



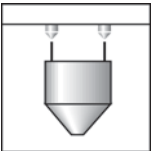
U2A...

Load cells

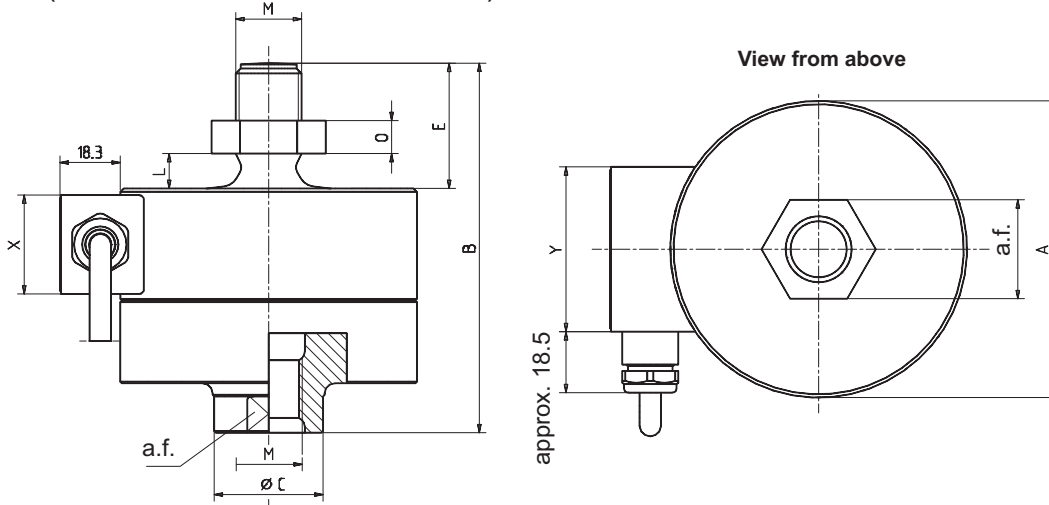


Special features

- 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 _{min} | 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) ¹⁾ | | | | |
| 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}) ¹⁾ | % | <±0.15 | | <±0.05 |
| Non-linearity (d_{lin}) ¹⁾ | % | <±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}) ²⁾ | °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 | | |

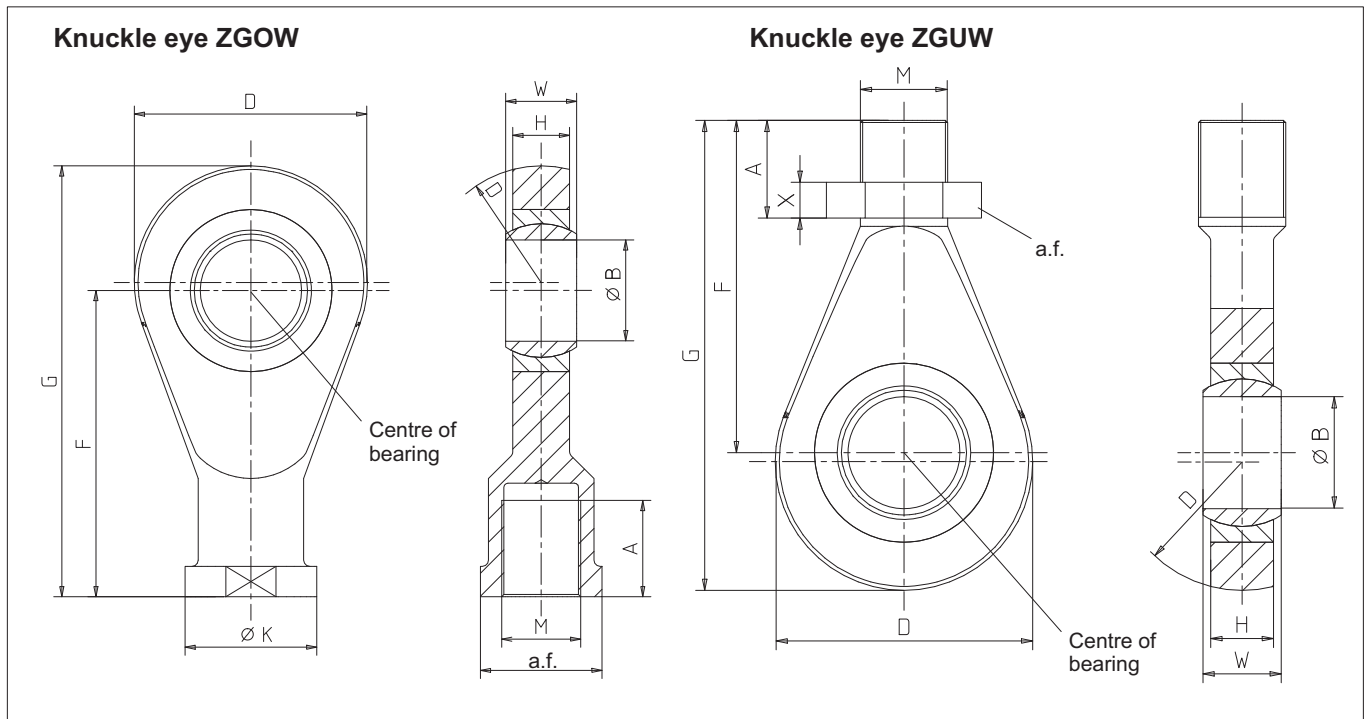
¹⁾ The data for Non-linearity, hysteresis error and temperature effect on sensitivity are typical values. The sum of these data meets the requirements according to OIML R60.

²⁾ Optionally available with extended operating temperature range.

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)



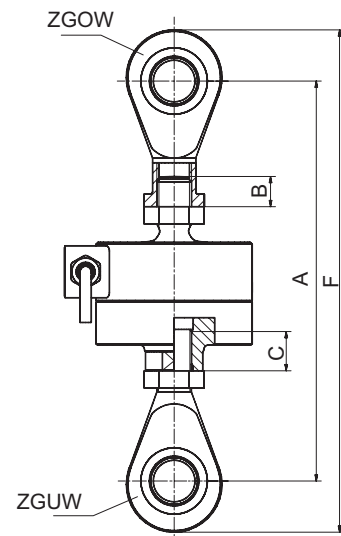
| Max. cap. [t] | Knuckle eye ZGOW | Weight [kg] | A | ØB | D | F | G | H | ØK | M | a.f. | W |
|---------------|------------------|-------------|----|---------------------------------|-----|-----|-------|----|----|---------|------|----|
| 0.05...1 | U2A/1T/ZGOW | 0.2 | 22 | 12 ^{H7} | 32 | 50 | 66 | 12 | 22 | M12 | 19 | 16 |
| 2 | U2A/2T/ZGOW | 0.5 | 33 | 20 ^{H7} | 50 | 77 | 102 | 18 | 34 | M20x1.5 | 32 | 25 |
| 5 | U2A/5T/ZGOW | 0.8 | 42 | 25 ^{H7} | 60 | 94 | 124 | 22 | 42 | M24x2 | 36 | 31 |
| 10 | U2A/10T/ZGOW | 3.2 | 50 | 50 ^{+0.002 -0.014} | 115 | 151 | 212,5 | 28 | 65 | M39x2 | 60 | 35 |
| 20 | U2A/20T/ZGOW | 4.8 | 60 | 60 ^{+0.003 -0.018} | 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 ^{H7} | 32 | 54 | 70 | 12 | M12 | 19 | 16 | 7 |
| 2 | U2A/2T/ZGUW | 0.2 | 47 | 20 ^{H7} | 50 | 78 | 103 | 18 | M20x1,5 | 32 | 25 | 9 |
| 5 | U2A/5T/ZGUW | 0.4 | 57 | 25 ^{H7} | 60 | 94 | 124 | 22 | M24x2 | 36 | 31 | 10 |
| 10 | U2A/10T/ZGUW | 1.1 | 65.5 | 50 ^{+0.002 -0.014} | 115 | 148.5 | 210 | 28 | M39x2 | 60 | 35 | 16 |
| 20 | U2A/20T/ZGUW | 3.2 | 80 | 60 ^{+0.003 -0.018} | 126 | 168 | 236 | 36 | M48x2 | 70 | 44 | 18 |

Load cell U2A with monted knuckle eyes ZGOW, ZGUW

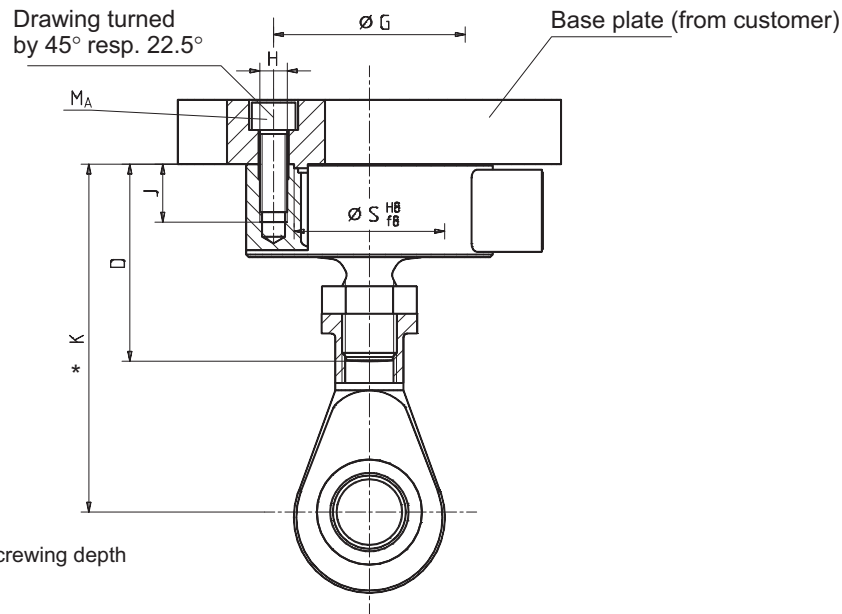
| Max. capacity [t] | A _{min} | A _{max} | F _{min} | F _{max} | Min. depth for screwing | | Tightening torque M _A [N·m] |
|-------------------|------------------|------------------|------------------|------------------|-------------------------|------|--|
| | | | | | B | C | |
| 0.05...0.5 | 139 | 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

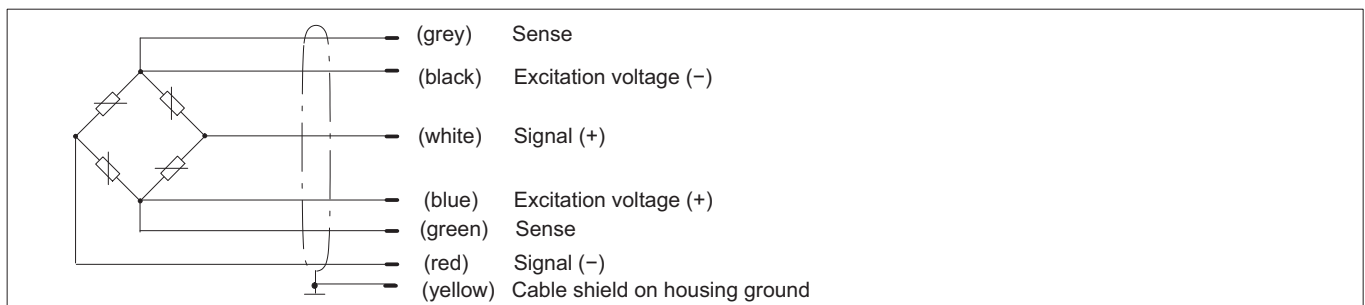


* Dimension, with preferred screwing depth

| Max. capacity [t] | D | ØG | H | J | K | ØS | M _A ¹⁾ [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 |

¹⁾ 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

Regional Distributor



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