

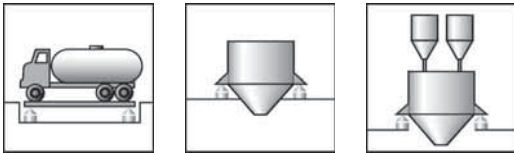


C16A...

Self-restoring
rockerpin load cell

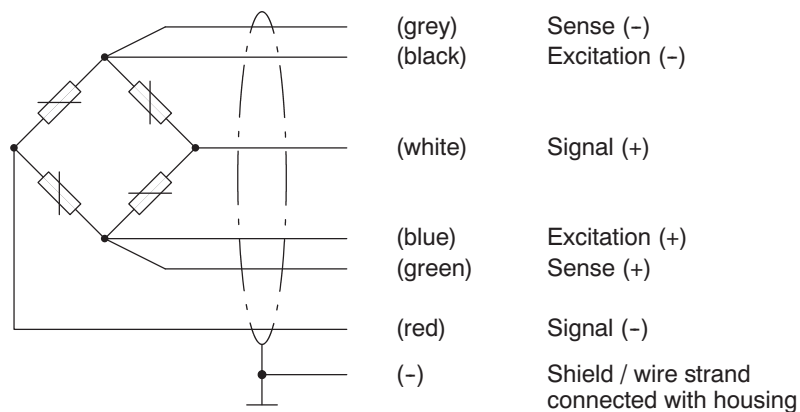
Special features

- Self-restoring function
- Maximum capacities: 20 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})		20 t	30 t	40 t	60 t	100 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)					3000				
Min. load cell verification interval (v_{min})	% of E_{max}	0,0200 (0.0068 NTEP III LM)					0.0100	0.0083	0.0167 [Option: 0.0050]		
Min. scale verification interval (e_{min}) according to EN 45 501 [...# = max. Number of load cells]	kg	-	-	-	-	-	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)	Ω	700 ± 20									
Output resistance (R_0) ¹⁾ (red-white)		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_{ti})		-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})		20 t	30 t	40 t	60 t	100 t					
Deflection at E_{max} (s_{nom}), approx.	mm	0.65	0.75	0.85	1.22	1.57					
Weight (G) with cable, approx.	kg	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.

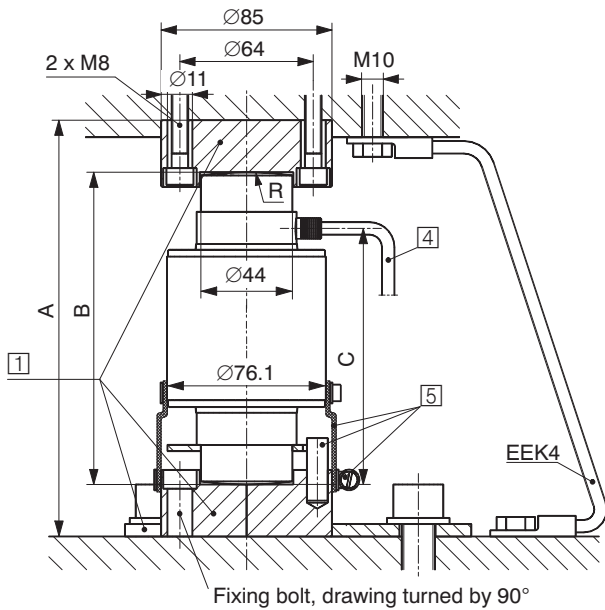
Available Options for C16A:

- **Explosion-proof versions according to ATEX:**
 - II 2 G Ex ia IIC T4 resp. T6 (Zone 1) *)
 - II 2 D Ex tD A21 IP68 T80 $^{\circ}C$ (Zone 21) *)
 - *) with EC-Type Examination Certificate
 - II 3 G Ex nA II T6 (Zone 2)
 - II 3 D Ex tD A22 IP68 T80 $^{\circ}C$ (Zone 22 for non-conductive dust)
 - II 2 G Ex 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** ($E_{max} = 20$ t + 30 t) / • **Cable length 40 m** ($E_{max} = 20$ t ... 100 t)
- **20 m metal braided cable** ($E_{max} = 20$ t ... 60 t)

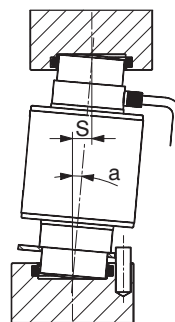
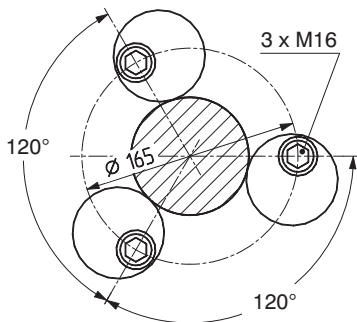
Dimensions and Accessories for maximum capacities of 20 t ... 60 t (in mm; 1 mm = 0.03937 inches)

Mounting variation 1:

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

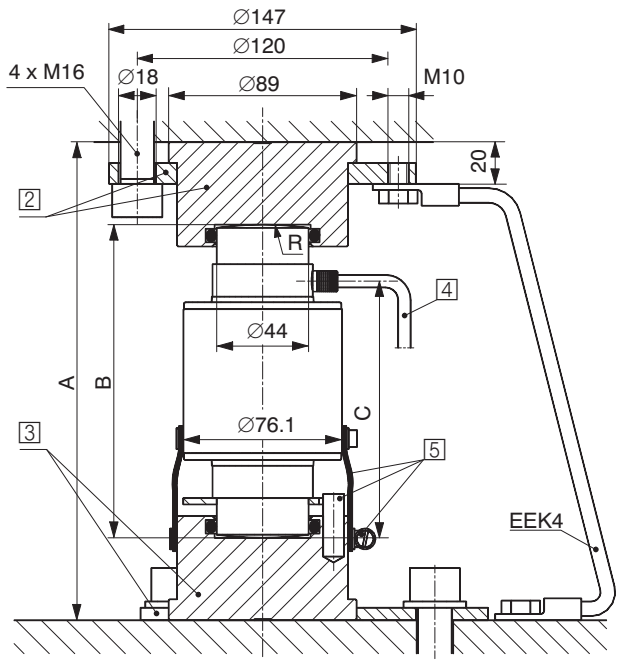


Top view



Mounting variation 2:

C16.../≤60 t + EPO3/50 t + C16/EPU44A



- 1 C16/ZOU44A
- 2 EPO3/50 t
- 3 C16/EPU44A
- 4 Cable length (standard):
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

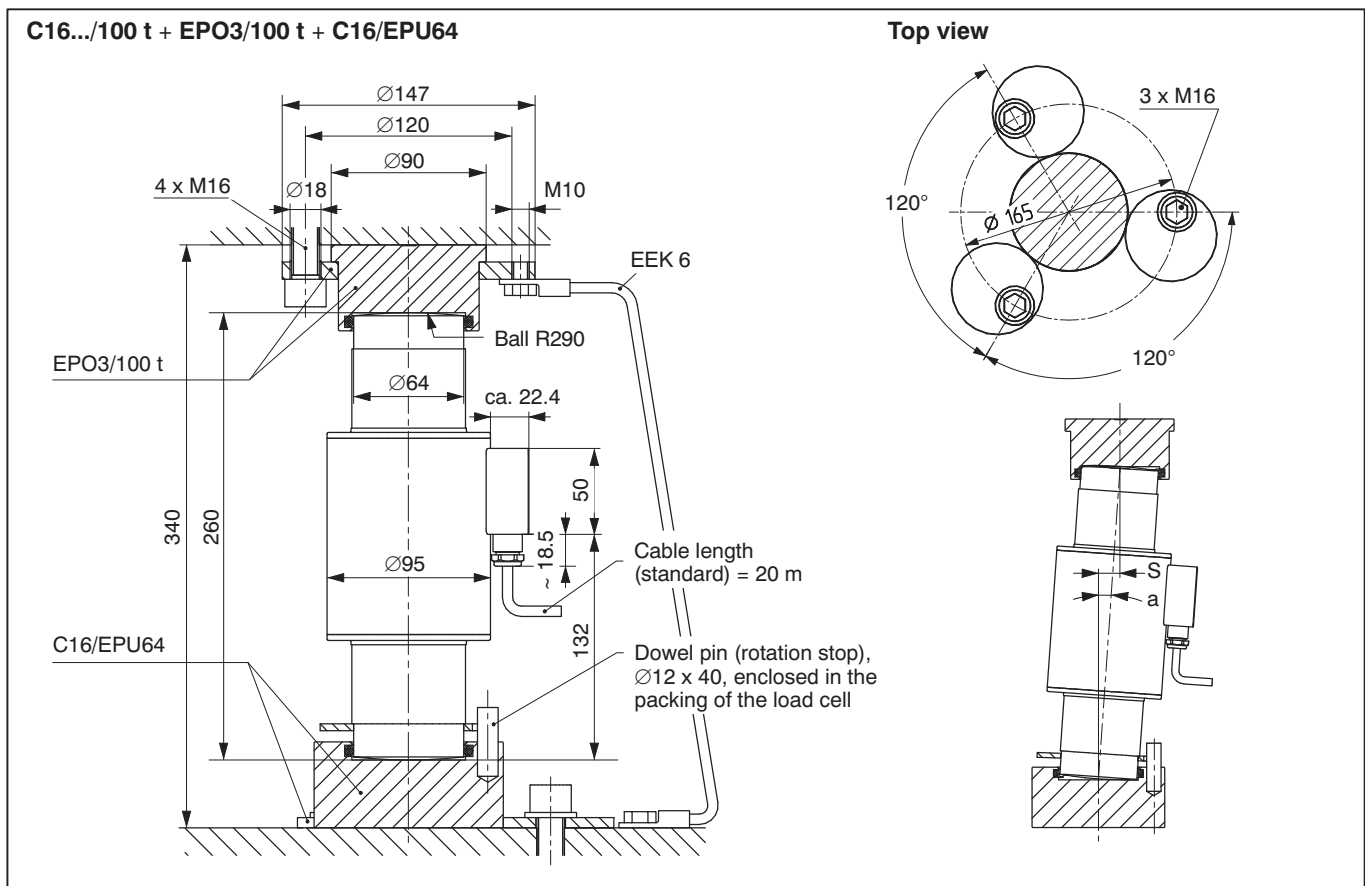
Mount. variation 1	E _{max} C16...	Thrust pieces above + below (1 set = 2 pcs.)		A	B	C	R Ball	a _{max} 2)	S _{max} 3)	F _R 4) (% of applied load)		
										at S _{max}	at S = 1 mm	
	20 t	C16/ZOU44A 1)			200	150	123	130	5°	13	6.4	0.49
	30 t		200	150	123	160	5°	13	9.9	0.76		
	40 t		200	150	123	180	5°	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	EPO3/50 t	C16/EPU44A		229	150	123	130	5°	13	6.4	0.49
	30 t			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		

1) 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 capacities 20 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

Grounding cable (copper), cross section: 16 mm²

- **EEK4** for Maximum capacities 20 t ... 60 t, Length 400 mm, Order no.: 1-EEK4
- **EEK6** for Maximum capacities 100 t + 200 t, Length 600 mm, Order no.: 1-EEK6



Ordering codes:

C16A Load cells

Type	C16A(D1)		C16AC3	
Accuracy	D1 (OIML)		C3 (OIML)	
Note	-		-	
Capacity	Order no.		Order no.	
20t	1-C16A2D1/20T-1		1-C16A2C3/20T-1	
30t	1-C16A2D1/30T-1		1-C16A2C3/30T-1	
40t	1-C16A2D1/40T-1		1-C16A2C3/40T-1	
60t	1-C16A2D1/60T		1-C16A2C3/60T	
100t	1-C16AD1/100T		1-C16AC3/100T	
200t *)	1-C16A/200T	*)	-	

*) Accuracy: 0.1%

C16A Load cells, optional versions

Order no.	
K-C16A2	
Code	Option 1: Mechanical version
S	Standard
Code	Option 2: Accuracy
0.1	0.1% [only with Option 3 = 200]
D1	D1 (OIML) [only with Option 3 = 20 / 30 / 40 / 60 / 100]
C3	C3 (OIML) [only with Option 3 = 20 / 30 / 40 / 60 / 100]
C4	C4 (OIML) [only with Option 3 = 30 / 40 / 60]
C5	C5 (OIML) [only with Option 3 = 30 / 40 / 60] (on request)
Code	Option 3: Capacity
20	20t [only with Option 2 = D1 / C3]
30	30t [only with Option 2 = D1 / C3 / C4 / (C5 on request)]
40	40t [only with Option 2 = D1 / C3 / C4 / (C5 on request)]
60	60t [only with Option 2 = D1 / C3 / C4 / (C5 on request)]
100	100t [only with Option 2 = D1 / C3]
200	200t [only with Option 2 = 0.1]
Code	Option 4: Ex protection (accord. to ATEX 95)
N	non ATEX
1	ATEX Zone 1 + 21 and FM  [only with Option 6 = N]
2	ATEX Zone 2 + 22 (non-conductive dust) [only with Option 6 = N] 
Code	Option 5: Cable length
S12	12m (standard) [only with Option 3 = 20 / 30]
S20	20m (standard) [only with Option 3 = 40 / 60 / 100 / 200]
20	20m [only with Option 3 = 20 / 30]
40	40m
20R	20m (Metal braiding) [only with Option 3 = 20 / 30 / 40 / 60]
Code	Option 6: Lightning protection
N	without
L	with Lightning protection [only with Option 4 = N]
Code	Option 7: Miscellaneous
N	without
Y	Y=20000 [only with Option 2 = C3]
K-C16A2 - S - <input type="checkbox"/> - <input type="checkbox"/> - <input type="checkbox"/> - <input type="checkbox"/> - <input type="checkbox"/> - <input type="checkbox"/> - <input type="checkbox"/>	

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