

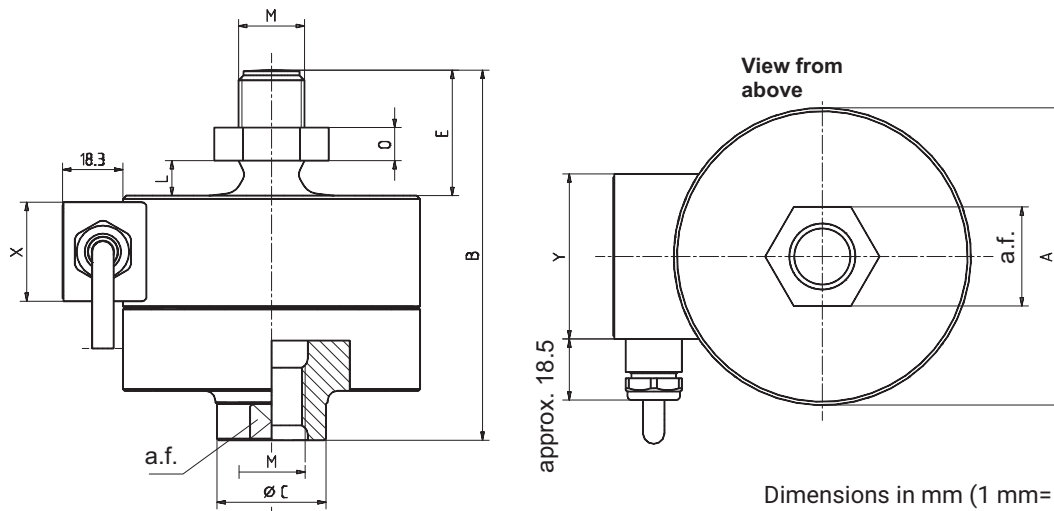
## U2A... Load cells

### 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
- Explosion proof version (optional)



### DIMENSIONS



Max. capacity [t]	A <sub>-0,2</sub>	B	C	E	L <sub>min</sub>	M	O	a.f.	X	Y
0.05 ... 1	50	72	21	24	5 <sup>1)</sup>	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

1) 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	$v_{min}$	% from $E_{max}$	-	-	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 <sup>1)</sup>					
In nominal temperature range	$TK_C$	%/10 K	<±0.05		<±0.05
In service temperature range		%/10 K	<±0.10		<±0.10
Temperature effect on zero balance					
In nominal temperature range	$TK_0$	%/10 K	<±0.05		<±0.04
In operating temperature range		%/10 K	<±0.10		<±0.10
Hysteresis error <sup>1)</sup>	$d_{hy}$		<±0.15		<±0.07
Non-linearity <sup>1)</sup>	$d_{lin}$	%	<±0.20	<±0.10	<±0.05
Creep over 30 min.	$d_{cr}$		<±0.06		<±0.05
Input resistance	$R_{LC}$		340 ... 550		
Output resistance	$R_0$	$\Omega$	356 ±0.2 (for cable lengths less than 12 m) 358 ±0.2 (for cable lengths equals 12 m) 359 ±0.2 (for cable length equals 20 m)		
Insulation resistance	$R_{iso}$	G $\Omega$	>5		
Reference excitation voltage	$U_{ref}$		5		
Nominal range of excitation voltage <sup>4)</sup>	$B_u$	V	0.5 ... 10	0.5 ... 12	
Max. permissible excitation voltage <sup>4)</sup>			12	18	
Nominal temperature range <sup>4)</sup>	$B_T$	°C [°F]	-10 ... +40 [14 ... 104]		
Operating temperature range <sup>4)</sup>	$B_{tu}$		-30 ... +85 (-30 ... +120) [-22 ... 185] [-22 ... 248]		
Storage temperature range	$B_{tl}$		-50 ... +85 [-58 ... 185]		
Safe load limit	$E_L$	% from $E_{max}$	130	150	
Breaking load	$E_d$		300		
Relative stat. lateral load limit	$E_{lq}$		25		
Permissible dynamic load (peak to peak according to DIN 50100)	$F_{srel}$		100	160	
Degree of protection (IP) to EN 60529 (IEC 529)			IP 67		
Material:	Measuring body Cable gland Cable sheath		Stainless steel <sup>3)</sup> Nickel plated brass, Silicone Thermoplast. elastomere		

1) 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

2) Optionally available with extended operating temperature range

3) According to EN 10088-1

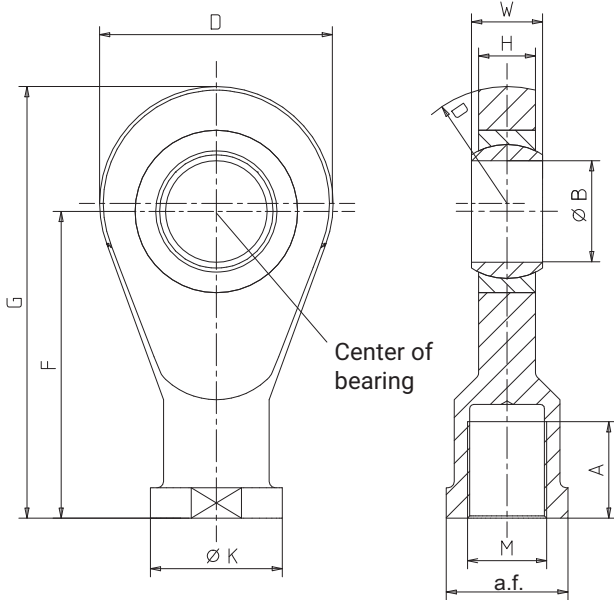
4) Not for explosion protection, see Safety instructions

## MECHANICAL VALUES

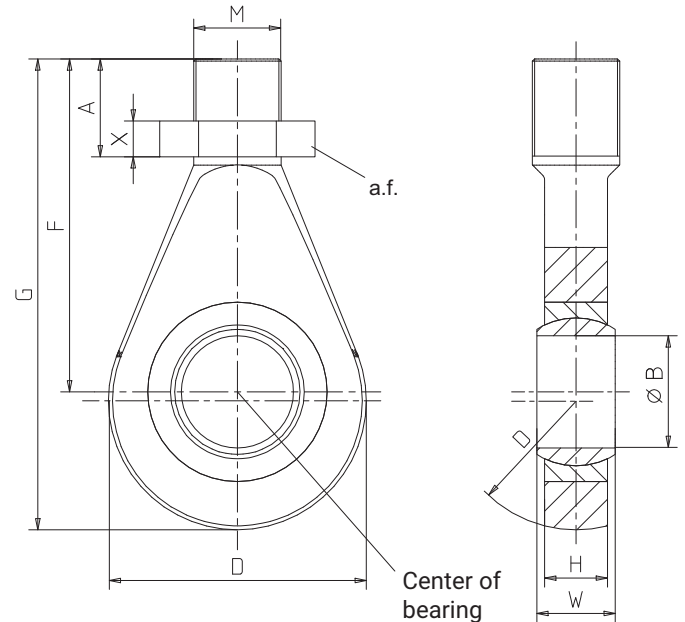
Max. capacity [t]	Deflection at max. capacity ( $s_{nom}$ ), approx. [mm]	Weight (G), approx. [kg]	Cable length [m]
0.05	< 0.1	0.8	3
0.1	< 0.1	0.8	3
0.2	< 0.1	0.8	3
0.5	< 0.1	0.8	3
1	< 0.1	0.8	3
2	< 0.07	2.9	6
5	< 0.07	4.3	6
10	< 0.09	10.7	12
20	< 0.09	15.9	12

## MOUNTING ACCESSORIES (IN MM; 1 MM = 0.03937 INCHES)

Knuckle eye ZGOW



Knuckle eye ZGUW



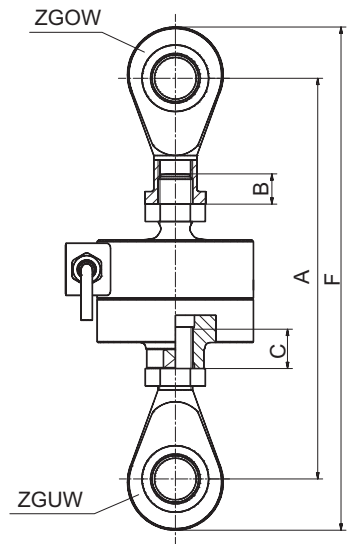
Max. capacity [t]	Knuckle eye ZGOW	Weight [kg]	A	$\varnothing B$	D	F	G	H	$\varnothing K$	M	a.f.	W
0.05 ... 1	U2A/1T/ZGOW	0.2	22	12 <sup>H7</sup>	32	50	66	12	22	M12	19	16
2	U2A/2T/ZGOW	0.5	33	20 <sup>H7</sup>	50	77	102	18	34	M20x1.5	32	25
5	U2A/5T/ZGOW	0.8	42	25 <sup>H7</sup>	60	94	124	22	42	M24x2	36	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. capacity [t]	Knuckle eye ZGUW	Weight [kg]	A	$\varnothing B$	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**

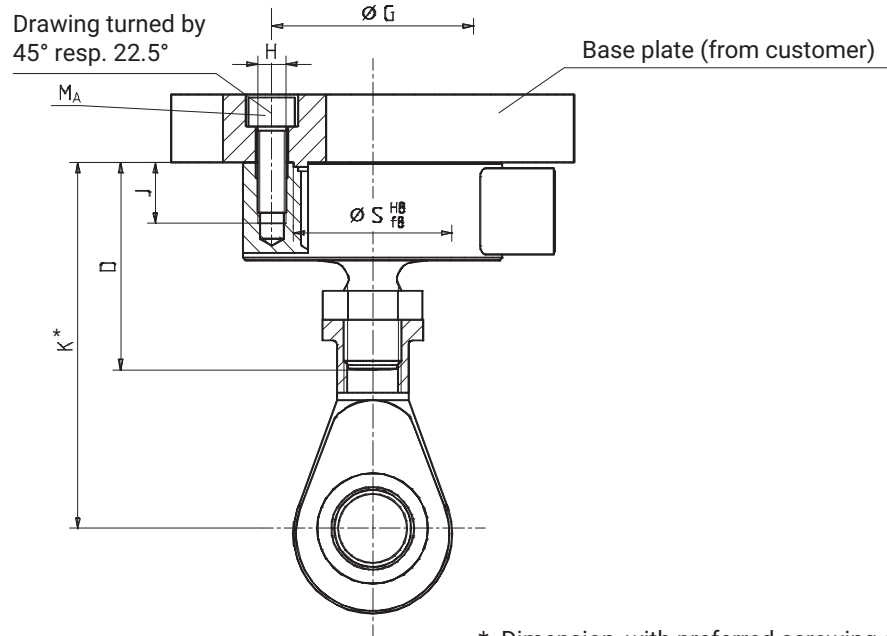
Max. capacity [t]	A <sub>min</sub>	A <sub>max</sub>	F <sub>min</sub>	F <sub>max</sub>	Min. depth for screwing		Tightening torque M <sub>A</sub> [N·m]
					B	C	
0.05 ... 0.5	139	156	171	188	9.6	9.6	60 <sup>1)</sup>
1	141	156	173	188	9.6	9.6	60
2	212	234	262	284	16	16	300
5	260	288	320	348	19.2	19.2	500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

<sup>1)</sup> 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

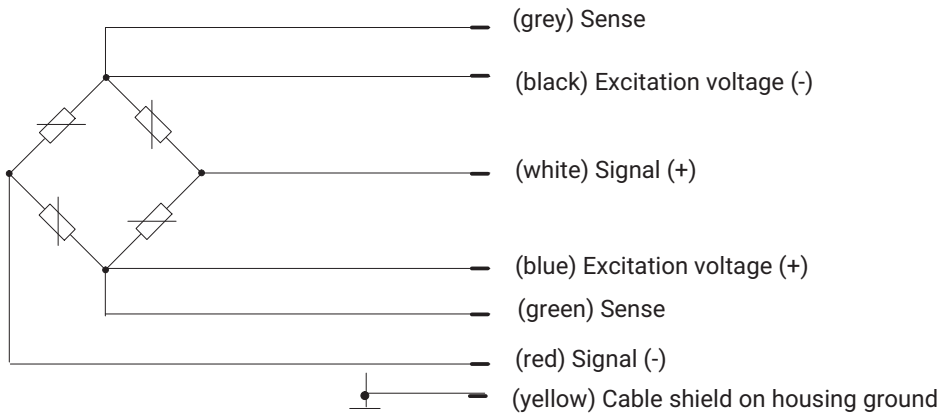


\* Dimension, with preferred screwing depth

Max. capacity [t]	D	ØG	H	J	K	ØS	M <sub>A</sub> <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



## PRODUCT NUMBERS

Type	U2A		
	0.2	0.1	D1
Accuracy class			
Maximum capacity	Ordering number		
50 kg	1-U2A/50KG	-	-
100 kg	-	1-U2A/100KG	-
200 kg	-	1-U2A/200KG	-
500 kg	-	-	1-U2AD1/500KG
1 t	-	-	1-U2AD1/1T
2 t	-	-	1-U2AD1/2T
5 t	-	-	1-U2AD1/5T
10 t	-	1-U2A/10T	-
20 t	-	1-U2A/20T	-

## ACCESSORIES

Maximum capacity	Ordering number	
	Upper knuckle eye	Lower knuckle eye
50 kg	1-U2A/1T/ZGOW	1-U2A/1T/ZGUW
100 kg		
200 kg		
500 kg		
1 t		
2 t	1-U2A/2T/ZGOW	1-U2A/2T/ZGUW
5 t	1-U2A/5T/ZGOW	1-U2A/5T/ZGUW
10 t	1-U2A/10T/ZGOW	1-U2A/10T/ZGUW
20 t	1-U2A/20T/ZGOW	1-U2A/20T/ZGUW

## ORDERING OPTIONS

Ordering number		
K-U2A_		
1	Code	Option 1: Mechanical design
	<b>S</b>	Standard
2	Code	Option 2: Accuracy class
	<b>S</b>	Standard
3	Code	Option 3: Maximum capacity
	<b>50</b>	50 kg
	<b>100</b>	100 kg
	<b>200</b>	200 kg
	<b>500</b>	500 kg
	<b>1</b>	1 t
	<b>2</b>	2 t
	<b>5</b>	5 t
	<b>10</b>	10 t
<b>20</b>	20 t	
4	Code	Option 4: Explosion protection
	<b>N</b>	No explosion protection
	<b>AI1/21</b>	ATEX+IECEX+FM Zone 1/21, intrinsically safe; ATEX/IECEX: II 2G Ex ia IIC T6/T4 Gb + II 2D Ex ia IIIC T125°C Db; FM(US/CA): Class I Zone 1 AEx/Ex ia IIC T4 Gb + Zone 21 AEx/Ex ia IIIC T125°C Db FM(US): Class I, II, III Division 1, Groups A, B, C, D, E, F, G T4 [only with option 6 = N]
	<b>AI2/21</b>	ATEX+IECEX Zone 2/21, not intrinsically safe; ATEX/IECEX: II 3G Ex ec IIC T6/T4 Gc + II 2D Ex tb IIIC T125°C Db [only with option 6=N]
5	Code	Option 5: Cable length
	<b>S3</b>	3 m (standard) [only with option 3 = 50 / 100 / 200 / 500 / 1]
	<b>S6</b>	6 m (standard) [only with option 3 = 2 / 5]
	<b>S12</b>	12 m (standard) [only with option 3 = 10 / 20]
	<b>6</b>	6 m [only with option 3 = 50 / 100 / 200 / 500 / 1]
	<b>12</b>	12 m [only with option 3 = 50 / 100 / 200 / 500 / 1 / 2 / 5]
<b>20</b>	20 m	
6	Code	Option 6: Operating temperature range
	<b>N</b>	Standard
	<b>120</b>	Operating temperature up to 120 °C [only with option 4 = N]

K-U2A\_ -  -  -  -  -  -  -

1      2      3                      4                      5                      6

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