

C16i SERIES

DIGITAL SELF-RESTORING ROCKER-PIN LOADCELL



by 

DESCRIPTION

With the digital C16i Series loadcell and the TRADE® PC software, HBM provides a digital weighing system solution offering clear advantages over a conventional solution.

Facilitated off-centre load compensation with platform weighing machines: comfortable and error-free sensitivity balance via software command; no soldering in of resistors, etc.

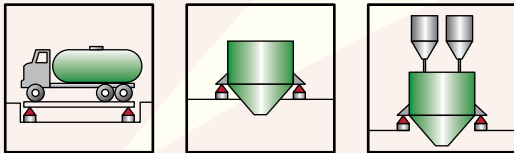
Enhanced maintenance options: TRADE® makes the weighing system transparent right through to the loadcell thus rendering diagnosis easier and more reliable even remotely via phone.

The C16i Series reduces hardware required: no weighing indicator nor alibi printer necessary. Lower noise sensitivity: digital signal transmission.

The custom-designed TRADE® software which is admissible for verification enables measured data to be displayed and stored accordingly. Furthermore, a DDE interface is available for data exchange with other programs.

The C16i digital load cell has the same dimensions as the analog C16A version. Therefore, no mechanical modifications are required when retrofitting the scales.

APPLICATIONS



OPTIONS

- Cable Length 20m (For 20t and 30t Capacities Only)
- Cable Length 40m (All Capacities)
- Metal Braided Cable, 20m Long (All Capacities)

CABLE

COLOUR	DESIGNATION
Blue	TA (Txd-)
Black	TB (Txd+)
Green	RA (Rxd-)
Grey	RB (Rxd+)
White	Gnd
Red	UB
Wire	Shield

FEATURES

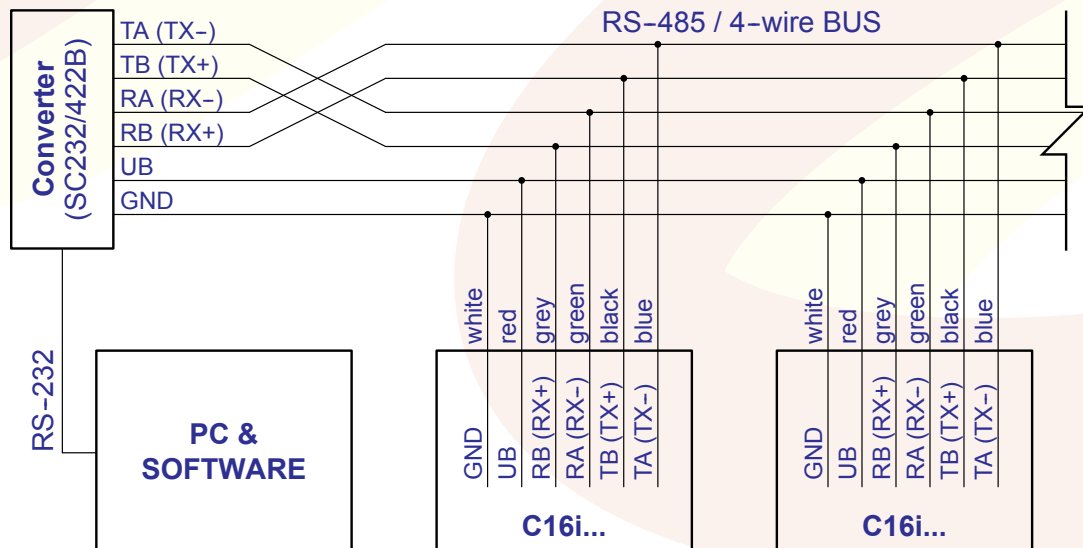
- Digital Output Signal (RS-485/4-Wire)
- Maximum Capacities of 20t, 30t, 40t and 60t
- Self Restoring Rocker Pin
- Simple to Install
- Stainless Steel Material, Laser Welded, IP-68
- Trade Approved in Classes C3, C4 and C6, NMI No. S531
- Class D1 Also Available But Not Trade-Approved
- Meets EMC/ESD Requirements According to EN 45 501
- In-Built Over-Voltage Protection

SPECIFICATIONS

Model	C16iD1				C16iC3			
	20t	30t	40t	60t	20t	30t	40t	60t
Capacity								
Accuracy Class	D1 (0.0330 %)				C3 (0.0180 %)			
Maximum Number of Loadcell Intervals (n_{LC})	1,000 Divisions				3,000 Divisions			
Minimum Loadcell Verification Interval (V_{MIN})	0.0200% of E_{MAX}				0.0100% of E_{MAX}			0.0083% of E_{MAX}
Sensitivity (C_n)	1,000,000 Digits							
Sensitivity Tolerance	±0.03%							
Temperature Effect on Sensitivity (TK_C) ^A	±0.0250% of $C_n/10^\circ C$				±0.0080% of $C_n/10^\circ C$			
Temperature Effect on Zero Balance (TK_0)	±0.0285% of $C_n/10^\circ C$				±0.0140% of $C_n/10^\circ C$			±0.0116% of $C_n/10^\circ C$
Hysteresis Error (d_{ny}) ^A	±0.0330% of C_n				±0.0170% of C_n			
Non-Linearity (d_{in}) ^A	±0.0300% of C_n				±0.0180% of C_n			
Creep (d_{cr}) Over 30 Minutes	±0.0330% of C_n				±0.0167% of C_n			
Reference Excitation Voltage (U_{ref})	12V							
Nominal Range of Excitation Voltage (B_U)	7V to 12V ^B							
Current Consumption	50mA							
Resolution	20 Bits (@ 1Hz)							
Measuring Rate	200 100 50 25 12 6 3 2 1/Second							
Filter Mode 0	8Hz to 0.05Hz (Low Pass Filter)							
Filter Mode 1	8Hz to 35Hz (Low Pass Filter)							
Asynchrone Interface	RS-485/4-Wire (Cable Length Up to 500m)							
Baud Rate	1,200bps to 115,200bps							
Nominal Temperature Range (B_T)	-10°C to +40°C							
Service Temperature Range (B_U)	-20°C to +70°C							
Storage Temperature Range (B_U)	-50°C to +85°C							
Safe Load Limit (E_L)	150% of E_{MAX}							
Ultimate Breaking Load	>350% of E_{MAX}							
Permissible Dynamic Load (F_{srel}) Vibration Amplitude According to DIN 50100	70% of E_{MAX}							
Deflection at E_{MAX} (s_{nom}), ±0.05mm	0.65mm	0.75mm	0.85mm	1.22mm	0.65mm	0.75mm	0.85mm	1.22mm
Weight (G) Approximately	2.2kg	2.4kg	3.0kg	3.8kg	2.2kg	2.4kg	3.0kg	3.8kg
Protection Class to EN60529	IP-68 (Test Conditions 100 Hours Under 1m Water Column) IP69 K (Water at High Pressure, Steam Jet Cleaning)							
Material: Measuring Body Cable Fitting Sealing Cable-Sheath	Stainless Steel Stainless Steel Viton® (Viton is a Fluoroelastomer) PVC							

^A Typical Value ^B Please Refer to the Power Supply Table in the Installation Instructions

WIRING DIAGRAM



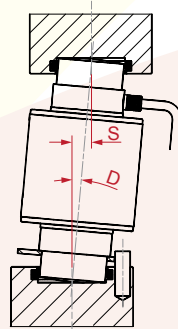
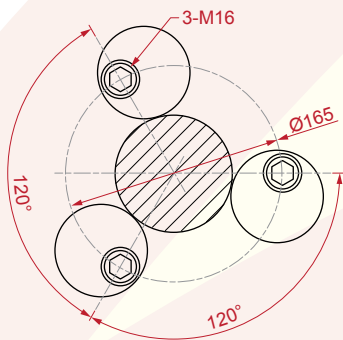
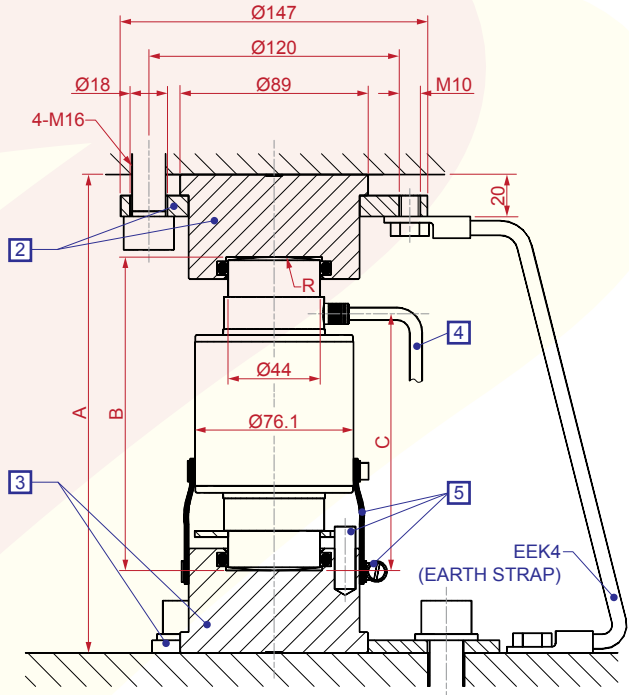
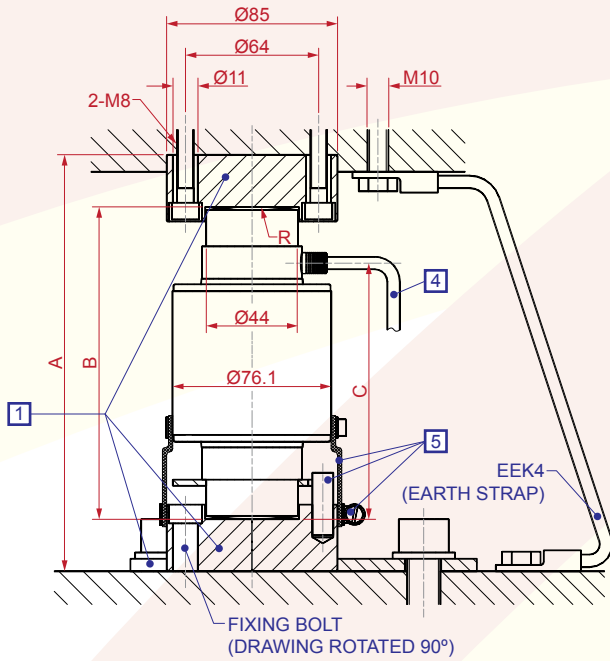
DIMENSIONS

MOUNTING VARIATION 1

For Capacities 20t to 60t

MOUNTING VARIATION 2

For Capacities 20t to 60t



- 1 C16/ZOU44A MOUNTING KIT
- 2 EPO3/50t TOP MOUNTING KIT
- 3 C16/EPU44A BOTTOM MOUNTING KIT
- 4 STANDARD CABLE LENGTH:
20t, 30t = 12m
40t, 60t = 20m
- 5 DOWEL PIN Ø10 x 30 (ROTATION STOP),
FLEXIBLE TUBE AND TUBE CLIP ENCLOSED
IN THE PACKING OF THE LOADCELL

TOP VIEW

MOUNTING VARIATION 1

MODEL	MOUNTING KIT	A	B	C	R	D _{MAX}	S _{MAX}	RESTORING FORCE F _R % of Applied Load	
								At S _{MAX}	At S=1
								C16AC3/20t	C16/ZOU44A (Both Top and Bottom Assemblies are Included in the Single Kit) Maximum Load = 40t per Loadcell
C16AC3/30t	200	150	123	160	5°	13	9.9	0.76	
C16AC3/40t	200	150	123	180	5°	13	12.2	0.94	
C16AC3/60t	260	210	157	220	3°	11	5.7	0.52	

MOUNTING VARIATION 2

MODEL	MOUNTING KIT	A	B	C	R	D _{MAX}	S _{MAX}	RESTORING FORCE F _R % of Applied Load	
								At S _{MAX}	At S=1
								C16AC3/20t	EPO3/50t Top Assembly C16/EPU44A Bottom Assembly
C16AC3/30t	229	150	123	160	5°	13	9.9	0.76	
C16AC3/40t	229	150	123	180	5°	13	12.2	0.94	
C16AC3/60t	289	210	157	220	3°	11	5.7	0.52	

D_{MAX} = Maximum Permissible Skewing, S_{MAX} = Maximum Permissible Lateral Displacement of Load Introduction

All Dimensions in mm Unless Noted Otherwise

ACCESSORIES

THRUST PIECES

Mounting Variation 1:

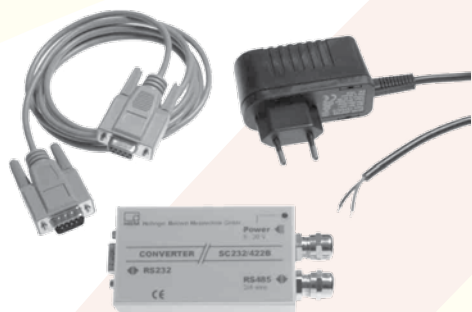
- C16/ZOU44A Thrust pieces (stainless steel) for above and below (1 set = 2 pieces), for use with C16.../≤60t up to a maximum load per loadcell of 40t, including three-excentric washers

Mounting Variation 2:

- EPO3/50t Thrust piece for above, including spanner
- C16/EPU44A Thrust piece for below, including three-excentric washers

SERIAL CONVERTOR

- Interface Converter Set SC232/422B



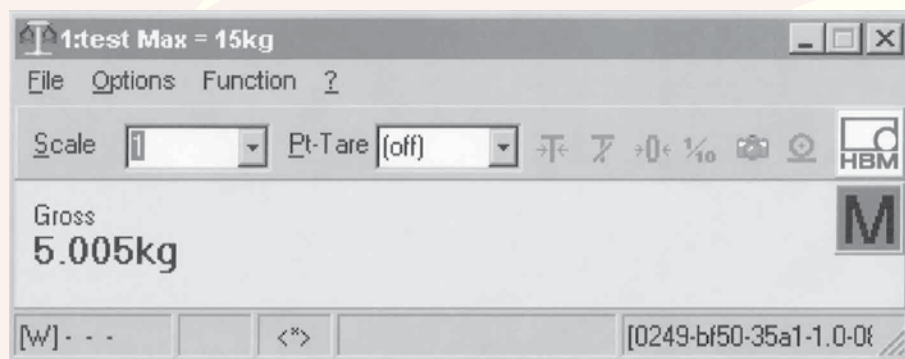
- Conversion of RS-232 in 4-Wire to RS-422/RS-485 or in 2-Wire to RS-485 (Adjustable)
- Galvanic Separation
- High EMC-Security (Metalic Housing)
- Power Supply Range 8V to 30VDC
- Including Plug-In Power Supply Unit and PC-Connection Cable

Note:

The plug-in power supply unit supplies 15VDC/530mA and can be used for operation with up to 8 x C16i loadcells. Please refer to the power supply table in the Installation Instructions of the loadcell!

SOFTWARE

- TRADE® PC Software



- Display and Storage of Legal-for-Trade Weighing Data
- No Special Requirements on the PC
- Substitutes Indicator and Alibi-Printer
- Handles Up to Eight Scales
- Diagnostic Functions
- Installation Support as Corner Adjustment, Calibration without Weights, Etc.

Accuweigh Pty Ltd

WESTERN AUSTRALIA (HEAD OFFICE):
PHONE: (08) 9259 5535

SOUTH AUSTRALIA OFFICE:
PHONE: (08) 8447 5011

NEW SOUTH WALES (SYDNEY) OFFICE:
PHONE: (02) 9728 4877



www.accuweigh.com.au

VICTORIA OFFICE:
PHONE: (03) 9548 5554

NEW SOUTH WALES (NEWCASTLE) OFFICE:
PHONE: (02) 4966 8900

QUEENSLAND OFFICE:
PHONE: (07) 3265 5520