



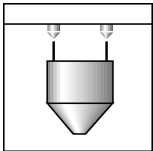
# U2A...

## Load cells

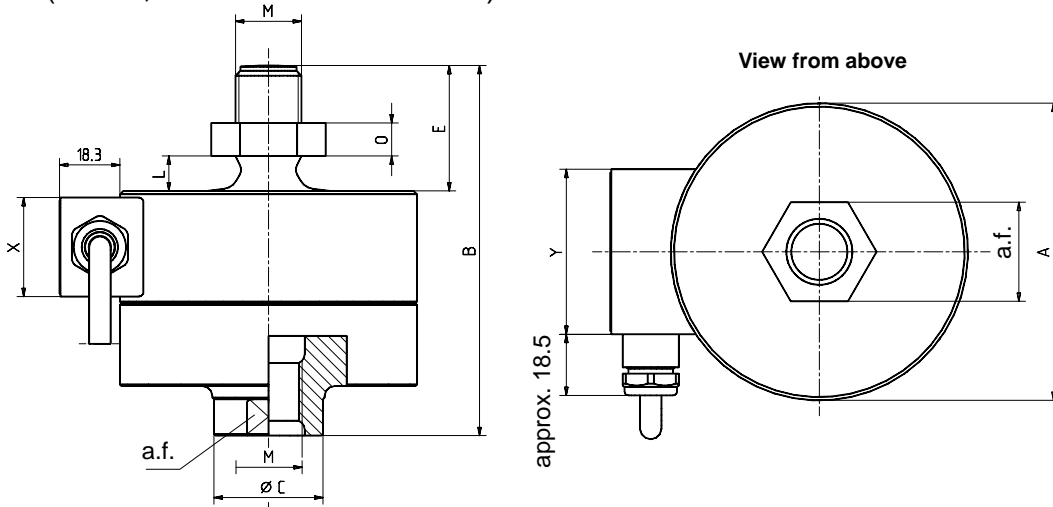


### Special features

- Load cells made of stainless steel
- Max. capacities: 50 kg ... 20 t
- Suitable for scales according to OIML R60 up to 1000 d
- Six wire circuit
- Low profile
- For tensile loads
- Meets EMC requirements according to EN 45 501
- Explosion proof version according to ATEX 95 (optional)



Dimensions (in mm; 1 mm= 0.03937 inches)



Max. cap. [t]	A-0,2	B	C	E	L <sub>min</sub>	M	O	a.f.	X	Y
0.05...1	50	72	21	24	5*)	M12	6	19	20	35
2	90	112	33	38	10.6	M20x1.5	10	30	30	50
5	100	141	40	47	13.2	M24x2	12	36	30	50
10	135	197	68	67	19	M39x2	19	60	30	50
20	155	232	82	85	24.2	M48x2	22	70	30	50

\*) with U2A/1 t: 7.4 mm



## Specifications

Type		U2A		
Accuracy class		0.2	0.1	D1
Max. numbers of load cell verification interval ( $n_{LC}$ )		-	-	1000
Max. capacity ( $E_{max}$ )	kg t	50 -	100, 200, 500 10, 20	500 1, 2, 5
Minimum load cell verification interval ( $v_{min}$ )		-	-	0.0286
Sensitivity ( $C_n$ )	mV/V	2		
Tolerance on sensitivity with tensile loads	%	<±0.20		<±0.20
with compressive loads	%	<±1.50	<±0.50	<±0.50
Temperature effect on sensitivity ( $TK_C$ ) <sup>1)</sup>				
in nominal temperature range	%/10 K	<±0.05		<±0.05
in service temperature range	%/10 K	<±0.10		<±0.10
Temperature effect on zero balance ( $TK_0$ )				
in nominal temperature range	%/10 K	<±0.05		<±0.04
in operating temperature range	%/10 K	<±0.10		<±0.10
Hysteresis error ( $d_{hy}$ ) <sup>1)</sup>	%	<±0.15		<±0.05
Non-linearity ( $d_{lin}$ ) <sup>1)</sup>	%	<±0.20	<±0.10	<±0.05
Creep ( $d_{cr}$ ) over 30 min.	%	<±0.06		<±0.05
Input resistance ( $R_{LC}$ )	Ω	340...450		
Output resistance ( $R_0$ )	Ω	356±0.2		
Insulation resistance ( $R_{iso}$ )	GΩ	>5		
Reference excitation voltage ( $U_{ref}$ )	V	5		
Nominal range of excitation voltage ( $B_U$ )	V	0.5...10	0.5...12	
Max. permissible excitation voltage	V	12	18	
Nominal temperature range ( $B_T$ )		-10...+40 [14...104]		
Operating temperature range ( $B_{tu}$ ) <sup>2)</sup>	°C [°F]	-30...+85 (-30...+120) [-22...185] [-22...248]		
Storage temperature range ( $B_{st}$ )		-50...+85[-58...185]		
Safe load limit ( $E_L$ )		130	150	
Breaking load ( $E_d$ )		300		
Rel. stat. lateral load limit ( $E_{lq}$ )	% from max. capac.	25		
Permissible dynamic load ( $F_{srel}$ ) (peak to peak according to DIN 50100)		100	160	
Degree of protection (IP) to EN 60 529 (IEC 529)		IP 68 (test conditions: 100 h at 1 m water column) IP 69 K (water at high pressure, steam jet cleaning)		
Material: Measuring body		Stainless steel		
Cable gland		Nickel plated brass, Silicone		
Cable sheath		Thermoplast. elastomere		

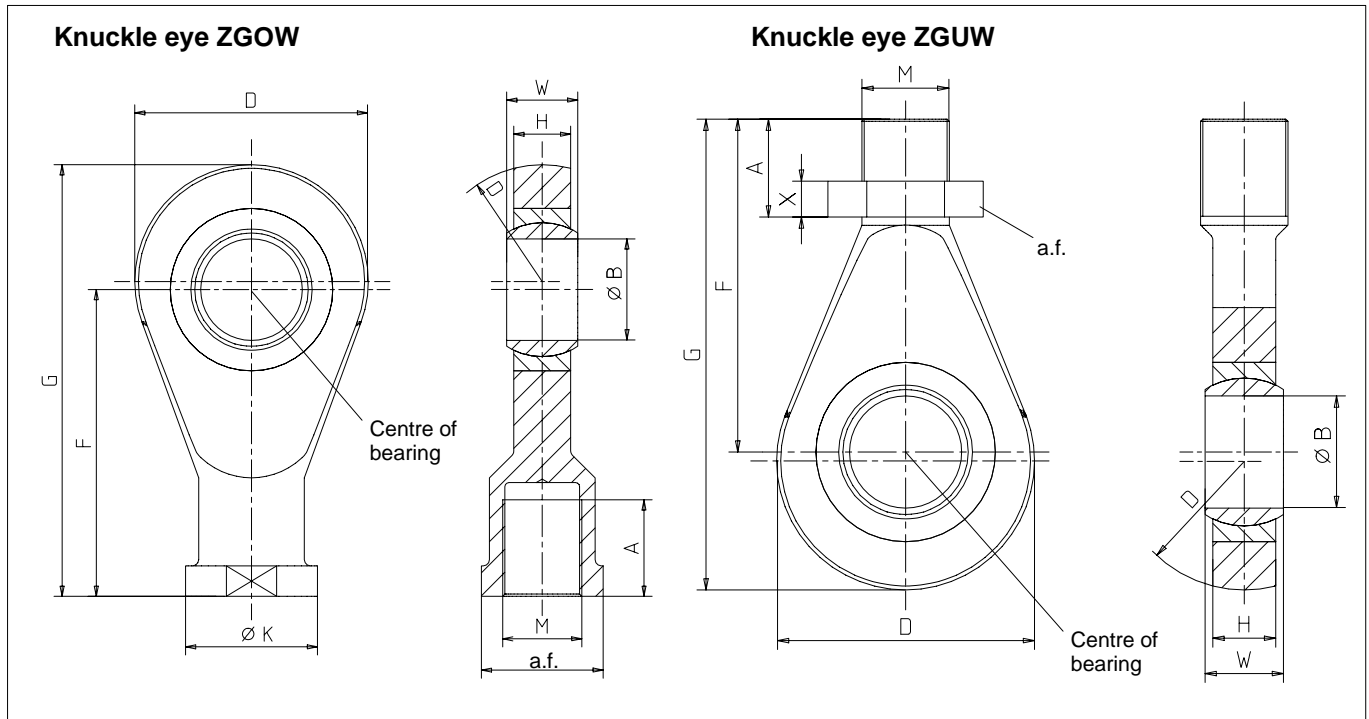
<sup>1)</sup> The data for Non-linearity, hysteresis error and temperature effect on sensitivity are typical values. The sum of these data meets the requirements according to OIML R60.

<sup>2)</sup> Optionally available with extended operating temperature range.

## Mechanical values

Max. capacity [t]	Deflection at max. capacity ( $s_{nom}$ ), approx. [mm]	Weight (G), approx. [kg]	Cable length [m]
0.05	< 0.1	0.8	3
0.1	< 0.1	0.8	3
0.2	< 0.1	0.8	3
0.5	< 0.1	0.8	3
1	< 0.1	0.8	3
2	< 0.07	2.9	6
5	< 0.07	4.3	6
10	< 0.09	10.7	12
20	< 0.09	15.9	12

Mounting accessories (in mm; 1 mm = 0.03937 inches)



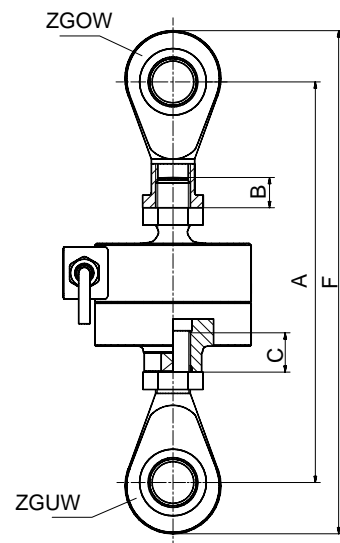
Max. cap. [t]	Knuckle eye ZGOW	Weight [kg]	A	ØB	D	F	G	H	ØK	M	a.f.	W
0.05...1	U2A/1T/ZGOW	0.2	22	12 <sup>H7</sup>	32	50	66	12	22	M12	19	16
2	U2A/2T/ZGOW	0.5	33	20 <sup>H7</sup>	50	77	102	18	34	M20x1.5	32	25
5	U2A/5T/ZGOW	0.8	42	25 <sup>H7</sup>	60	94	124	22	42	M24x2	36	31
10	U2A/10T/ZGOW	3.2	50	50 <sup>+0.002 -0.014</sup>	115	151	212,5	28	65	M39x2	60	35
20	U2A/20T/ZGOW	4.8	60	60 <sup>+0.003 -0.018</sup>	126	167	235	36	82	M48x2	70	44

Max. cap. [t]	Knuckle eye ZGUW	Weight [kg]	A	ØB	D	F	G	H	M	a.f.	W	X
0.05...1	U2A/1T/ZGUW	0.1	33	12 <sup>H7</sup>	32	54	70	12	M12	19	16	7
2	U2A/2T/ZGUW	0.2	47	20 <sup>H7</sup>	50	78	103	18	M20x1,5	32	25	9
5	U2A/5T/ZGUW	0.4	57	25 <sup>H7</sup>	60	94	124	22	M24x2	36	31	10
10	U2A/10T/ZGUW	1.1	65.5	50 <sup>+0.002 -0.014</sup>	115	148.5	210	28	M39x2	60	35	16
20	U2A/20T/ZGUW	3.2	80	60 <sup>+0.003 -0.018</sup>	126	168	236	36	M48x2	70	44	18

Load cell U2A with monted knuckle eyes ZGOW, ZGUW

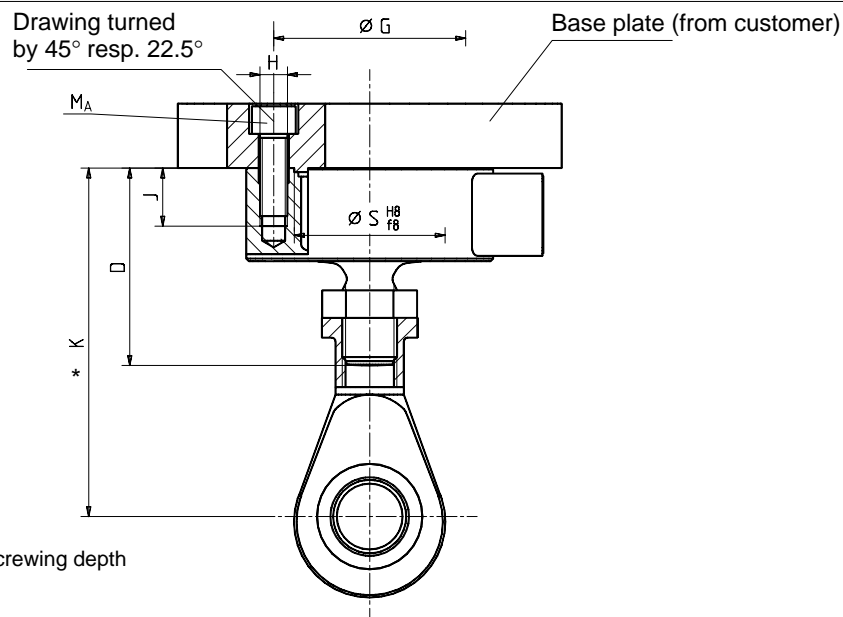
Max. capacity [t]	A <sub>min</sub>	A <sub>max</sub>	F <sub>min</sub>	F <sub>max</sub>	Min. depth for screwing		Tightening torque M <sub>A</sub> [N·m]
					B	C	
0.05...0.5	139	156	171	188	9.6	9.6	60 *)
1	141	156	173	188	9.6	9.6	60
2	212	234	262	284	16	16	300
5	260	288	320	348	19.2	19.2	500
10	418	436	541	559	27	31.2	2500
20	466	489	602	625	36.6	38.4	4500

\*) Do not exceed this value and handle the load cell with care during fastening to avoid damage to the thin measuring diaphragm. Hold the lock nut in place.



## Mounting accessories, continued (in mm; 1 mm = 0.03937 inches)

U2A, with ZGOW,  
without adaptor

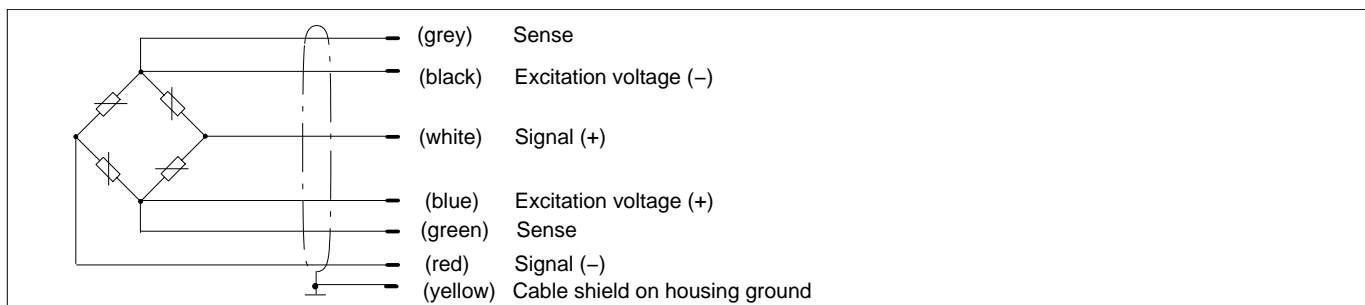


\* Dimension, with preferred screwing depth

Max. capacity [t]	D	ØG	H	J	K	ØS	MA <sup>1)</sup> [N·m]
0,05...0,5	47	42	4xM5	13	84...86,4	34	5
1	47	42	4xM5	13	86,4	34	5
2	72	70	4xM10	20,5	131,6	55	35
5	86	78	4xM12	19	158,2	61	60
10	122	105	8xM12	16	244	79	60
20	142	125	8xM16	26	270,2	97	150

<sup>1)</sup> Recommended values for a dry thread, using a torque wrench

## Wiring code



## Options

### Explosion-proof versions according to ATEX 95:

- II 2 G EEx ia IIC T4 resp. T6 (Zone 1) \*)
- II 2 D IP67 T80°C (Zone 21) \*)
- II 3 G EEx nA II T6 (Zone 2)
- II 3 D IP67 T80°C (Zone 22 for non-conductive dust)

\*) with EC-type examination certificate

**Operating temperature range extended to 120 °C [248 °F]** (not possible in connection with ATEX 95)

### Accessories, to be ordered separately:

- U2A knuckle eyes, above, U2A/.../ZGOW
- U2A, knuckle eyes, below U2A/.../ZGUW
- EEK Grounding cable

Modifications reserved.

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