

Fuel Level Sensors

New Product Information
Standard Tubular Level Sensor



Content

1. Introduction	2
2. Product description	3
3. Specifications	5

1. Introduction

During the last years the market situation for tubular level sensors has changed. Apart from the observably constant decline in price level we also offer - besides customized solutions - an additional standard product line at very attractive price levels.

We are able to offer a standard program at a high quality. The idea was to transfer the established tubular sensor technology to a modular based design.

Today there are 60 different lengths of 150mm to 810mm available with various capability of connecting. Thus, most of customer demands can be met.

The advantage is a wide range of applications:

- Automotive
- Light and Heavy Duty commercial vehicles
- Off-Road applications
- Diesel and gasoline applications

Variants with two spade connectors 6.3 x 0.8mm included in delivery the following configurations of the electric connections are possible:

- Threaded stud M4 for signal output without ground connection
- Threaded stud M4 for signal output and spade connector for ground connection
- Spade connector for signal output without ground connection
- Spade connector for signal output and spade connector for ground connection

Please note: The standard tubular level sensors will not be available with warning contact.

2. Product description

Standard-Features:

- Resistance output
- Compatibility to VDO-gauges 301-010-00X, X10-110-981-009 (adjustable 60-90 ohm), VDO Viewline
- Electrical connection: Threaded stud M4 respectively spade connector
- Optional with ground connector
- Basically flange hole circle dia. 54mm

Design of a Standard Tubular Level Sensor:



Flange Type 1



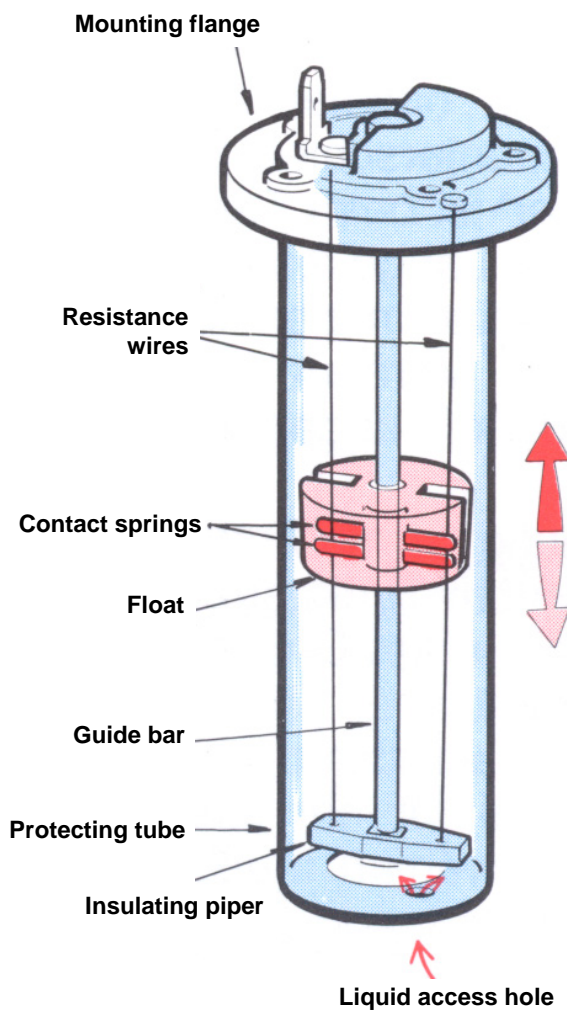
Flange Type 2



Flange Type 3



Schematic Diagram:



Today Table with 60 different lengths between 150mm and 810mm and the ohmic - values:

Artikelnr. / Part No.	Alte Artikelnr./ Old Part No.	L $\pm 2,0$ [mm]	R Voll R Full [ohm]	Toleranz Voll Tolerance Full	R Leer R Empty [ohm]	Toleranz Leer Tolerance Empty	Feder Spring	Flanschtype / Flange Type
224-011-000-150	224-011-000-015	150,0	4,5	$\pm 1,5$	69,0	$\pm 2,5$	Nein/ NO	1
224-011-000-160	224-011-000-016	160,0	4,5	$\pm 1,5$	74,0	$\pm 2,5$	Nein/ NO	1
224-011-000-170	224-011-000-017	170,0	4,5	$\pm 1,5$	79,5	$\pm 2,5$	Nein/ NO	1
224-011-000-180	224-011-000-018	180,0	3,0	$\pm 1,5$	64,0	$\pm 2,5$	Nein/ NO	1
224-011-000-190	224-011-000-019	190,0	3,0	$\pm 1,5$	68,0	$\pm 2,5$	Nein/ NO	1
224-011-000-200	224-011-000-020	200,0	2,5	$\pm 1,5$	68,0	$\pm 2,5$	Nein/ NO	1
224-011-000-210	224-011-000-021	210,0	3,0	$\pm 1,5$	76,0	$\pm 2,5$	Nein/ NO	1
224-011-000-220	224-011-000-022	220,0	3,0	$\pm 1,5$	80,0	$\pm 2,5$	Nein/ NO	1
224-011-020-221	224-082-008-021	221,0	3,0	$\pm 1,0$	78,8	$\pm 2,3$	Nein/ NO	2
224-011-000-230	224-011-000-023	230,0	2,5	$\pm 1,5$	84,0	$\pm 2,5$	Nein/ NO	1
224-011-000-240	224-011-000-024	240,0	2,5	$\pm 1,5$	65,5	$\pm 2,5$	Nein/ NO	1
224-011-000-250	224-011-000-025	250,0	2,5	$\pm 1,5$	72,0	$\pm 2,5$	Nein/ NO	1
224-011-010-251	224-082-006-097	251,0	2,0	$\pm 1,0$	62,5	$\pm 2,1$	Nein/ NO	1
224-011-000-260	224-011-000-026	260,0	2,5	$\pm 1,5$	72,0	$\pm 2,5$	Nein/ NO	1
224-011-000-270	224-011-000-027	270,0	2,5	$\pm 1,5$	74,5	$\pm 2,5$	Nein/ NO	1
224-011-020-279	224-082-007-022	279,0	2,0	$\pm 1,0$	70,3	$\pm 2,3$	Nein/ NO	2
224-011-000-280	224-011-000-028	280,0	2,5	$\pm 1,5$	75,5	$\pm 2,5$	Nein/ NO	1
224-011-000-290	224-011-000-029	290,0	2,5	$\pm 1,5$	78,0	$\pm 2,5$	Nein/ NO	1
224-011-020-292	224-082-007-035	292,0	2,0	$\pm 1,0$	73,8	$\pm 2,3$	Nein/ NO	2
224-011-000-300	224-011-000-030	300,0	2,5	$\pm 1,5$	82,8	$\pm 2,5$	Nein/ NO	1
224-011-000-310	224-011-000-031	310,0	2,5	$\pm 1,5$	84,0	$\pm 2,5$	Nein/ NO	1
224-011-010-311	224-082-005-136	311,0	2,5	$\pm 1,0$	81,2	$\pm 2,7$	Nein/ NO	1
224-011-000-320	224-011-000-032	320,0	2,5	$\pm 1,5$	69,5	$\pm 2,5$	Nein/ NO	1
224-011-000-330	224-011-000-033	330,0	2,5	$\pm 1,5$	72,0	$\pm 2,5$	Nein/ NO	1
224-011-000-340	224-011-000-034	340,0	2,5	$\pm 1,5$	74,0	$\pm 2,5$	Nein/ NO	1
224-011-010-341	224-082-005-137	341,5	2,0	$\pm 1,0$	89,8	$\pm 2,5$	Nein/ NO	1
224-011-010-345	224-082-005-108	345,0	2,0	$\pm 1,0$	88,7	$\pm 2,5$	Nein/ NO	1
224-011-000-350	224-011-000-035	350,0	2,5	$\pm 1,5$	79,6	$\pm 2,5$	Nein/ NO	1
224-011-000-360	224-011-000-036	360,0	2,5	$\pm 1,5$	69,0	$\pm 2,5$	Nein/ NO	1
224-011-000-370	224-011-000-037	370,0	2,5	$\pm 1,5$	71,0	$\pm 2,5$	Nein/ NO	1
224-011-010-372	224-082-005-085	372,0	1,0	$\pm 1,0$	65,7	$\pm 2,1$	Nein/ NO	1
224-011-020-372	224-082-007-004	372,0	1,0	$\pm 1,0$	65,7	$\pm 2,1$	Nein/ NO	2
224-011-000-380	224-011-000-038	380,0	2,5	$\pm 1,5$	73,0	$\pm 2,5$	Nein/ NO	1
224-011-000-390	224-011-000-039	390,0	2,5	$\pm 1,5$	75,0	$\pm 2,5$	Nein/ NO	1
224-011-000-400	224-011-000-040	400,0	2,5	$\pm 1,5$	74,9	$\pm 2,5$	Nein/ NO	1
224-011-010-404	224-082-005-142	404,0	1,0	$\pm 1,0$	73,3	$\pm 2,3$	Nein/ NO	1
224-011-010-433	224-082-005-098	433,0	1,0	$\pm 1,0$	77,3	$\pm 2,3$	Nein/ NO	1
224-011-110-442	224-082-005-127	442,0	1,0	$\pm 1,0$	80,6	$\pm 2,5$	Ja / YES	1
224-011-000-450	224-011-000-045	450,0	2,5	$\pm 1,5$	84,3	$\pm 2,5$	Nein/ NO	1
224-011-010-463	224-082-005-044	463,0	1,0	$\pm 1,0$	83,0	$\pm 2,5$	Nein/ NO	1
224-011-010-478	224-082-005-111	478,0	1,0	$\pm 1,0$	85,9	$\pm 2,5$	Nein/ NO	1
224-011-110-498	224-082-005-117	498,0	1,0	$\pm 1,0$	61,4	$\pm 2,1$	Ja / YES	1
224-011-000-500	224-011-000-050	500,0	2,5	$\pm 1,5$	75,4	$\pm 2,5$	Nein/ NO	1
224-011-022-521	224-082-007-007	521,0	1,0	$\pm 1,0$	94,1	$\pm 2,7$	Nein/ NO	3
224-011-000-550	224-011-000-055	550,0	2,5	$\pm 1,5$	77,6	$\pm 2,5$	Nein/ NO	1
224-011-010-590	224-082-005-123	590,0	1,0	$\pm 1,0$	73,3	$\pm 2,3$	Nein/ NO	1
224-011-022-590	224-082-007-021	590,0	1,0	$\pm 1,0$	73,3	$\pm 2,3$	Nein/ NO	3
224-011-120-596	224-082-007-017	596,0	1,0	$\pm 1,0$	74,1	$\pm 2,3$	Ja / YES	2
224-011-000-600	224-011-000-060	600,0	2,5	$\pm 1,5$	85,3	$\pm 2,5$	Nein/ NO	1
224-011-010-613	224-082-005-028	613,5	1,0	$\pm 1,0$	76,3	$\pm 2,3$	Nein/ NO	1
224-011-110-634	224-082-005-121	634,0	1,0	$\pm 1,0$	79,0	$\pm 2,3$	JA / YES	1
224-011-000-650	224-011-000-065	650,0	2,5	$\pm 1,5$	82,2	$\pm 2,5$	Nein/ NO	1
224-011-110-650	224-082-005-130	650,0	1,0	$\pm 1,0$	82,2	$\pm 2,5$	Ja / YES	1
224-011-110-664	224-082-005-129	664,0	1,0	$\pm 1,0$	84,0	$\pm 2,5$	Ja / YES	1
224-011-010-691	224-082-005-011	691,5	1,0	$\pm 1,0$	66,5	$\pm 2,1$	Nein/ NO	1
224-011-000-700	224-011-000-070	700,0	2,0	$\pm 1,5$	81,6	$\pm 2,5$	Nein/ NO	1
224-011-000-750	224-011-000-075	750,0	2,0	$\pm 1,5$	82,0	$\pm 2,5$	Nein/ NO	1
224-011-010-786	224-082-005-072	786,0	1,0	$\pm 1,0$	76,0	$\pm 2,3$	Nein/ NO	1
224-011-000-800	224-011-000-080	800,0	2,0	$\pm 1,5$	68,5	$\pm 2,5$	Nein/ NO	1
224-011-110-810	224-082-005-134	810,0	1,0	$\pm 1,0$	70,6	$\pm 2,3$	Ja / YES	1

3. Specifications (Technical Customer Documentation)

TU00-0772-0011101

The following tests have been accomplished:

- 1) Leak Tightness with Respect to Gas
- 2) Pressure Resistance
- 3) Aging in Mechanically Circulated Air without Load (Conditioning)
- 4) Temperature Cycle (with Specified Speed of Change)
- 5) Plug Resilience and Pull-out Strength
- 6) Resistance to Environmental Factors
- 7) Sealing against Dust and Water Spray
- 8) Humid Heat, Cyclic
- 9) Salt Spray Fog
- 10) Resistance to Chemical Agents
- 11) Vibration
- 12) Endurance Test