

Type UB1 Load Cell



Flintec load cells are designed to meet the most stringent accuracy requirements. Certifications have been obtained from Weights & Measures Authorities, worldwide.

UB1 universal load cells are available in the capacities 10 kN to 50 kN (1020 kg to 5099 kg) and include Accuracy Classifications GP, C1 and C3 according to OIML R 60.

They offer total stainless steel construction and complete hermetic sealing, making them suitable for use in the toughest industrial environments.

The Flintec calibration technique (in mV/V/ Ω) eliminates time consuming corner calibration in multiple load cell systems.

The UB1 is available for use in hazardous areas zone 1, 2 (gas) and 21, 22 (dust) according to EEx ia IIC T6...T4 T130°C ATEX.

Important Features

- Capacities: 10 kN to 50 kN.
- High accuracy.
- Total stainless steel construction.
- Complete hermetic sealing.
- Protection IP 68.
- High input resistance: 1100 Ω .
- W&M certified for 3000 intervals.
- Calibration in mV/V/ Ω .
- Easy cable replacement.
- Complete range of loading hardware available.
- Factory mutual approved.

Option

• Explosion protection zone 1, 2, 21 and 22 ATEX.

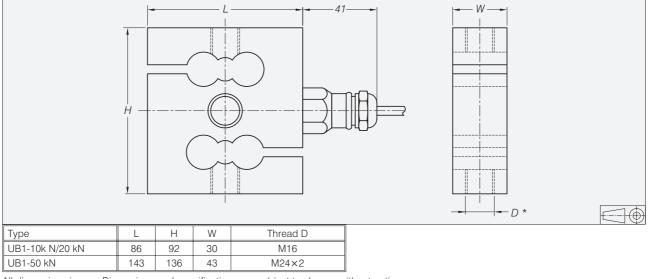
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UB1 Specifications

Maximum capacity (= E_{max})kN10 / 20 / 50Metric equivalents (1 N=0.10197 kg)kg1020 / 2039 / 5099Rated Output (=RO)mV/V2 ± 0.1%Calibration in mV/V/2 (AI classified)%RO $\leq \pm 0.05 (\leq \pm 0.005)$ Accuracy class according to OIML R 60(GP)C1C3Maximum number of verification intervals (n)n.a.10003000Minimum load cell verification intervals (n)n.a. $E_{max} / 5700$ Combined error%RO $\leq \pm 0.040$ $\leq \pm 0.030$ $\leq \pm 0.020$ Creep error (30 minutes) / DR%RO $\leq \pm 0.066$ $\leq \pm 0.049$ $\leq \pm 0.024$ Temperature effect on minimum dead load output%RO/°C $\leq \pm 0.0040$ $\leq \pm 0.0016$ $\leq \pm 0.0024$ Temperature effect on sensitivity%/°C $\leq \pm 0.0020$ $\leq \pm 0.0016$ $\leq \pm 0.0011$ Excitation voltageV 515 $Zero$ balance $\Re RO$ $\leq \pm 1.0$ Input resistance Ω 1106 ± 5 0.0024 $Zero$ balance $\Re RO$ Compensated temperature range°C $-10+40$ 0.0024 Operating temperature range°C $-10+40$ 0.000 Utimate load%E _{max} 200 0.000 Utimate load%E _{max} 200 0.000 Utimate load%E _{max} 200 0.000 Complete hermetic sealing; cable entry sealed by glass to metal headerPataering according DIN 40.0E0Complete hermetic sealing; cable entry sealed by glass to metal header						
Rated Output (=RO)mV/V $2 \pm 0.1\%$ Calibration in mV/V(Ω (AI classified)%RO $\leq \pm 0.05$ ($\leq \pm 0.005$)Accuracy class according to OIML R 60(GP)C1C3Maximum number of verification intervals (n)n.a.10003000Minimum load cell verification intervals (m)n.a. E_{max} /5000 E_{max} /5700Combined error%RO $\leq \pm 0.040$ $\leq \pm 0.030$ $\leq \pm 0.020$ Creep error (30 minutes) / DR%RO $\leq \pm 0.040$ $\leq \pm 0.049$ $\leq \pm 0.0028$ Temperature effect on minimum dead load output%RO/°C $\leq \pm 0.0020$ $\leq \pm 0.0028$ $\leq \pm 0.0024$ Temperature effect on sensitivity%/°C $\leq \pm 0.0020$ $\leq \pm 1.0016$ $\leq \pm 0.0011$ Excitation voltageV 515 $Zero$ balance $\%RO$ $\leq \pm 1.0$ Input resistance Ω 1106 ± 5 0.000 ± 1 1.000 ± 1 Insulation resistance (100 V DC)MQ ≥ 5000 $Zo00$ Compensated temperature range°C $-40+80$ Safe load limit% E_{max} 200 Uttimate load% E_{max} 300 Load cell material $Sealing$ $Complete hermetic sealing; cable entry sealed by glass to metal header$	Maximum capacity (=E _{max})	kN	10 / 20 / 50			
Calibration in mV/V/ Ω (AI classified)%RO $\leq \pm 0.05 (\leq \pm 0.005)$ Accuracy class according to OIML R 60(GP)C1C3Maximum number of verification intervals (n)n.a.10003000Minimum load cell verification intervals (n)n.a. $E_{max}/5000$ $E_{max}/5700$ Combined error%RO $\leq \pm 0.040$ $\leq \pm 0.030$ $\leq \pm 0.020$ Creep error (30 minutes) / DR%RO $\leq \pm 0.060$ $\leq \pm 0.049$ $\leq \pm 0.0028$ Temperature effect on minimum dead load output%RO/°C $\leq \pm 0.0040$ $\leq \pm 0.0028$ $\leq \pm 0.0024$ Temperature effect on sensitivity%/°C $\leq \pm 0.0020$ $\leq \pm 0.0016$ $\leq \pm 0.0011$ Excitation voltageV 515 $Zero$ balance $%RO$ $\leq \pm 1.0$ Input resistance Ω 1106 ± 5 0000 $Zo00$ Compensated temperature range°C $-10+40$ $Operating temperature range°COperating temperature range°C-40+80300Safe load limit%E_{max}300Zo00Ultimate load%E_{max}300Load cell materialStainless steel 17-4 PH (1.4548)Sealingcomplete hermetic sealing; cable entry sealed by glass to metal header$	Metric equivalents (1 N=0.10197 kg)	kg	1020 / 2039 / 5099			
Accuracy class according to OIML R 60(GP)C1C3Maximum number of verification intervals (n)n.a.10003000Minimum load cell verification interval (v_{min})n.a. $E_{max}/5000$ $E_{max}/5700$ Combined error%RO $\leq \pm 0.040$ $\leq \pm 0.030$ $\leq \pm 0.020$ Creep error (30 minutes) / DR%RO $\leq \pm 0.060$ $\leq \pm 0.049$ $\leq \pm 0.020$ Temperature effect on minimum dead load output%RO/°C $\leq \pm 0.0040$ $\leq \pm 0.0028$ $\leq \pm 0.0024$ Temperature effect on sensitivity%/°C $\leq \pm 0.0020$ $\leq \pm 0.0016$ $\leq \pm 0.0014$ Excitation voltageV515Zero balance%RO $\leq \pm 1.0$ Input resistanceQ1106 ± 5 Output resistanceQ1000 ± 1 Insulation resistance (100 V DC)MQ ≥ 5000 Compensated temperature range°C $-40+80$ Safe load limit%E _{max} 200Ultimate load%E _{max} 300Load cell materialstainless steel 17-4 PH (1.4548)Sealingcomplete hermetic sealing; cable entry sealed by glass to metal header	Rated Output (=RO)	mV/V	2 ± 0.1%			
Maximum number of verification intervals (n)n.a.10003000Minimum load cell verification intervals (n)n.a. E_{max} /5000 E_{max} /5700Combined error%RO $\leq \pm 0.040$ $\leq \pm 0.030$ $\leq \pm 0.020$ Creep error (30 minutes) / DR%RO $\leq \pm 0.060$ $\leq \pm 0.049$ $\leq \pm 0.0028$ Temperature effect on minimum dead load output%RO/°C $\leq \pm 0.0040$ $\leq \pm 0.0028$ $\leq \pm 0.0024$ Temperature effect on sensitivity%/°C $\leq \pm 0.0020$ $\leq \pm 0.0016$ $\leq \pm 0.0011$ Excitation voltageV515Zero balance%RO $\leq \pm 1.0$ Input resistance Ω 1106 ± 5 Output resistance Ω 1000 ± 1 Insulation resistance (100 V DC)MQ ≥ 5000 Compensated temperature range°C $-40+80$ Safe load limit%E _{max} 200Ultimate load%E _{max} 300Load cell materialstainless steel 17-4 PH (1.4548)Sealingcomplete hermetic sealing; cable entry sealed by glass to metal header	Calibration in mV/V/ Ω (AI classified)	%RO	≤ ± 0.05 (≤ ± 0.005)			
Minimum load cell verification interval (V_{min})n.a. E_{max} /5000 E_{max} /5700Combined error%RO $\leq \pm 0.040$ $\leq \pm 0.030$ $\leq \pm 0.020$ Creep error (30 minutes) / DR%RO $\leq \pm 0.060$ $\leq \pm 0.049$ $\leq \pm 0.016$ Temperature effect on minimum dead load output%RO/°C $\leq \pm 0.0040$ $\leq \pm 0.0028$ $\leq \pm 0.0024$ Temperature effect on sensitivity%/°C $\leq \pm 0.0020$ $\leq \pm 0.0016$ $\leq \pm 0.0011$ Excitation voltageV515Zero balance%RO $\leq \pm 1.0$ Input resistance Ω 1106 ± 5 Output resistance Ω 1000 ± 1 Insulation resistance (100 V DC)M Ω ≥ 5000 Compensated temperature range°C $-40+80$ Safe load limit% E_{max} 200Ultimate load% E_{max} 300Load cell materialstainless steel 17-4 PH (1.4548)Sealingcomplete hermetic sealing; cable entry sealed by glass to metal header	Accuracy class according to OIML R 60		(GP) C1 C3			
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Creep error (30 minutes) / DR $\%$ RO $\le \pm 0.060$ $\le \pm 0.049$ $\le \pm 0.016$ Temperature effect on minimum dead load output $\%$ RO/°C $\le \pm 0.0040$ $\le \pm 0.0028$ $\le \pm 0.0024$ Temperature effect on sensitivity $\%$ /°C $\le \pm 0.0020$ $\le \pm 0.0016$ $\le \pm 0.0016$ Excitation voltageV 515 Zero balance $\%$ RO $\le \pm 1.0$ Input resistance Ω 1106 ± 5 Output resistance Ω 1000 ± 1 Insulation resistance (100 V DC)M Ω ≥ 5000 Compensated temperature range°C $-10+40$ Operating temperature range°C $-40+80$ Safe load limit $\%$ E _{max} 200Utimate load $\%$ E _{max} 300Load cell materialStainless steel 17-4 PH (1.4548)Sealingcomplete hermetic sealing; cable entry sealed by glass to metal header	Minimum load cell verification interval (v _{min})		n.a.	E _{max} /5000	E _{max} /5700	
Temperature effect on minimum dead load output $\ensuremath{\%}RO/^\circ C$ $\le \pm 0.0040$ $\le \pm 0.0028$ $\le \pm 0.0024$ Temperature effect on sensitivity $\ensuremath{\%}/^\circ C$ $\le \pm 0.0020$ $\le \pm 0.0016$ $\le \pm 0.0011$ Excitation voltageV 515 Zero balance $\ensuremath{\%}RO$ $\le \pm 1.0$ Input resistance $\ensuremath{\Omega}$ 1106 ± 5 Output resistance $\ensuremath{\Omega}$ 1000 ± 1 Insulation resistance (100 V DC)M $\ensuremath{\Omega}$ ≥ 5000 Compensated temperature range $\ensuremath{^\circ} C$ $-10+40$ Operating temperature range $\ensuremath{^\circ} C$ $-40+80$ Safe load limit $\ensuremath{^\otimes} E_{max}$ 200 Ultimate load $\ensuremath{^\otimes} E_{max}$ 300 Load cell material $\ensuremath{^\circ} Stainless steel 17-4 PH (1.4548)$ Sealing $\ensuremath{^\circ} complete hermetic sealing; cable entry sealed by glass to metal header$	Combined error	%RO	≤ ± 0.040	≤ ± 0.030	≤ ± 0.020	
Temperature effect on sensitivity%/°C $\leq \pm 0.0020$ $\leq \pm 0.0016$ $\leq \pm 0.0011$ Excitation voltageV 515 Zero balance%RO $\leq \pm 1.0$ Input resistance Ω 1106 ± 5 Output resistance Ω 1000 ± 1 Insulation resistance (100 V DC)M Ω ≥ 5000 Compensated temperature range°C $-10+40$ Operating temperature range°C $-40+80$ Safe load limit%E _{max} 200Ultimate load%E _{max} 300Load cell materialStainless steel 17-4 PH (1.4548)Sealingcomplete hermetic sealing; cable entry sealed by glass to metal header	Creep error (30 minutes) / DR	%RO	$\leq \pm 0.060$	≤ ± 0.049	≤ ± 0.016	
Excitation voltageV515Zero balance%RO $\leq \pm 1.0$ Input resistance Ω 1106 ± 5 Output resistance Ω 1000 ± 1 Insulation resistance (100 V DC)M Ω ≥ 5000 Compensated temperature range°C $-10+40$ Operating temperature range°C $-40+80$ Safe load limit%E _{max} 200Ultimate load%E _{max} 300Load cell materialstainless steel 17-4 PH (1.4548)Sealingcomplete hermetic sealing; cable entry sealed by glass to metal header	Temperature effect on minimum dead load output	%RO/°C	≤ ± 0.0040	≤ ± 0.0028	≤ ± 0.0024	
Zero balance%RO $\leq \pm 1.0$ Input resistance Ω 1106 ± 5 Output resistance Ω 1000 ± 1 Insulation resistance (100 V DC)MQ ≥ 5000 Compensated temperature range°C $-10+40$ Operating temperature range°C $-40+80$ Safe load limit%E _{max} 200Ultimate load%E _{max} 300Load cell materialstainless steel 17-4 PH (1.4548)Sealingcomplete hermetic sealing; cable entry sealed by glass to metal header	Temperature effect on sensitivity	%/°C	≤ ± 0.0020	≤ ± 0.0016	≤ ± 0.0011	
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Excitation voltage	V	515			
Output resistance Ω 1000 ± 1 Insulation resistance (100 V DC) MΩ ≥ 5000 Compensated temperature range °C -10+40 Operating temperature range °C -40+80 Safe load limit %E _{max} 200 Ultimate load %E _{max} 300 Load cell material Stainless steel 17-4 PH (1.4548) Sealing complete hermetic sealing; cable entry sealed by glass to metal header	Zero balance	%RO	≤ ± 1.0			
Insulation resistance (100 V DC) MΩ ≥ 5000 Compensated temperature range °C -10+40 Operating temperature range °C -40+80 Safe load limit %E _{max} 200 Ultimate load %E _{max} 300 Load cell material Stainless steel 17-4 PH (1.4548) Sealing complete hermetic sealing; cable entry sealed by glass to metal header	Input resistance	Ω	1106 ± 5			
Compensated temperature range °C -10+40 Operating temperature range °C -40+80 Safe load limit %E _{max} 200 Ultimate load %E _{max} 300 Load cell material Stainless steel 17-4 PH (1.4548) Sealing complete hermetic sealing; cable entry sealed by glass to metal header	Output resistance	Ω	1000 ± 1			
Operating temperature range °C -40+80 Safe load limit %E _{max} 200 Ultimate load %E _{max} 300 Load cell material Stainless steel 17-4 PH (1.4548) Sealing complete hermetic sealing; cable entry sealed by glass to metal header	Insulation resistance (100 V DC)	MΩ	≥ 5000			
Safe load limit %E _{max} 200 Ultimate load %E _{max} 300 Load cell material %E _{max} 300 Sealing complete hermetic sealing; cable entry sealed by glass to metal header	Compensated temperature range	°C	-10+40			
Ultimate load %E _{max} 300 Load cell material %E _{max} stainless steel 17-4 PH (1.4548) Sealing complete hermetic sealing; cable entry sealed by glass to metal header	Operating temperature range	°C	-40+80			
Load cell material stainless steel 17-4 PH (1.4548) Sealing complete hermetic sealing; cable entry sealed by glass to metal header	Safe load limit	%E _{max}	200			
Sealing complete hermetic sealing; cable entry sealed by glass to metal header	Ultimate load	%E _{max}	300			
	Load cell material		stainless steel 17-4 PH (1.4548)			
Protection according DIN 40.050	Sealing		complete hermetic sealing; cable entry sealed by glass to metal header			
	Protection according DIN 40.050		IP 68			

Dimensions

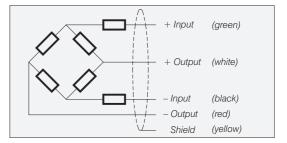


All dimensions in mm. Dimensions and specifications are subject to change without notice.

* Unified thread 5/8-18 UNF (10...20 kN) and 1-12 UNF (50 kN) is available.

Wiring

- The load cell is provided with a shielded, 4 conductor cable (AWG 24).
- Cable length: 6 m.
- Cable diameter: 5 mm.
- The shield is floating.



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