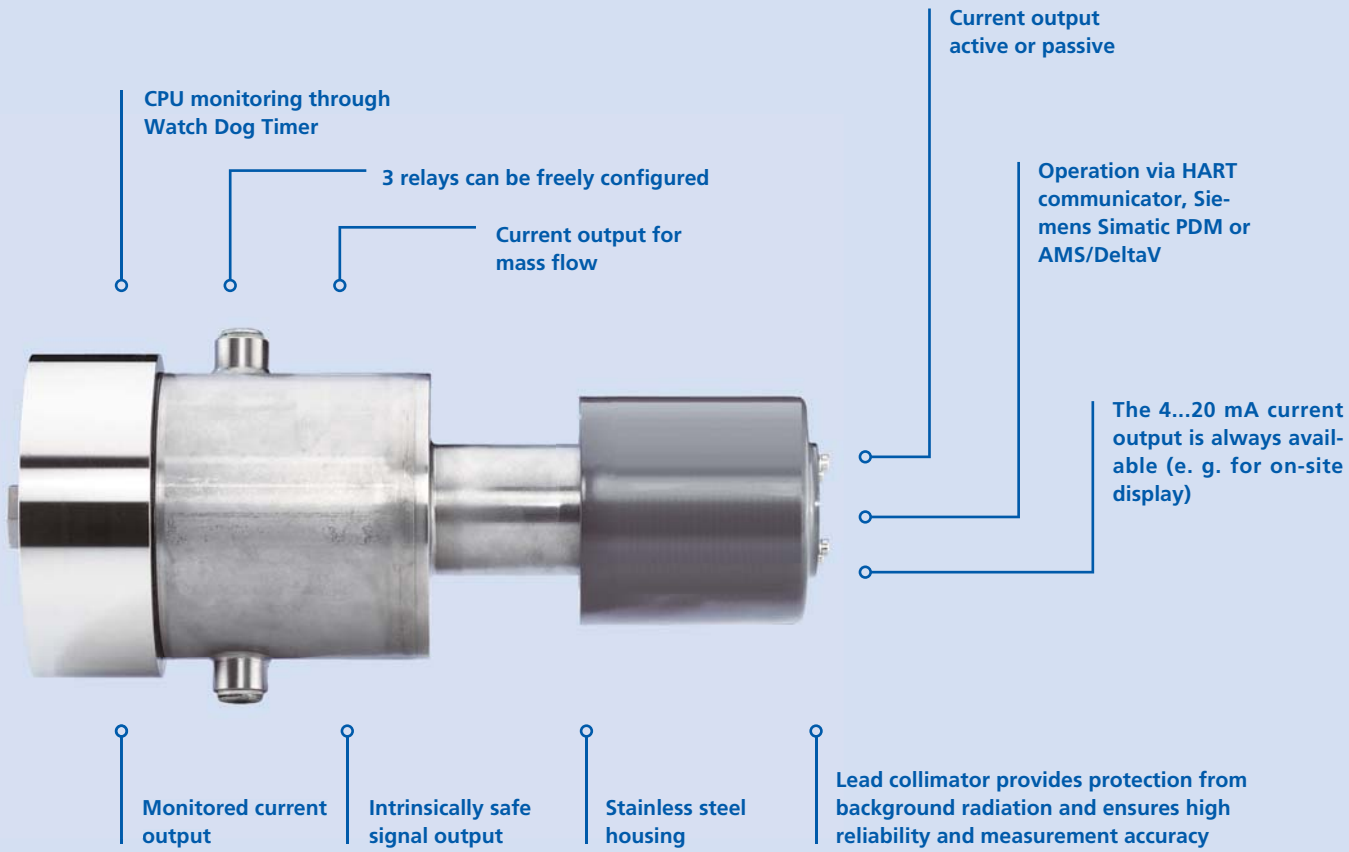
Uni-Probe LB 491

A universal field device for various applications

A versatile compact device

- Versatile detector for various applications
- Compact field device with integrated evaluation unit
- Communication via HART, Foundation Fieldbus or Profibus PA
- Communication can be switched from Bus to HART at any time
- Inexpensive and solid system for standard applications



Robust compact device for high demands

The density measurement system Uni-Probe LB 491 is a proven compact device provided with a robust stainless steel housing. It is inexpensive, reliable, precise and requires very little source activity. It features all common communication capabilities such as HART, Profibus PA and Foundation Fieldbus.

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Monitored current output

A monitored current output provides you with a high level of safety. It ensures that the correct measurement values are displayed. The device constantly compares the actually flowing current with the target value. In the event of deviations, a failure current is generated. A Watch Dog Timer monitors the functioning of the CPU simultaneously.

Mass flow

In combination with a flow rate measurement, the Uni-Probe LB 491 can also be used for determining the mass flow (t/h). The signal of the flow rate is directly transferred to the Uni-Probe as a 4-20 mA current signal before being internally offset against the density. The result is a reliable and precise mass flow measurement which combines all of the non-contacting measurement technology's benefits.

LB 491

Detector operating data

Power supply	100 … 240 VAC, ±10 %, 50 … 60 Hz, 15 VA 24 VDC (18 … 32 VDC), 15 W; 24 VAC +10 %/-15 %, 50 … 60 Hz, 15 VA
Cable connections	4 cable entries, 3/4 inch, NPT, closed with blind plug Option: metric adapters and cable glands upon request
Maximum cable length	3300 m (120 Ω), 1600 m (250 Ω), 800 m (500 Ω)
Wire cross-section	0.5 … 1.5 mm²
Housing material	Stainless steel ISO 1.4301 / AISI 304
Water cooling	Option, max. 6 bar

	Scintillator size Ø x length [mm]	Weight [kg]	Weight with cooling system [kg]	Collimator
CrystalSENS (point detectors)	50 x 50 NaI(Tl)	22,5	24	Standard
SuperSENS	150 x 150 polymer	52	62	Standard
Ambient temperature (Operation and storage)	-40 ... +60 °C (-40 ... +140 °F) for NaI(Tl) and/or -40 … +55 °C (-40 … +131 °F) for polymer Observe possible temp. restrictions for Ex-protection! for 100...240 VAC version, operation only up to max. 50 °C			
Temperature stability	≤0.002 %/°C (-40 ... +50 °C) for NaI(Tl) and/or ≤ 0.01 %/°C (-40 … +50 °C) for polymer			

Detector certificates & tests

IP protection	IP65 / IP66 + Nema 4X		
Explosion protection	ATEX:	II 2 GD EEx d IIB T5 IP66 T80 °C	-40 … +80 °C
		II 2 GD EEx d IIC T6 IP66 T80 °C	-40 … +60 °C
		(...+50 °C for LB 490 TowerSENS and SuperSENS)	
		II 2 GD EEx d [ia] IIC T6 IP66 T80 °C	-20 … +50 °C
	FM/CSA:	Class I Division 1 Group A, B, C, D	
		Class II Division 1, Group E, F, G	-40 … +50 °C
Other certificates	Nepsi, IECEx, Kosha, CCOE, others upon request		

Signal inputs and outputs

Signal output	HART 4 … 20 mA potential-free, active or passive max. impedance: 500 Ω (active) Power supply: 12 V … 24 V (passive) max. impedance at 12 V: 250 Ω and/or 24 V: 500 Ω (passive) Option: intrinsically safe HART current output 4 ... 20 mA, potential-free, passive Power supply: 12 ... 30 V, voltage drop <3.5 V, 20 m signal cable (blue), pre-assembled Exi IIB: Lo=14.78 mH; Co=679 nF / Exi IIC: Lo=2.18 mH; Co=84 nF
Bus output - option	Bus interface: Profibus PA or Foundation Fieldbus Bus powered, typical 13 mA with 2xAI function blocks Option: intrinsically safe Bus interface, 20 m signal cable (blue), pre-assembled Approval according to ATEX and FISCO
Digital inputs	Dig In 1: Hold input , Dig In 2: Empty adjustment
Analogue input	Pt100 for temperature compensation
Digital outputs	1 relay (SPDT) for collective fault message 3 relays (SPDT) alternatively for: Hold signal, min. / max. alarm, Detector temperature, radiation interference detection Permissible load at ohmic load: max. 5 A at 250 VAC or 30 VDC
Interfaces	RS 232 for software update
Data backup	in non-volatile memory