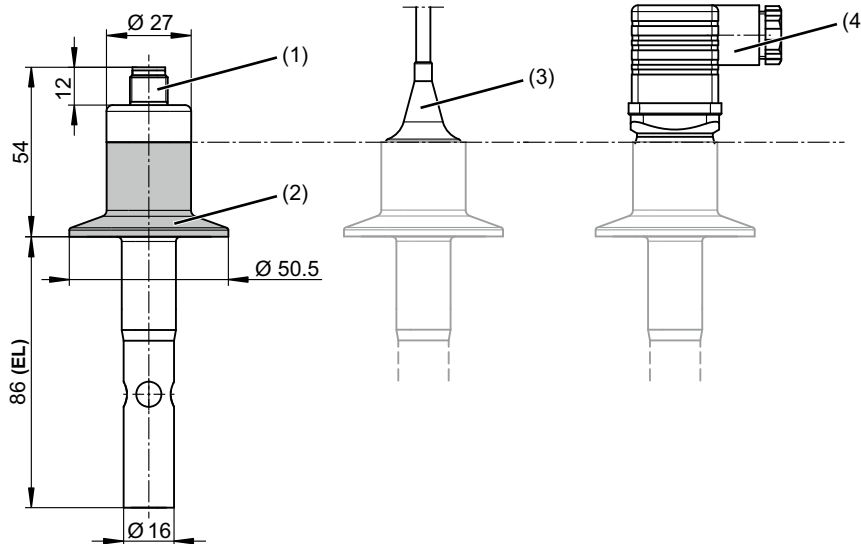
### Process connection -613 (clamp DN 25)



- (1) M12 connector (default)
- (2) Process connection
- (3) Fixed cable (optional extra)
- (4) Right-angle connector (optional extra)

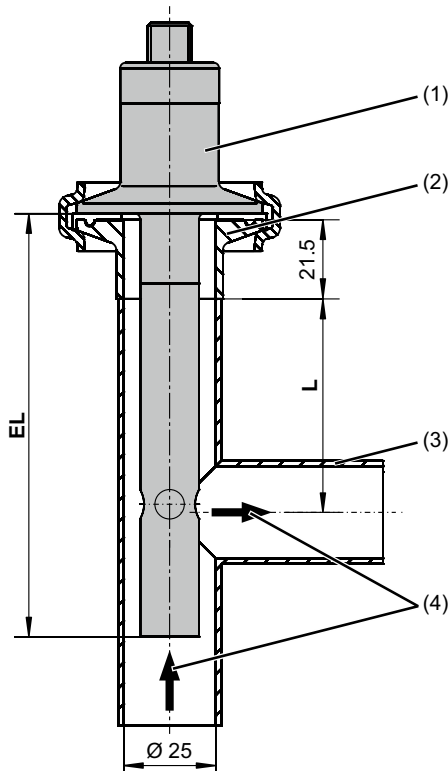
## Type 202924/21 dimensions...

### Process connection -613 (clamp DN 25)



- (1) M12 connector (default)
- (2) Process connection
- (3) Fixed cable (optional extra)
- (4) Right-angle connector (optional extra)

## Type 202924/20... and /21... installation example



- (1) Sensor with process connection clamp DN 25
- (2) Clamp socket DIN DN 25, 1", ISO DN 20
- (3) T-piece (**not included in the scope of delivery!**)
- (4) Flow direction

Recommended T-piece for installing the sensors

Sensor	T-piece	Length L
202924/20... EL = 115 mm	DIN 11852, DN 25	50 mm
202924/21... EL = 86 mm	Similar DIN 11852, DN 25	27 mm

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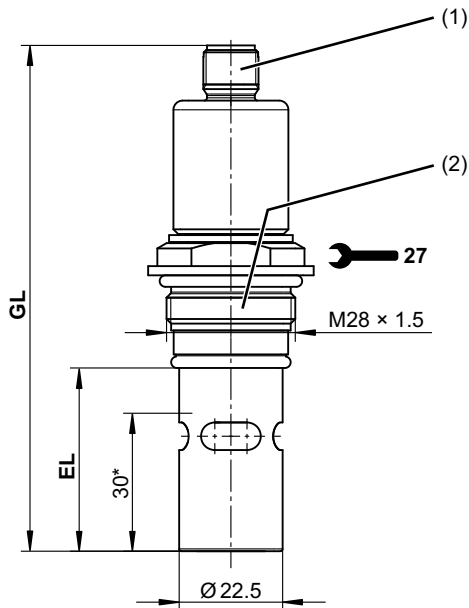
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## Type 202924/30... and /31... dimensions

### Process connection -997 (JUMO PEKA hygienic process connection)



Installation length EL	Total length GL	Sensor type
40	110	202924/30...
70	140	202924/31...

- (1) M12 connector
- (2) Process connection 997 (PEKA),  
Stainless steel 1.4435

\* Minimum immersion depth



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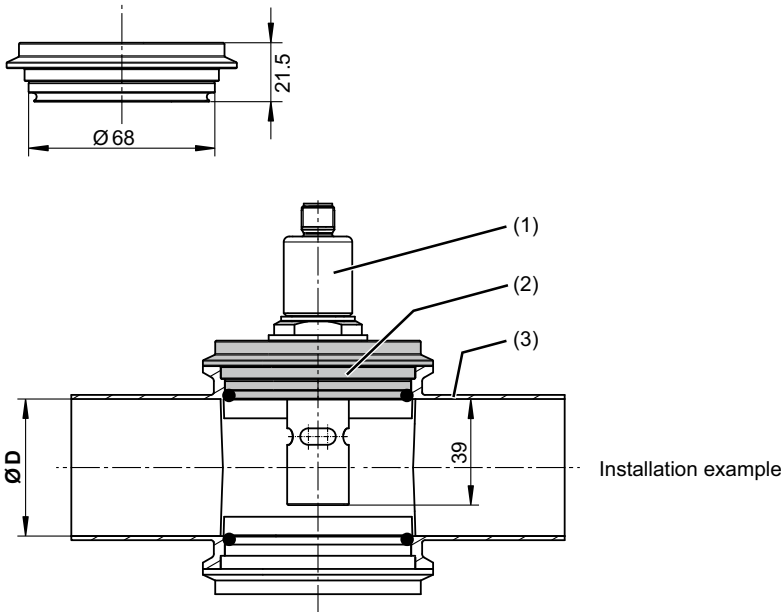
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**Process connection adapter for type 202924/30... and /31...**

**Varivent DN 40 - 150**  
 Part no.: 00577961



VARIVENT® housing DN <sup>a</sup>	Ø D	Sensor type
40	40	--
50	50	202924/30
65	70	202924/30
80	81	202924/30 <sup>b</sup> 202924/31
100	100	202924/30 <sup>b</sup> 202924/31
125	125	202924/30 <sup>b</sup> 202924/31
150	150	202924/30 <sup>b</sup> 202924/31

<sup>a</sup> To be provided by the customer.

<sup>b</sup> Preferred sensor type.

**O-ring not included in the scope of delivery!**

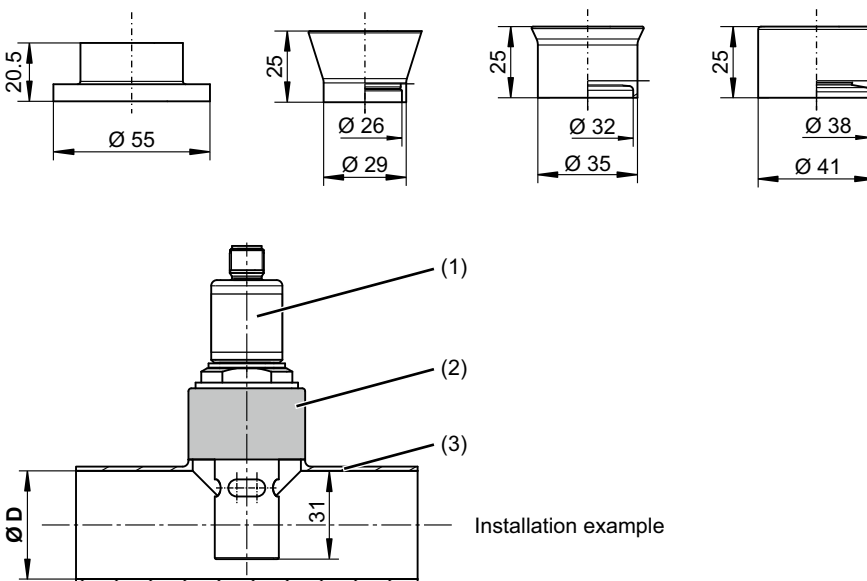
- (1) JUMO tecLine CR-PEKA sensor
- (2) VARIVENT® DN 40 - 150 process adapter
- (3) VARIVENT® housing

**Welding socket  
 Ø 55**  
 Part no.: 00447190

**Orbital welding socket DN 25**  
 Part no.: 00530211

**Orbital welding socket DN 32**  
 Part no.: 00530212

**Orbital welding socket DN 40**  
 Part no.: 00531973



Orbital welding socket DN	T-piece DN <sup>a</sup>	Ø D	Sensor type <sup>e</sup>
25/32/40	40-25/32/40	38	202924/30
	50-25/32/40	50	
	65-25/32/40	70	
	80-25/32/40	81	202924/30 <sup>b</sup> 202924/31
	100-25/32/40	100	202924/30 <sup>b</sup> 202924/31
	125-25/32/40	125	202924/30 <sup>b</sup> 202924/31
150-25/32/40	150	202924/30 <sup>b</sup> 202924/31	

<sup>a</sup> To be provided by the customer.

<sup>b</sup> Preferred sensor type.

- (1) JUMO tecLine CR-PEKA sensor
- (2) Welding socket
- (3) Short T-piece, similar to DIN 11852

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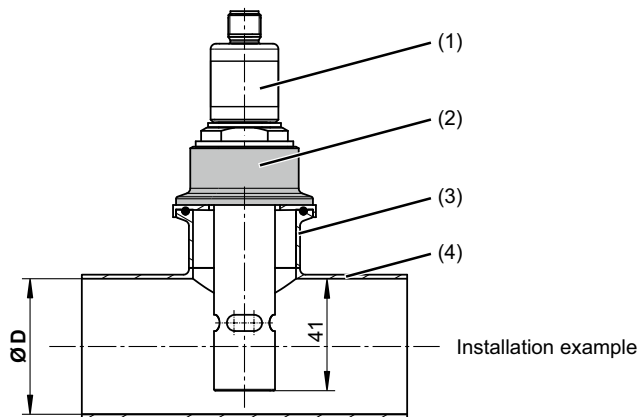
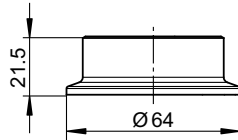
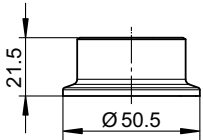
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**Process connection adapter for type 202924/31...**

**Clamp DN 25/32/40**  
 Part no.: 00577998

**Clamp DN 50**  
 Part no.: 00577997



- (1) JUMO tecLine CR-PEKA sensor
- (2) Clamp process adapter
- (3) Clamp socket DIN 32676
- (4) Short T-piece, similar to DIN 11852

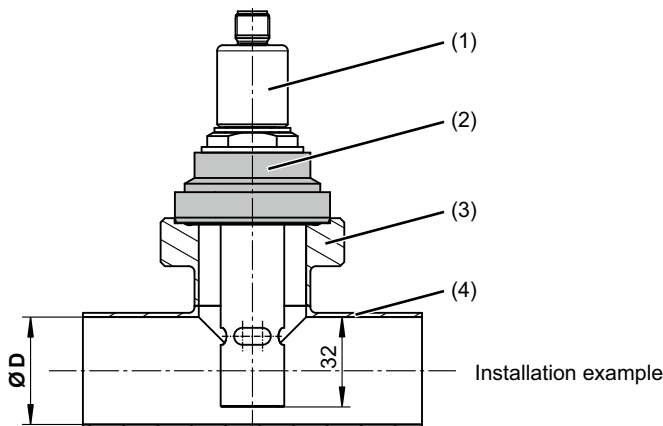
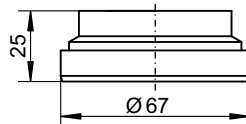
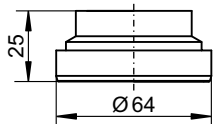
Clamp socket DN <sup>a</sup>	T-piece DN <sup>a</sup>	Ø D
25/32/40	50 - 25/32/40	50
	65 - 25/32/40	70
	80 - 25/32/40	81
	100 - 25/32/40	100
	125 - 25/32/40	125
50	150 - 25/32/40	150
	50 - 50	50
	65 - 50	70
	80 - 50	81
	100 - 50	100
	125 - 50	125
	150 - 50	150

<sup>a</sup> To be provided by the customer.

**O-ring not included in the scope of delivery!**

**Aseptic DN 40**  
 Part no.: 00577995

**Aseptic DN 50**  
 Part no.: 00577979



- (1) JUMO tecLine CR-PEKA sensor
- (2) Aseptic process adapter
- (3) Threaded connection DIN 11864-1
- (4) Short T-piece, similar to DIN 11852

Threaded connection DN <sup>a</sup>	T-piece DN <sup>a</sup>	Ø D
40	40 - 40	38
	50 - 40	50
	65 - 40	70
	80 - 40	81
	100 - 40	100
	125 - 40	125
50	150 - 40	150
	50 - 50	50
	65 - 50	70
	80 - 50	81
	100 - 50	100
	125 - 50	125
	150 - 50	150

<sup>a</sup> To be provided by the customer.

**O-ring not included in the scope of delivery!**

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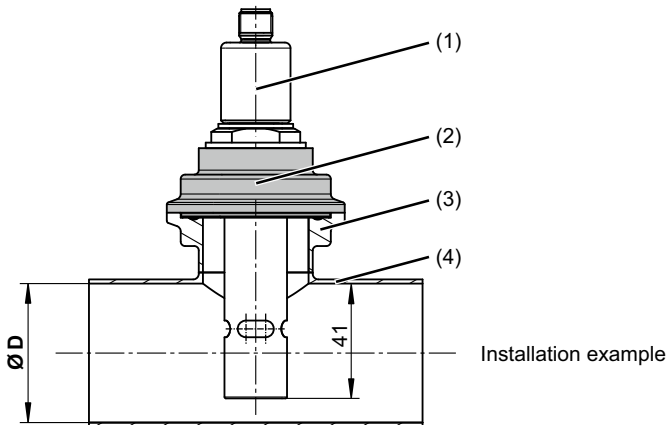
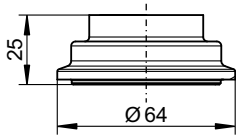
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**Aseptic NKS DN 40**

Part no.: 00577999



Collar clamp socket <sup>a</sup>	T-piece DN <sup>a</sup>	Ø D
NKS DN 40 form A	50 - 40	50
	65 - 40	70
	80 - 40	81
	100 - 40	100
	125 - 40	125
	150 - 40	150

<sup>a</sup> To be provided by the customer.

**O-ring not included in the scope of delivery!**

- (1) JUMO tecLine CR-PEKA sensor
- (2) Aseptic process adapter NKS DN 40
- (3) Collar clamp socket DIN 11864-3
- (4) Short T-piece, similar to DIN 11852

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## Electrical connection

Connection for	right-angle connector	M12 connector	Fixed cable
Outer electrode		1	White
Inner electrode	2	2	Brown
Temperature compensation (optional extra)	1	3	Yellow
	3	4	Green
3-wire circuit		5	

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## Order details

		(1) Basic type
		202924/10 JUMO tecLine CR-VA conductive 2-electrode conductivity sensor
		202924/20 JUMO tecLine CR-VA SL conductive 2-electrode conductivity sensor
		202924/21 JUMO tecLine CR-VA SL conductive 2-electrode conductivity sensor, short design
		202924/30 JUMO tecLine CR-PK conductive 2-electrode conductivity sensor
		202924/31 JUMO tecLine CR-PL conductive 2-electrode conductivity sensor
		(2) Cell constant
X	X X X X X	0001 K = 0.01 (measuring range 0.05 to 20 MΩcm or 0.05 to 20 μS/cm) <sup>a</sup>
X	X X X X X	0010 K = 0.1 (measuring range 0.1 μS/cm to 1 mS/cm) <sup>a</sup>
		(3) Measuring insert
		0000 None
X	X X X	1003 1 × Pt100 in 2-wire circuit
X	X X X X X	1005 1 × Pt1000 in 2-wire circuit
		(4) Process connection
X	X	104 Thread G 1/2 A
X		105 Thread G 3/4 A
X		106 Thread G 1 A
X		144 Thread 1/2"-14 NPT
X		145 Thread 3/4"-14 NPT
X		604 Taper socket for union nut DN 25 DIN 11851 (dairy pipe fitting)
X	X X	613 Clamp DN 25
	X X	997 JUMO PEKA <sup>b</sup> hygienic process connection (adapter system)
		(5) Electrical connection
X	X X	17 Permanent cable connection, line length 5 m
X	X X	37 Right-angle connector according to DIN EN 175301-803
	X X X X	83 M12 connector
		(6) Process connection material
X		24 Stainless steel 1.4404 (only in HT version (extra code 765))
X		26 Stainless steel 1.4571
X	X X X X X	31 Stainless steel 1.4435 (similar to 316L, version for pharmaceutical industry)
X		88 PVDF (default)
		(7) Electrode material
X	X X	24 Stainless steel 1.4404 (only in HT version (extra code 765))
X		26 Stainless steel 1.4571
X	X X X X X	31 Stainless steel 1.4435 (similar to 316L, version for pharmaceutical industry)
X	X X	60 Titanium <sup>c</sup>
		(8) Extra codes
X	X X X X X	000 None
X	X X X X X	374 Acceptance test certificate 3.1 material, according to DIN EN 10204
X		765 High temperature (HT) version <sup>d</sup> (Cell constant K = 0.1)
X	X X X X X	864 Acceptance test certificate 3.1 material, surface roughness ≤ 0.8 μm <sup>e</sup> (apart from the weld seam), according to DIN EN 10204
X	X X X X X	955 ASTM test report
X	X X X X X	956 FDA certificate

<sup>a</sup> The measuring ranges depend on the transducer being used. When used in measuring ranges larger than the "typical" one, incorrect measured values may occur due to polarization.

<sup>b</sup> Please order PEKA adapters separately, see accessories.

<sup>c</sup> Only available in connection with process connection material 88 (PVDF).

<sup>d</sup> Only available with process connection 145 (thread 3/4"-14 NPT).

<sup>e</sup> Acceptance test certificates with surface roughness ≤ 0.6 μm or ≤ 0.4 μm upon request.



