

C16A - 20...100t

Célula de carga Rocker Column



Libracom
Inteligência em Processos Industriais

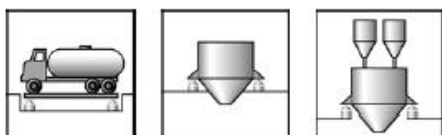


C16A...

Self-restoring
rockerpin load cell

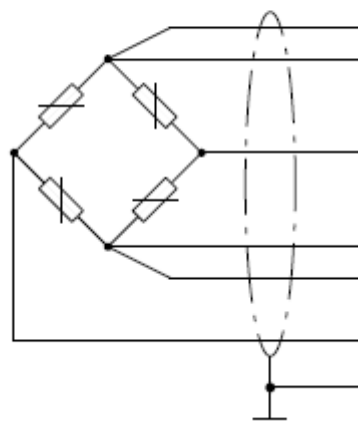
Special features

- 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):



- | | |
|---------|---|
| (grey) | Sense (-) |
| (black) | Excitation (-) |
| (white) | Signal (+) |
| (blue) | Excitation (+) |
| (green) | Sense (+) |
| (red) | Signal (-) |
| (-) | Shield / wire strand connected with housing |

Specifications

Type	C16A D1					C16A C3					
	20 t	30 t	40 t	60 t	100 t	20 t	30 t	40 t	60 t	100 t	
Maximum capacity (E_{max})											
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	
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⁾		± 0.0300 ²⁾					± 0.0180 ²⁾				
Creep (d_{cr}), 30 min.	% of C_n	± 0.0330					± 0.0167				
Min. dead load output return (DR), 30 min.		± 0.0330 (± 0.0150 NTEP III LM)					± 0.0167				
Input resistance (R_{LC}) (black-blue)	Ω	700 ± 20									
Output resistance (R_O) 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)	$^{\circ}C$ [$^{\circ}F$]	-10 ... +40 [+14 ... +104]									
Service temperature range (B_{TU})		-30 ... +70 [-22 ... +158]									
Storage temperature range (B_g)		-50 ... +85 [-58 ... 185]									
Limit load (E_L)		150									
Breaking load (E_d)		> 350									
Permissible dynamic load (F_{arel}) (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									

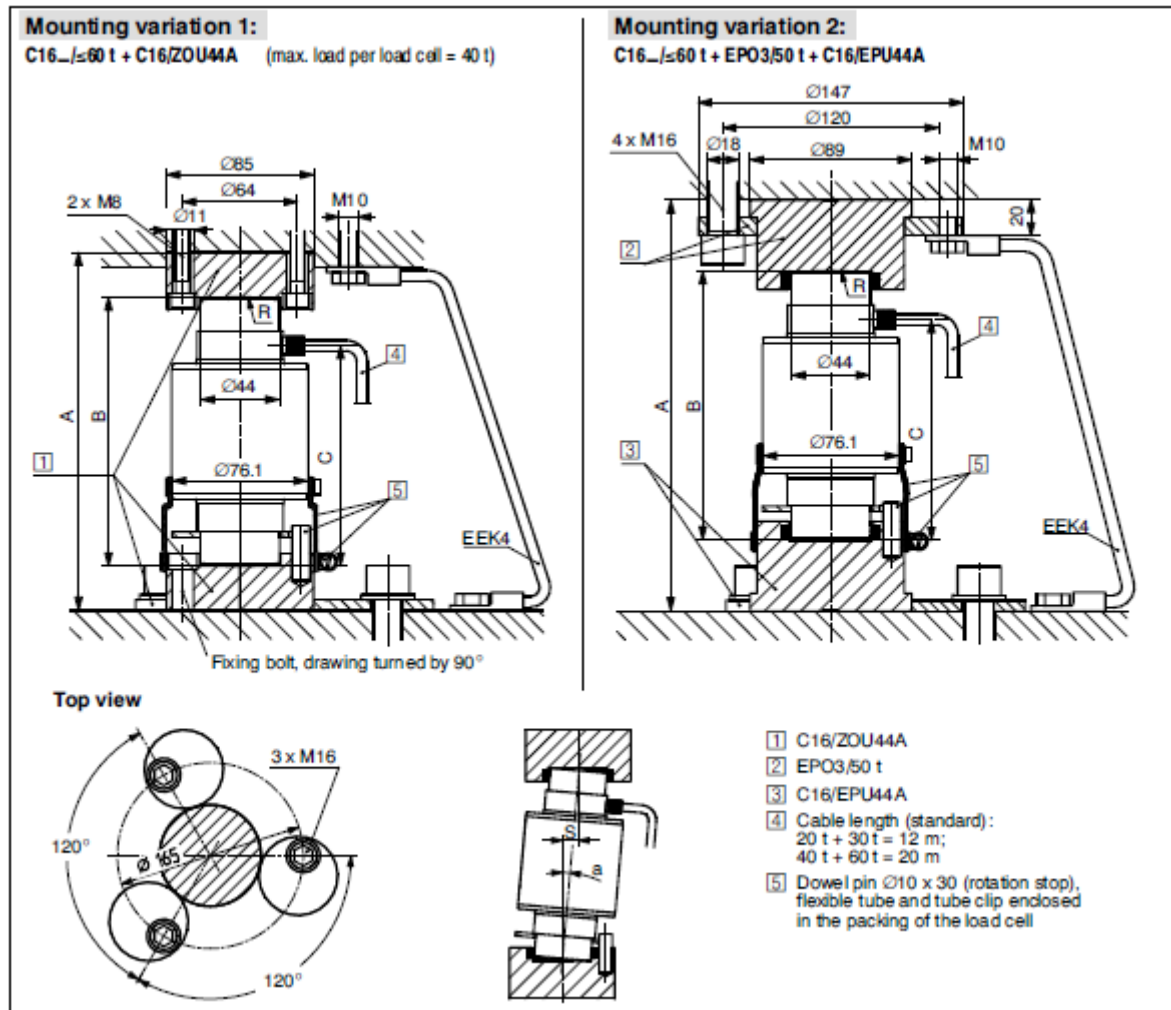
¹⁾ Throughout corner pre-adjustment the Sensitivity and Output resistance are coordinated, so that the indicated value of the scale is within permissible limits when off-center load is applied.

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)



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
Mount. variation 1	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
Mount. variation 2	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

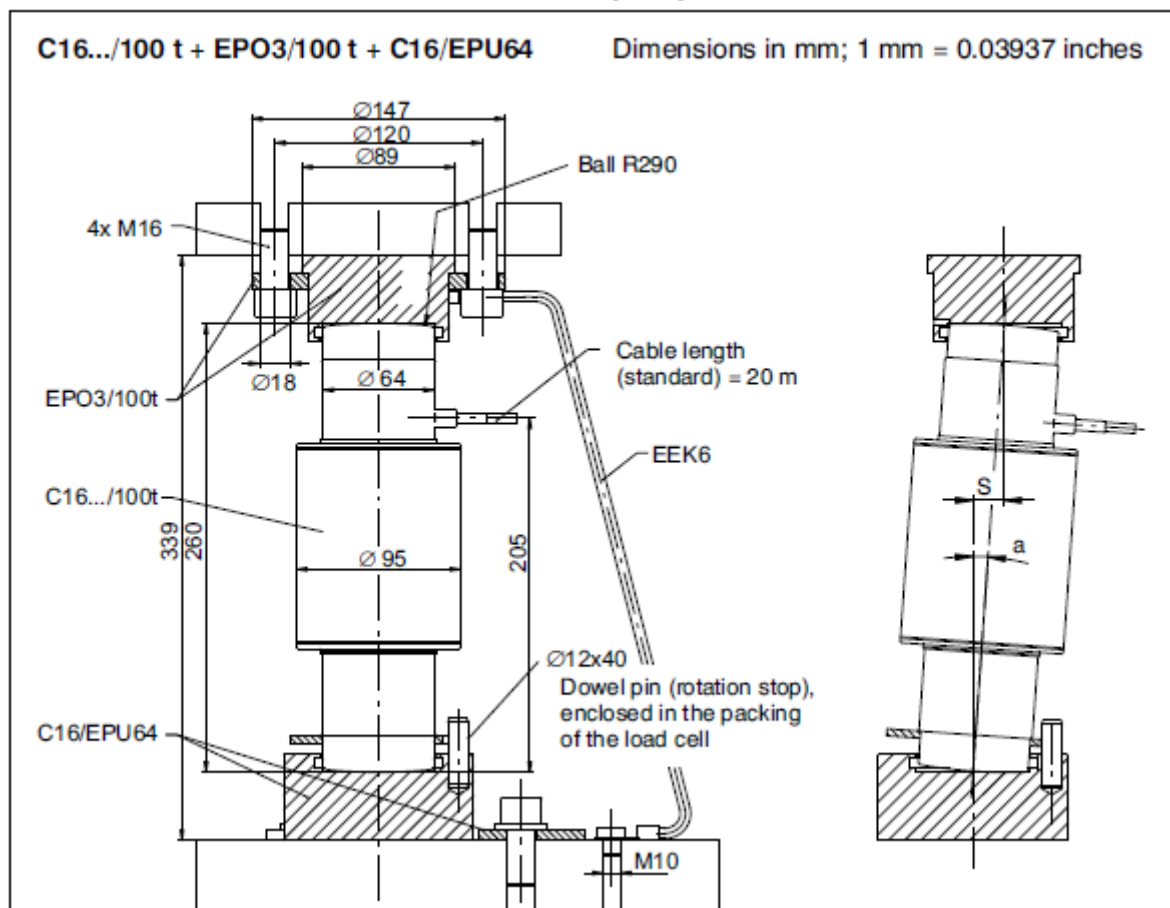
3) Max. permissible lateral displacement of load introduction

4) Restoring force

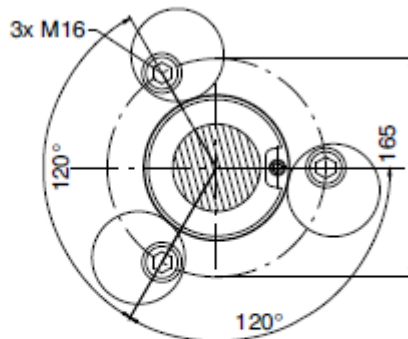
Dimensions and Accessories for maximum capacity 100 t

C16.../100 t + EPO3/100 t + C16/EPU64

Dimensions in mm; 1 mm = 0.03937 inches



Top view



θ_{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) / III LM (NTEP)		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-C16A2D1/100T		1-C16A2C3/100T
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 - [] - [] - [] - [] - [] - []	

