

C16i...

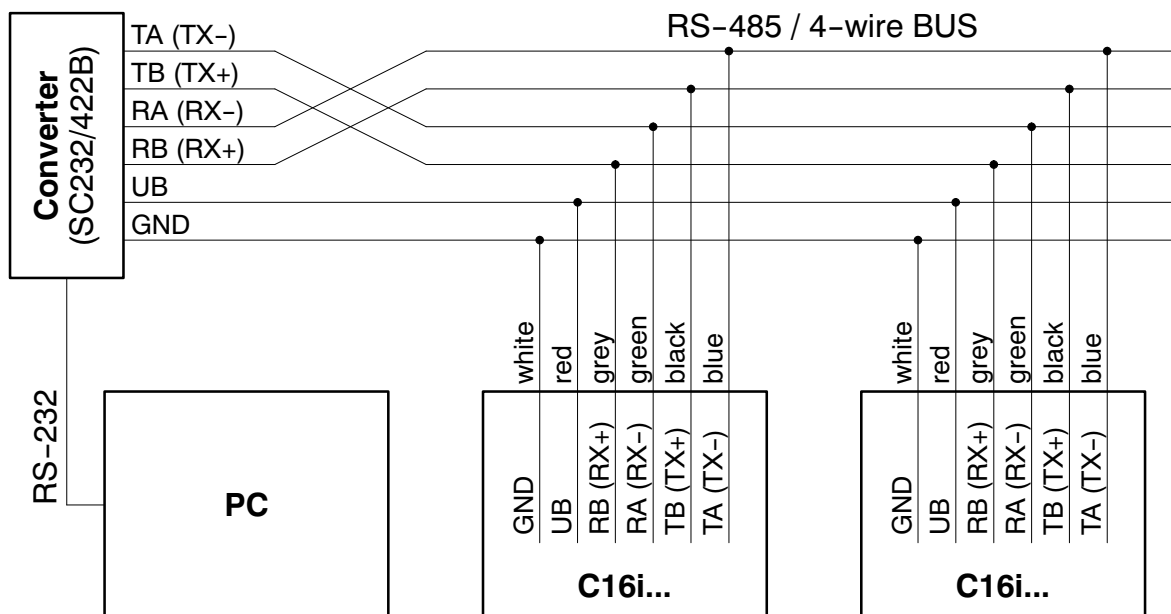
Digital Load Cells



Special features

- Digital output signal (RS-485 / 4-wire)
- Nominal (rated) loads: 20 t ... 60 t
- Self restoring rocker pin
- Simple to install
- Stainless steel material, laser welded, IP68
- Legal for trade verification according to OIML R60 up to 3000 d
- Legal for trade verification according to NTEP III LM up to 10 000 d
- Meets EMC / ESD requirements according to EN 45 501
- Inbuild overvoltage protection

Wiring code



Specifications

Type		C16i D1				C16i C3			
Nominal (rated) load (E _{max})		20 t	30 t	40 t	60 t	20 t	30 t	40 t	60 t
Accuracy class according to OIML R60 Max. numbers of LC verification intervals (n _{LC})		D1 (0.0330 %) 1000				C3 (0.0180 %) 3000 (10 000 NTEP III LM)			
Min. load cell verification interval (v _{min})	% of E _{max}	0.0200				0.0100 (0.006 NTEP III LM)		0.0083 (0.006 NTEP III LM)	
Min. scale verification interval (e _{min}) according to EN 45 501 [... LC = max. Number of load cells]	kg	-	-	-	-	5 [6 LC] 10 [10 LC]	10 [10 LC] 20 [10 LC]	10 [6 LC] 20 [10 LC]	10 [4 LC] 20 [10 LC]
Sensitivity (C _n)	digit	1 000 000							
Sensitivity tolerance	%	±0.03							
Temperature effect on sensitivity (TK _C) ¹⁾	% of C _n	±0.0250 ¹⁾				±0.0080 ¹⁾			
Temperature effect on zero signal (TK ₀)	/ 10 K	±0.0285				±0.0140		±0.0116	
Hysteresis error (d _{hy}) ¹⁾	% of C _n	±0.0330 ¹⁾				±0.0170 ¹⁾			
Non-Linearity (d _{lin}) ¹⁾		±0.0300 ¹⁾				±0.0180 ¹⁾			
Creep (d _{cr}), 30 min.		±0.0330				±0.0167			
Min. dead load output return (DR), 30 min.		±0.0330				±0.0167 (±0.0150 NTEP III LM)			
Reference excitation voltage(U _{ref})	V (DC)	12							
Nominal range of excitation voltage (B _U)		8.5 ... 15 ²⁾							
Current consumption	mA	50 ²⁾							
Resolution	Bit	20 (at 1 Hz)							
Measuring rate	1 / sec	200 100 50 25 12 6 3 2 1							
Filter mode 0	Hz	8 ... 0.05 (Low pass filter)							
Filter mode 1		8 ... 3 (Low pass filter)							
Asynchrone Interface		RS-485 / 4-wire (Cable lenght up to 500 m)							
Baudrate	Baud	1200 ... 115200							
Number of bus adresses		max. 32							
Nominal temperature range (B _T)	°C [°F]	-10 ... +40 [14...104]							
Service temperature range (B _{tu})		-20 ... +70 [-4...158]							
Storage temperature range (B _{tl})		-50 ... +85 [-58...185]							
Limit load (E _L)	% of E _{max}	150							
Breaking load (E _d)		> 350							
Permissible dynamic load (F _{srel}) (vibration amplitude acc. to DIN 50100)		70							
Nominal (rated) load (E _{max})		20 t	30 t	40 t	60 t	20 t	30 t	40 t	60 t
Deflection at E _{max} (s _{nom}), approx.	mm	0.65	0.75	0.85	1.22	0.65	0.75	0.85	1.22
Weight (G) with cable, approx.	kg	2.2	2.4	3.0	3.8	2.2	2.4	3.0	3.8
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: Meas. body + housing Cable fitting Sealing Cable-sheath		stainless steel stainless steel Viton thermoplastical elastomer							

¹⁾ 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 $p_{LC} = 0.8$ according to OIML R60.

²⁾ Please refer to the power supply table in the Installation instructions!

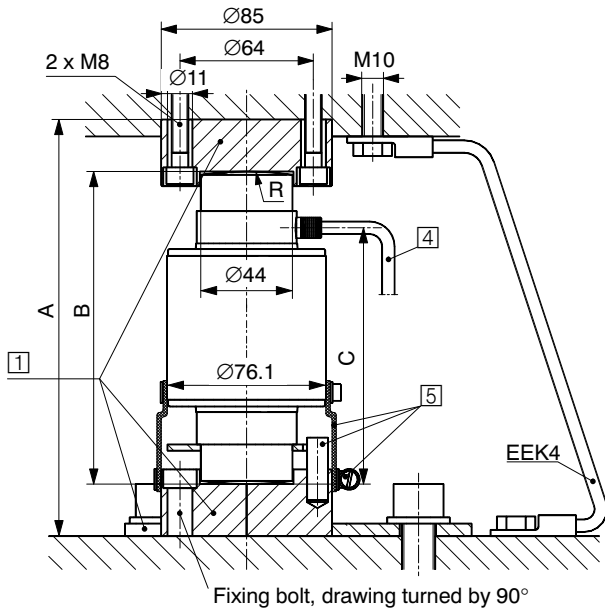
Options for C16i...

- Cable length 20 m ($E_{\max} = 20 \text{ t} + 30 \text{ t}$)
- Cable length 40 m ($E_{\max} = 20 \text{ t} \dots 60 \text{ t}$)
- Metal braided cable, 20 m long ($E_{\max} = 20 \text{ t} \dots 60 \text{ t}$)

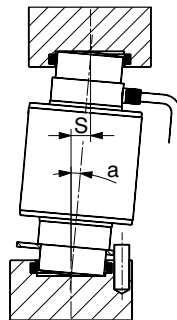
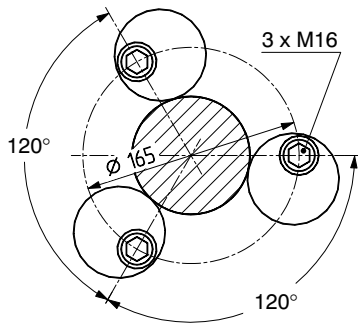
Dimensions and Accessories (in mm; 1 mm = 0.03937 inches)

Mounting variation 1:

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

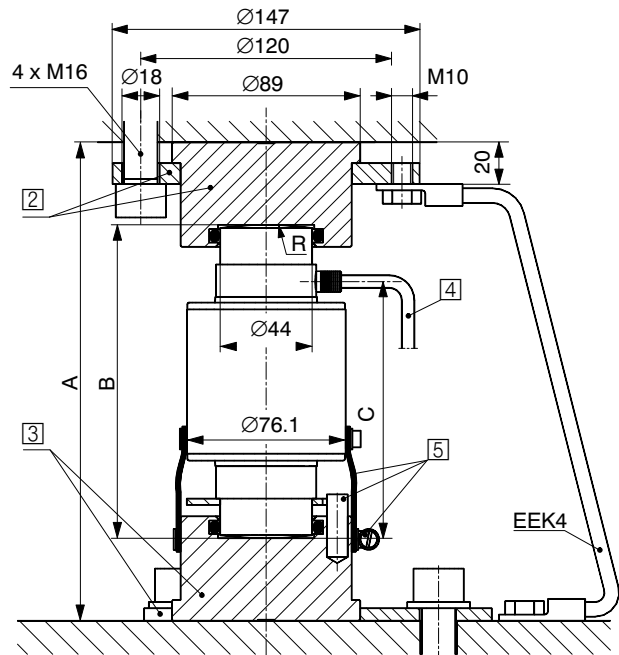


Top view



Mounting variation 2:

C16... + 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 $S = 1 \text{ mm}$
	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
Mount. variation 2	60 t			260	210	157	220	3°	11	5.7	0.52
	E_{max} C16...	Thrust pieces above below		A	B	C	R Ball	$a_{max}^{2)}$	$S_{max}^{3)}$	$F_R^{4)}$ (% of applied load)	
										at S_{max}	at $S = 1 \text{ mm}$
	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) Max. load: 40 t

2) Max. permissible skewing

3) Max. permissible lateral displacement of load introduction

4) Restoring force

Accessories (to be ordered separately)

Thrust pieces

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

Mounting Variation 2:

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

Serial-Converter

- **Interface converter set SC232/422B** (see separate data sheet)



- Conversion of RS-232 in 4-wire-RS-422/485 or in 2-wire-RS-485 (adjustable)
- Galvanic separation
- High EMC-security (metallic housing)
- Power supply range 8 ... 30 V DC
- Incl. plug-in power supply unit ¹⁾ and PC-connection cable

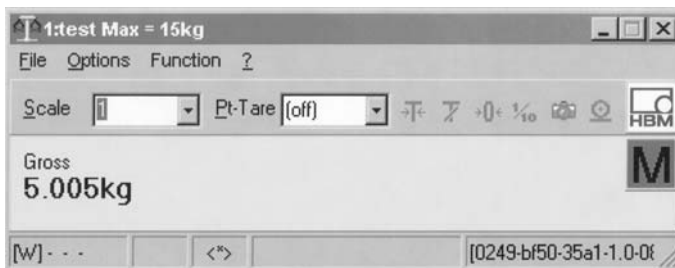
1) Note:

The plug-in power supply unit supplies 15 V DC / 530mA and can be used for operation with up to 8x C16i load cells.

Please refer to the power supply table in the Installation instructions of the load cell!

Software

- **TRADE** (see separate Data sheet)



- Display and storage of legal for trade weighing data
- No special requirements on the PC
- Substitutes indicator and alibi-printer
- Handles up to 8 scales
- PTB Test Certificate D09-00.34 and EU Scale Approval available
- Diagnostic functions
- Installation support as corner adjustment, calibration w/o weights, etc.