



C16A...

Self-restoring
rockerpin load cell

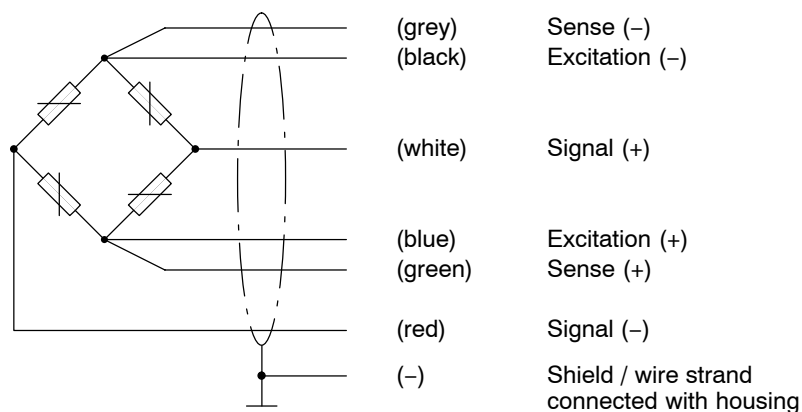


Special features

- Self-restoring function
- Maximum capacities: 15 t ... 100 t
- Simple to install
- Stainless steel materials, laser welded, IP68
- Legal for trade verification
 - up to 5000 d (OIML R60)
 - up to 10 000 d (NTEP class III LM)
- Optimized for parallel connection by corner pre-adjustment
- Meets EMC / ESD requirements according to EN 45 501
- Explosion proof versions according to ATEX 95 (optional)

Wiring code

Wiring code (6-wire circuit):



Specifications

Type		C16A D1						C16A C3					
Maximum capacity (E_{max})		15 t	20 t	30 t	40 t	60 t	100 t	15 t	20 t	30 t	40 t	60 t	100 t
Accuracy class accord. to OIML R60		D1 (0.0330 %)						C3 (0.0170 %)					
Max. numbers of load cell verification intervals (n_{LC})		1000 (10000 NTEP III LM) ³⁾						3000					
Min. load cell verification interval (v_{min})	% of E_{max}	0,0200 (0.0068 NTEP III LM) ³⁾						0.0100			0.0083	0.0167	
Min. scale verification interval (e_{min}) according to EN 45 501 [...# = max. Number of load cells]	kg	-	-	-	-	-	-	5 [10#]	5 [6#] 10 [10#]	10 [10#]	10 [6#] 20 [10#]	10 [4#] 20 [10#]	50 [8#]
Sensitivity (C_N)	mV/V	2											
Sensitivity tolerance ¹⁾	%	± 0.5 ¹⁾											
Temperature effect on sensitivity (TK_C) ²⁾	% of C_N	± 0.0250 ²⁾						± 0.0080 ²⁾					
Temperature effect on zero signal (TK_0)	/ 10 K	± 0.0285						± 0.0140			± 0.0116	± 0.0234	
Hysteresis error (d_{hy}) ²⁾		± 0.0330 ²⁾						± 0.0170 ²⁾					
Non-Linearity (d_{lin}) ²⁾	% of C_N	± 0.0300 ²⁾						± 0.0180 ²⁾					
Creep (d_{cr}), 30 min.		± 0.0330						± 0.0167					
Input resistance (R_{LC}) (black-blue)		700 ± 20											
Output resistance (R_0) ¹⁾ (red-white)	Ω	706 ± 3.5 ¹⁾											
Reference excitation voltage (U_{ref})	V	5											
Nominal range of excitation voltage (B_U)		0.5 ... 12											
Insulation resistance (R_{is})	G Ω	> 5											
Nominal range of ambient temperature (B_T)		-10 ... +40 [+14 ... +104]											
Service temperature range (B_{tu})	$^{\circ}C$ [$^{\circ}F$]	-30 ... +70 [-22 ... +158]											
Storage temperature range (B_{tl})		-50 ... +85 [-58 ... 185]											
Limit load (E_L)		150											
Breaking load (E_d)		> 350											
Permissible dynamic load (F_{srel}) (vibration amplitude according to DIN 50100)	% of E_{max}	70											
Maximum capacity (E_{max})		15 t	20 t	30 t	40 t	60 t	100 t	15 t	20 t	30 t	40 t	60 t	100 t
Deflection at E_{max} (s_{nom}), approx.	mm	0.55	0.65	0.75	0.85	1.22	1.57	0.55	0.65	0.75	0.85	1.22	1.57
Weight (G) with cable, approx.	kg	1.9	2.1	2.3	2.9	3.7	8	1.9	2.1	2.3	2.9	3.7	8
Protection class according to EN60529 (IEC529)		IP68 (test conditions 100 h at 1 m water column) IP69 K (water at high pressure, steam jet cleaning)											
Material: Measuring body + housing Cable fitting Sealing Cable-sheath		stainless steel stainless steel (E_{max} 100 t: nickel-plated brass) Viton [®] (E_{max} 100 t: silicone) thermoplastic elastomer											

¹⁾ Throughout corner pre-adjustment the Sensitivity and Output resistance are coordinated, so that the indicated value of the scale is within permissible limits when off-center load is applied.

²⁾ The data for Non-Linearity (d_{lin}), Hysteresis error (d_{hy}) and Temperature effect on sensitivity (TK_C) are typical values. The sum of these data meets the requirements for $p_{LC} = 0.7$ according to OIML R60 respectively NTEP.

³⁾ NTEP III LM only valid for maximum capacities of 20 t ... 100 t

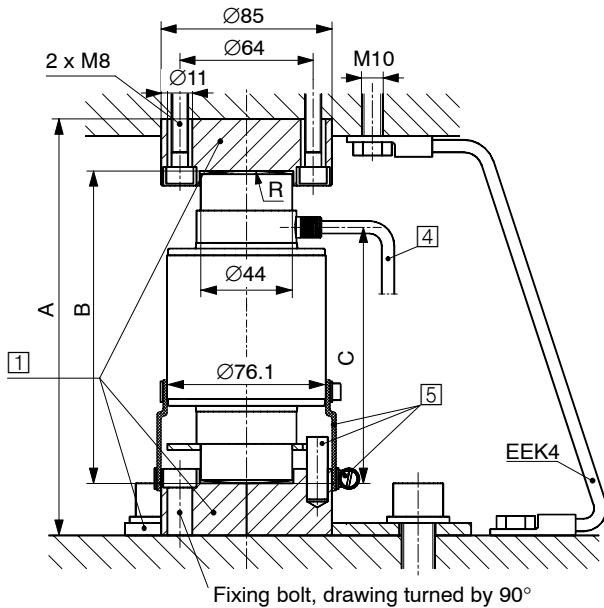
Available Options for C16A:

- **Explosion-proof versions according to ATEX:** II 2 G EEx ia IIC T4 resp. T6 (Zone 1) *)
II 3 G EEx nA II T6 (Zone 2)
II 2 D IP68 T80 $^{\circ}C$ (Zone 21) *)
II 3 D IP68 T80 $^{\circ}C$ (Zone 22 for non-conductive dust)
II 2 G EEx d IIC T6 (Zone 1) *); see separate data sheet
*) with EC-Type Examination Certificate
- **Overvoltage protection** (not possible in connection with Explosion-proof versions)
- $v_{min} = 0.0050$ % ($Y=20000$)
- **Accuracy classes C4 and C5 (OIML)** on request
- **Cable length 20 m** ($E_{max} = 15$ t ... 30 t) / • **Cable length 40 m** ($E_{max} = 15$ t ... 100 t)
- **20 m metal braided cable** ($E_{max} = 15$ t ... 60 t)

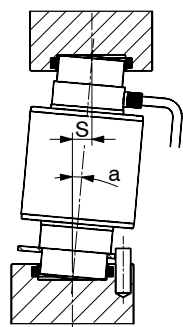
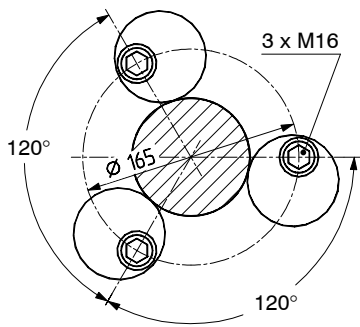
Dimensions and Accessories for maximum capacities of 15 t ... 60 t (in mm; 1 mm = 0.03937 inches)

Mounting variation 1:

C16.../15 t + C16/ZOU44A/15 t (max. load per load cell = 15 t)
 C16.../≤60 t + C16/ZOU44A (max. load per load cell = 40 t)

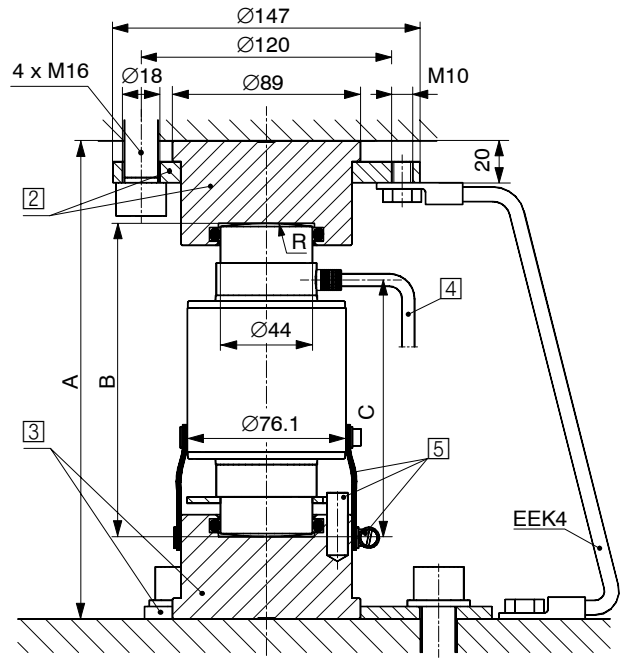


Top view



Mounting variation 2:

C16.../≤60 t + EPO3/50 t + C16/EPU44A (not for C16.../15 t)



- 1 C16/ZOU44A/15 t; C16/ZOU44A
- 2 EPO3/50 t
- 3 C16/EPU44A
- 4 Cable length (standard):
15 t, 20 t + 30 t = 12 m;
40 t + 60 t = 20 m
- 5 Dowel pin Ø10 x 30 (rotation stop),
flexible tube and tube clip enclosed
in the packing of the load cell

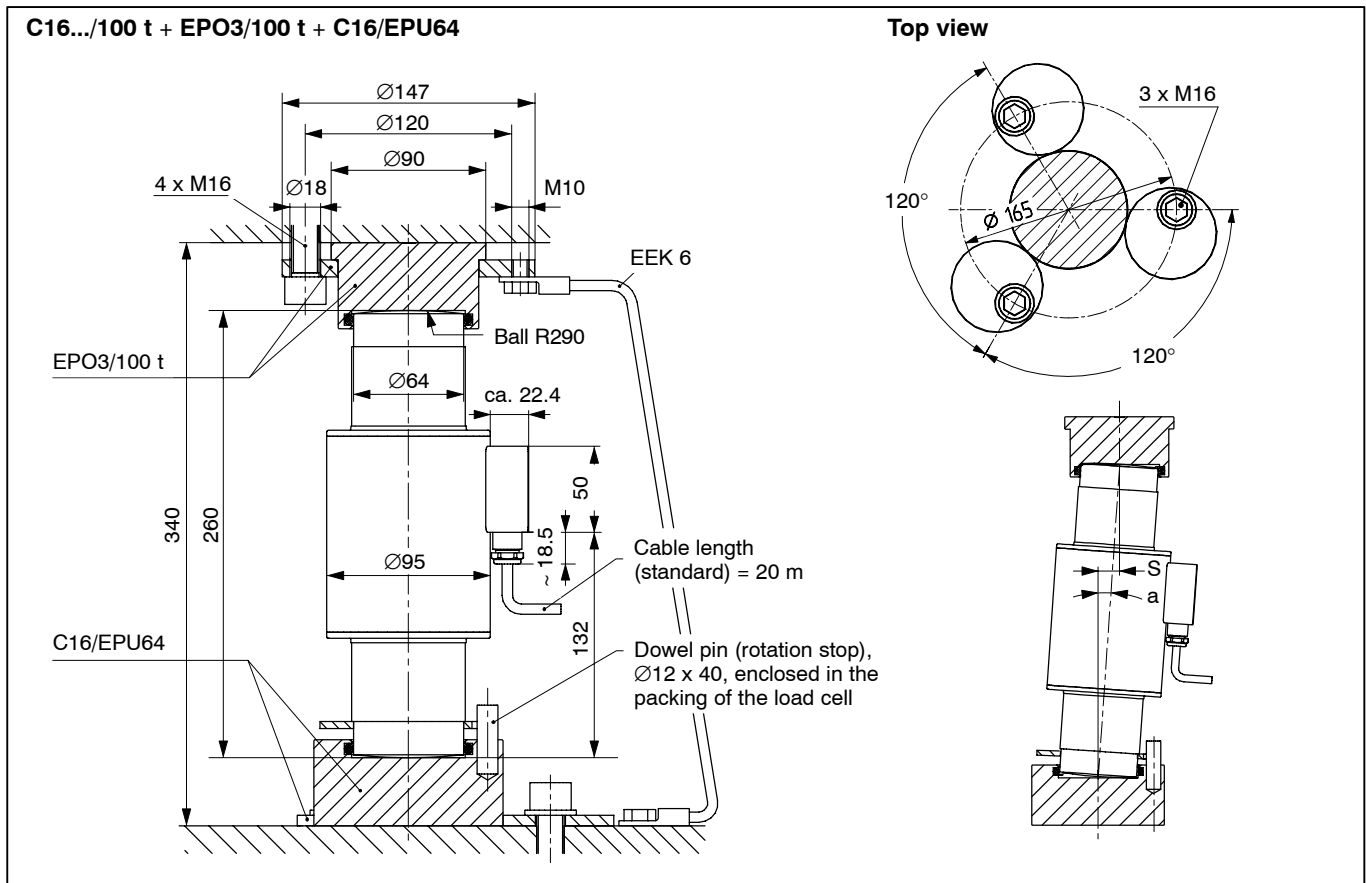
Mount. variation 1	E _{max} C16...	Thrust pieces above + below (1 set = 2 pcs.)		A	B	C	R Ball	a _{max} ²⁾	S _{max} ³⁾	F _R ⁴⁾ (% of applied load)	
										at S _{max}	at S = 1 mm
	15 t	C16/ZOU44A/15t ^{1a)}		160	130	112	110	5°	11	6.0	0.55
	15 t			180	130	112	110	5°	11	6.0	0.55
	20 t			200	150	123	130	5°	13	6.4	0.49
	30 t	C16/ZOU44A ^{1b)}		200	150	123	160	5°	13	9.9	0.76
	40 t			200	150	123	180	5°	13	12.2	0.94
	60 t			260	210	157	220	3°	11	5.7	0.52

Mount. variation 2	E _{max} C16...	Thrust pieces		A	B	C	R Ball	a _{max} ²⁾	S _{max} ³⁾	F _R ⁴⁾ (% of applied load)	
		above	below							at S _{max}	at S = 1 mm
	20 t			229	150	123	130	5°	13	6.4	0.49
	30 t	EPO3/50 t	C16/EPU44A	229	150	123	160	5°	13	9.9	0.76
	40 t			229	150	123	180	5°	13	12.2	0.94
	60 t			289	210	157	220	3°	11	5.7	0.52

1a) Maximum load: 15 t
 1b) Maximum load: 40 t
 2) Max. permissible skewing

3) Max. permissible lateral displacement of load introduction
 4) Restoring force

Dimensions and Accessories for maximum capacity 100 t (in mm; 1 mm = 0.03937 inches)



a_{\max} (max. permissible skewing)	S_{\max} (max. permissible lateral displacement of load introduction)	F_R (Restoring force, % of applied load)	
		at S_{\max}	at $S = 1 \text{ mm}$
4°	18	8.6	0.48

Furthermore deliverable: Maximum capacity 200 t (see separate data sheet)

Accessories (to be ordered separately):

Thrust pieces

Maximum capacity 15 t – only Mounting Variation 1:

- **C16/ZOU44A/15t** Thrust pieces (stainless steel) for above and below (1 Set = 2 pcs.), for use with C16.../15 t up to a maximum load per load cell of 15 tons, incl. 3 excentric washers

Maximum capacities 15 t ... 60 t – Mounting Variation 1:

- **C16/ZOU44A** Thrust pieces (stainless steel) for above and below (1 Set = 2 pcs.), for use with C16.../≤60 t up to a maximum load per load cell of 40 tons, incl. 3 excentric washers

Maximum capacities 20 t ... 60 t – Mounting Variation 2:

- **EPO3/50t** Thrust piece for above, incl. spanner
- **C16/EPU44A** Thrust piece for below, incl. 3 excentric washers

Maximum capacities 100 t:

- **EPO3/100t** Thrust piece for above, incl. spanner
- **C16/EPU64** Thrust piece for below, incl. 3 excentric washers

Modifications reserved.

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Hottinger Baldwin Messtechnik GmbH

Im Tiefen See 45, D-64293 Darmstadt, Germany

Tel.: +49 6151 803-0; Fax: +49 6151 8039100

E-mail: support@hbm.com www.hbm.com



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