

# C16i...

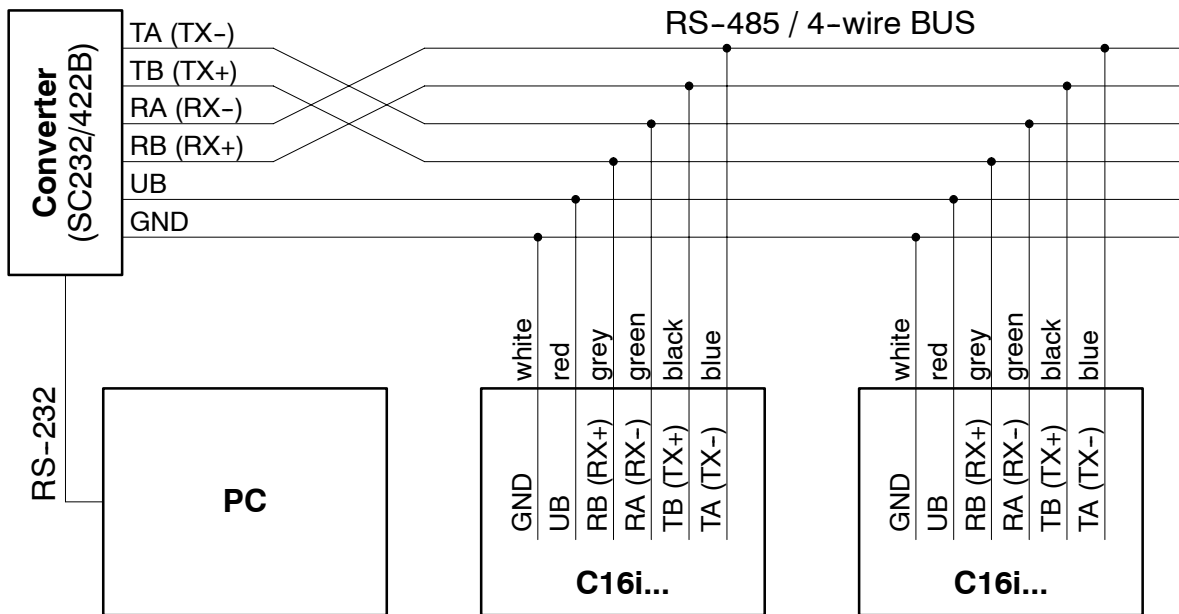
## Digital Load Cells



### 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
- 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				
Min. load cell verification interval ( $v_{min}$ )	0.0200				0.0100			0.0083	
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]	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 ( $TK_C$ ) <sup>1)</sup>	% of $C_n$	±0.0250 <sup>1)</sup>				±0.0080 <sup>1)</sup>			
Temperature effect on zero signal ( $TK_0$ )	/ 10 K	±0.0285				±0.0140			±0.0116
Hysteresis error ( $d_{hy}$ ) <sup>1)</sup>	% of $C_n$	±0.0330 <sup>1)</sup>				±0.0170 <sup>1)</sup>			
Non-Linearity ( $d_{lin}$ ) <sup>1)</sup>		±0.0300 <sup>1)</sup>				±0.0180 <sup>1)</sup>			
Creep ( $d_{cr}$ ), 30 min.		±0.0330				±0.0167			
Reference excitation voltage ( $U_{ref}$ )	V (DC)	12							
Nominal range of excitation voltage ( $B_U$ )		7 ... 15 <sup>2)</sup>							
Current consumption	mA	50 <sup>2)</sup>							
Resolution	Bit	20 (at 1 Hz)							
Measuring rate	/ sec	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 ... 38400							
Number of bus adresses	max. 32								
Nominal temperature range ( $B_T$ )	-10 ... +40 [14...104]								
Service temperature range ( $B_{tu}$ )	°C [°F]	-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								

<sup>1)</sup> 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.

<sup>2)</sup> Please refer to the power supply table in the Installation instructions!

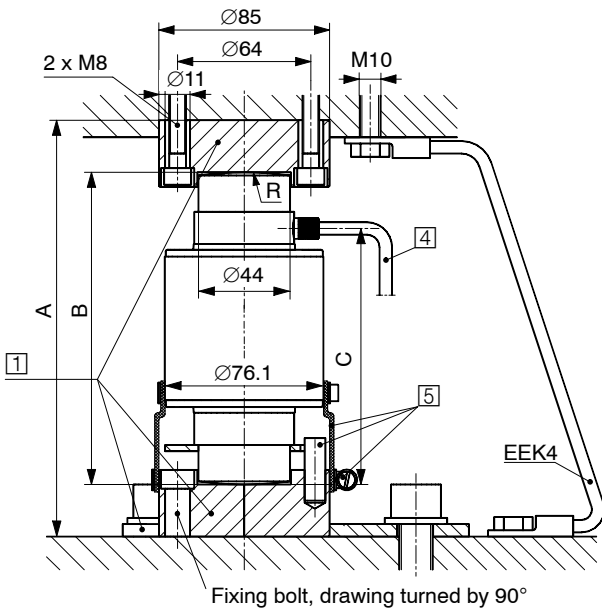
## Options for C16i...

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

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

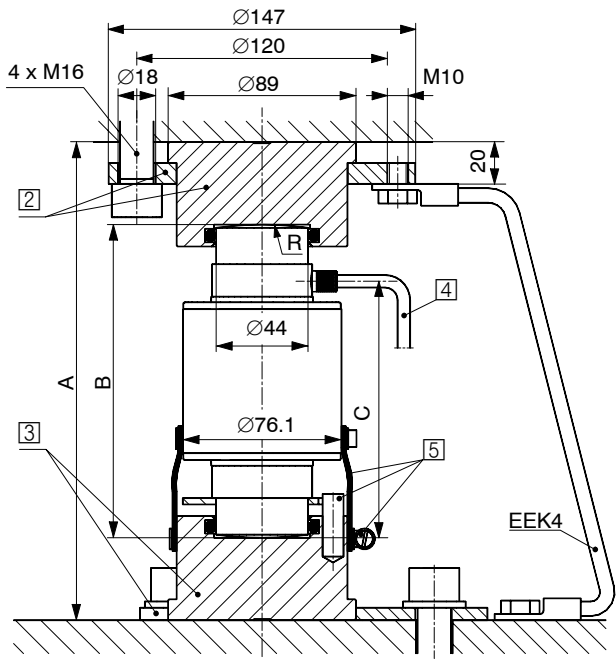
**Mounting variation 1:**

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

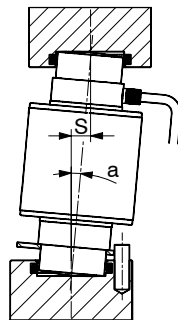
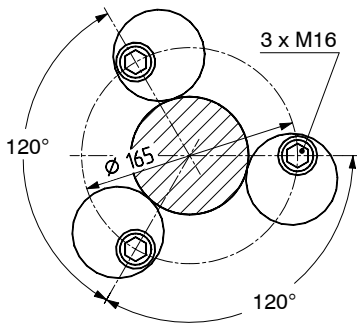


**Mounting variation 2:**

C16... + EPO3/50 t + C16/EPU44A



**Top view**



- 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 <sub>max</sub> C16...	Thrust pieces above + below (1 set = 2 pcs.)		A	B	C	R Ball	a <sub>max</sub> <sup>2)</sup>	S <sub>max</sub> <sup>3)</sup>	F <sub>R</sub> <sup>4)</sup> (% of applied load)	
		C16/ZOU44A <sup>1)</sup>								at S <sub>max</sub>	at S = 1 mm
		20 t	30 t							6.4	0.49
	40 t			200	150	123	130	5°	13	12.2	0.94
	60 t			260	210	157	220	3°	11	5.7	0.52

Mount. variation 2	E <sub>max</sub> C16...	Thrust pieces		A	B	C	R Ball	a <sub>max</sub> <sup>2)</sup>	S <sub>max</sub> <sup>3)</sup>	F <sub>R</sub> <sup>4)</sup> (% of applied load)	
		above	below							at S <sub>max</sub>	at S = 1 mm
		EPO3/50 t	C16/EPU44A							6.4	0.49
	20 t			229	150	123	130	5°	13	12.2	0.94
	30 t			229	150	123	160	5°	13	9.9	0.76
	40 t			229	150	123	180	5°	13	6.4	0.49
	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)



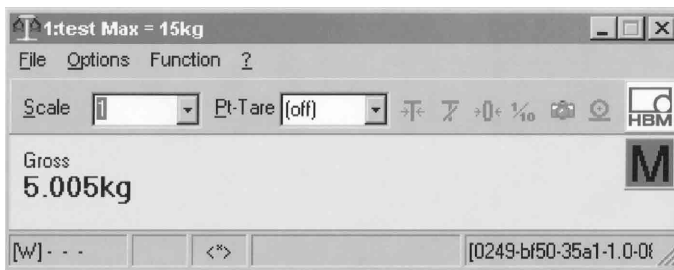
- Conversion of RS-232 in 4-wire-RS-422/485 or in 2-wire-RS-485 (adjustable)
- Galvanic separation
- High EMC-security (metallic housing)
- Power supply range 8 ... 30 V DC
- Incl. plug-in power supply unit <sup>1)</sup> and PC-connection cable

#### 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.

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