

Series 1004

Electrodes:

Electrodes, Mounted Inside of Tank

EVR...L1

Product Types

 $\frac{1}{4}$ " and up

NPT, ANSI

0-1400 psig

Operating Pressure



ABOUT SERIES 1004 Electrodes

Electrodes are electrically conducting rods that can be used to monitor and control filling levels. If the electrodes are immersed in an electrically conducting liquid, the resulting current will activate the relay contacts via a signal amplifier. These controllers are suitable for high/low alarms.

Unique Series Features

- Level switch function
- Up to 6 switch points
- For dirty liquids
- Up to 275°F working temperature
- Up to 1400 psi working pressure
- Strong applications
- Maintenance-free
- Smallest switching gaps realizable
- Sensitivity max. 1000 Kohm

Material Options:

- Stainless Steel
- Titanium
- Alloy C
- E-CTFE coated
- PFA coated

Approvals:

✔ PED 97/23/EG

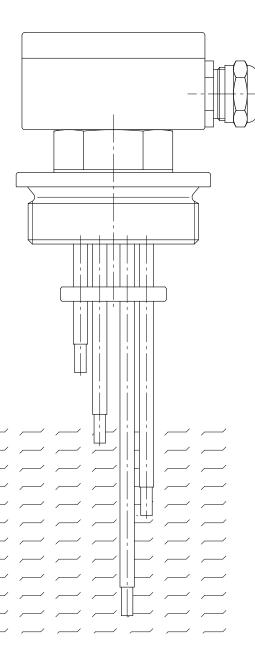


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Description and function



Electrodes are electrically conducting rods that can be used to monitor and control filling levels.

They work on the principle of conduction in association with level controllers (see chapter 1011).

If the electrodes are immersed in an electrically conducting liquid, the resulting current activates high-voltage, potential-free, relay contacts via a signal amplifier.

The signal-current circuit is isolated from the main power supply and is operated using protective low voltage. In order to prevent electrolytic action at the electrodes, the latter are operated with alternating voltage. Depending on the type of electrode and level controller used, these controllers are suitable for:

- high alarm
- low alarm
- full and empty pumping
- control with latching (self-locking)
- opening / closing valves with latching and dry-run protection

Use

Electrode controllers can be used in electrically conducting liquids such as, for example, milk, fruit juice, beer, water, waste water, acids, alkalis, etc.

Application

- food industry
- engineering industry
- construction of air conditioning systems
- heating systems
- houshold appliances
- water treatment
- construction of vehicles
- etc.

Advantages

- no mechanical moving components
- compact construction
- independent of specific gravity
- suitable for different pressures and temperatures, depending on design
- very efficient price-performance ratio



Certificates / Approvals

Certificates



swiss **TS**

SCHWEIZERISCHER VEREIN FÜR QUALITÄTS- UND MANAGEMENTSYSTEME

Certified according to ISO 9000 rev. 2000

SWISS TECHNICAL SERVICES AG

Approval as production factory, welding examination and procedure qualification incl. restamping certificate for the production of pressure tanks according to SVTI-regulation 501, 201

Approvals

The company Heinrich Kübler AG can manufacture electrodes to most approvals. Therefore a wide range of instruments with approvals requirements can be produced acc. to customer's requests.



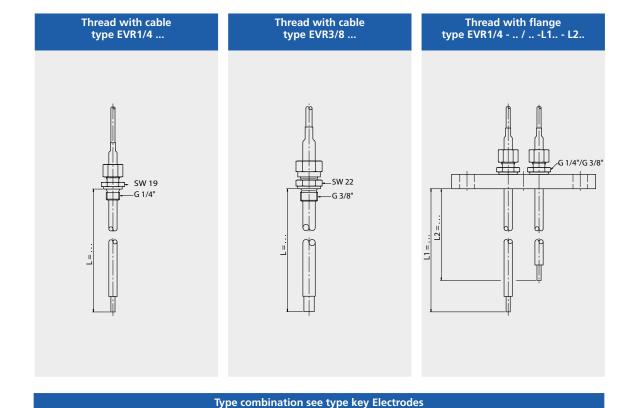
TECHNISCHER ÜBERWACHUNGSVEREIN DEUTSCHLAND (PED)

Approval as production factory for manufacture of pressure tanks acc. to AD HP 0 and acc. to PED Pressure Equipment Directive 97/23/EG



Stainless steel and Brass electrode

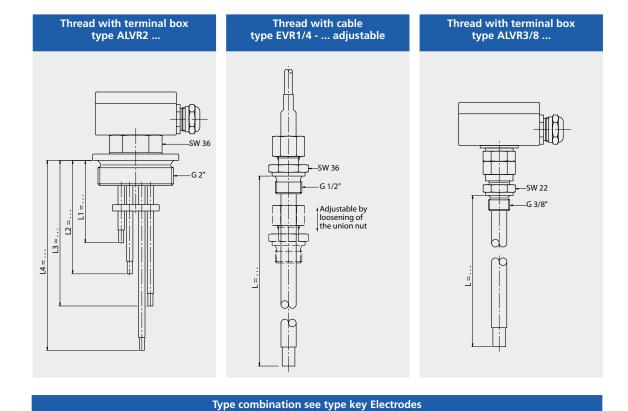
Technical data	Stainless steel	Brass
Connection sizes:	Thread BSP ¼" Thread NPT ¼" Flange DIN DN15 Flange Ansi ½"	Thread BSP ¼" Thread NPT ¼"
Electrode material:	Stainless steel Titanium (oper.temp10 °C)	Stainless steel
Diameter of electrode:	4 mm length to 3000 mm 10 mm length to 3000 mm	4 mm length to 3000 mm 10 mm length to 3000 mm
Quantity of electrode:	1 piece	1 piece
Isolation:	PTFE	PTFE
Thickness of isolation:	2 mm	2 mm
Approvals:	See approvals page 104	See approvals page 104
Operating parameters:	Oper.temp.: -160 °C +250 °C Pressure: -1 2 bar PVC cable temp.: -15 °C +80 °C Sil cable temp.: -30 °C +180 °C (Ambient temp. cable)	Oper.temp.: -30 °C +150 °C Pressure: -1 2 bar PVC cable temp.: -15 °C +100 °C Sil cable temp.: -30 °C +180 °C (Ambient temp. cable)





Stainless steel / Brass

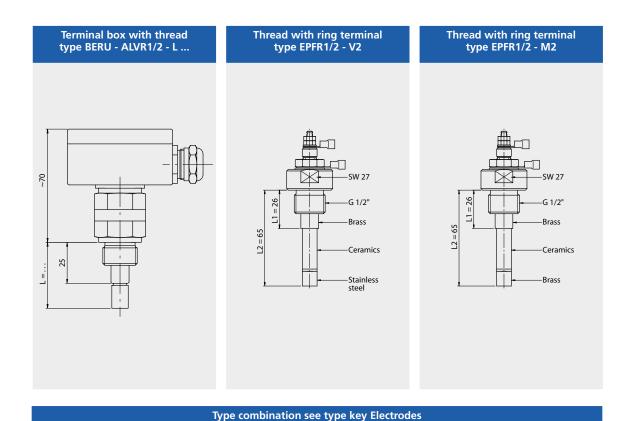
Technical data	Stainless steel	Brass
Connection sizes:	Thread BSP ¼" Thread NPT ¼" Flange DIN DN15 Flange Ansi ½"	Thread BSP ¼" Thread NPT ¼"
Electrode material:	Stainless steel Titanium (oper.temp10 °C)	Stainless steel
Diameter of electrode:	4 mm length to 3000 mm 10 mm length to 3000 mm	4 mm length to 3000 mm 10 mm length to 3000 mm
Quantity of electrode:	1 piece	1 piece
Isolation:	PTFE	PTFE
Thickness of isolation:	2 mm	2 mm
Approvals:	See approvals page 104	See approvals page 104
Operating parameters:	Oper.temp.: -160 °C +250 °C Pressure: -1 2 bar PVC cable temp.: -15 °C +80 °C Sil cable temp.: -30 °C +180 °C (Ambient temp. cable)	Oper.temp.: -30 °C +150 °C Pressure: -1 2 bar PVC cable temp.: -15 °C +80 °C Sil cable temp.: -30 °C +150 °C (Ambient temp. cable)





High pressure electrodes

Technical data	BERU - ALVR1/2 - L	EPFR1/2 - V2 - EPFR1/2 - M2
Connection sizes:	Thread BSP ½"	Thread BSP ½"
Connection material:	Stainless steel	Polyvinylidenfluoride
Electrode material:	Stainless steel	Stainless steel Brass
Diameter of electrode:	10 mm length to 1000 mm	10 mm length L1 = 26 mm L2 = 65 mm
Quantity of electrode:	1 piece	2 pieces
Isolation:	Ceramics	Ceramics
Pressure:	0 100 bar	010 bar
Temperature:	0 +80 °C	0 +135 °C
Thickness of isolation:	3 mm	2 mm
Approvals:	-	-
Media:	Conductive	Conductive





Type key

Code 1	Key 1	Electrical connection	ATEX
	AL	Aluminium terminal box	
	AV	Stainless steel terminal box	
	ALDC	Aluminium terminal box EExd explosion proof	
	ALD	Aluminium terminal box EExd explosion proof	
	AVD	Stainless steel terminal box EExd explosion proof	
	AP	Terminal box Polyester	
	AB	Terminal box ABS	
	AS	Connection plug	
	AF -	Connection plug with PA-flange	
	E -	Connection cable	
	-	Various	
	Key 2	Material of process connection	ATEX
	V	Stainless steel	
	Ti	Titanium	
	Н	Alloy	
	S	Steel	
	M	Brass	
	A	Aluminium	
	P	Polyvinylchloride PVC	
	PP	Polypropylene PP	
	PF	Polyvinylidenfluoride PVDF	
		Various	
	V 2	Barina ann ann ann an t-	ATEV
	Key 3	Design process connection	ATEX
	E -	Thread to the top DIN G ¼"	
	E NPT	Thread to the top NPT 1/4"	
	R	Thread to the bottom DIN G ¼"	
	NPT	Thread to the bottom NPT 1/4"	
	BKNW	Screwed connection according to DIN 11851, NW25	
	TC	Tri-Clamp flange DN 25	
	F -	Flange according to different standards	
	VE -	Various	

Type combination

Code	1	2	3	4	5
Key	1/2/3	1/1/1	1	1	1
Example	EPPF -	25/10/C	V -	L1	SIL



Type key

Code 2	Key 1	Flange dimensions and designs			ATEX	
	/ /	Standard	1. nom.width	2. nom.pressure	3. form	
		DIN	DN 15 500	PN 6 400	C, F, N, B	
		ANSI	¹/₂" 20 "	150 2500lbs	SF, RTJ, RF	
		JIS B 2010	¹/₂" 20"	5K 63K	A T	
		BSI BS 4504	DN 15 500	PN 6 400	6/x 400/x	
		S	Special flange v	vith outside diame	eter mm	
Code 3	Key 1	Electrode mate	arial			ATEX
Code 3	-					AILA
	V -	Stainless steel (a	also flexible)			
	Ti -	Titanium				
	H -	Alloy				
	M -	Brass				
		Various				
Code 4	Key 1	Length of rod	in mm			ATEX
	L1	for 1 - rod electr	rode			
	L1 L2	for 2 - rods elect	rode			
	L1 L2 L3	for 3 - rods elect	rode			
		etc.				
Code 5	Key 1	Cable / length				ATEX
	PVC -		de PVC (PVC-grey			
	PVC-blau -		de PVC (PVC-blue)		
	Sil -	Silicone				
	PUR -	Pur				
	FEP -	Teflon				
	Lit -	Insulated strar				
	NiLit -	Insulated nicke	el stranded wire			
	Radox -	Radox				
		Various				
	Options	ci. i i i i i i				
	/ CY	Shielded cable				
	/ ÖL	Oil resisting cab	le			

Type combination

Code	1	2	3	4	5
Key	1/2/3	1/1/1	1	1	1
Example	EPPF -	25/10/C	V -	L1	SIL