

C16A SERIES

SELF-RESTORING ROCKER-PIN LOADCELL



**100t & 200t
LOADCELLS**

by 



C3 LOADCELLS

DESCRIPTION

The C16A Series is an analog canister loadcell with maximum capacities from 20t to 200t. This self-centring loadcell is available as a trade-approved version (accuracy class C3 for up to 3,000 divisions - excludes 200t) or as a non-trade version (accuracy class D1).

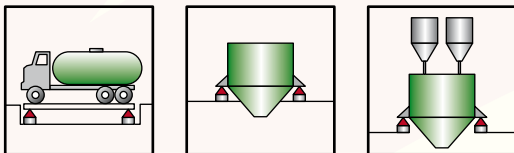
The loadcell's robust design together with the patented rotation stop makes the loadcell especially fit for use in vehicle scales. Of course it offers an IP-68 degree of protection. The C16A loadcell is optionally available with integrated lightning protection.

FEATURES

- Trade Approved for Up to 3,000 Divisions, NMI No. S370
- Other Accuracy Classes are Available Upon Request But are Not Approved for Trade Use:
 - D1 (Up to 1,000 Divisions),
 - C4 (Up to 4,000 Divisions) and
 - C5 (Up to 5,000 Divisions)
- Self-Restoring Function
- Maximum Capacities from 20t to 200t
- Simple to Install
- Stainless Steel Materials, Laser Welded, IP-68
- Optimised for Parallel Connection by Corner Pre-adjustment
- Meets EMC/ESD Requirements According to EN 45 501
- Explosion Proof Versions According to ATEX 95 (Optional)



APPLICATIONS



OPTIONS

- Explosion-Proof Versions According to ATEX 95:
 - Ex II 2 G EEx ia IIC T4 resp. T6 (Zone 1)*
 - Ex II 3 G EEx nA II T6 (Zone 2)
 - Ex II 2 D IP68 T80 °C (Zone 21)*
 - Ex II 3 D IP68 T80 °C (Zone 22 for Non-Conductive Dust)
 - Ex II 2 G EEx d IIC T6 (Zone 1)*
- * With EC-Type Examination Certificate
- Over-Voltage Protection (Not Possible in Connection with Explosion-Proof Versions)
- $V_{MIN} = 0.0050\%$ ($Y=20,000$)
- Accuracy Classes C4 and C5 (OIML) on Request
- Cable Length 20m ($E_{MAX} = 20t$ to 30t)
- Cable Length 40m ($E_{MAX} = 20t$ to 100t)
- 20m Metal Braided Cable ($E_{MAX} = 20t$ to 60t)

CABLE

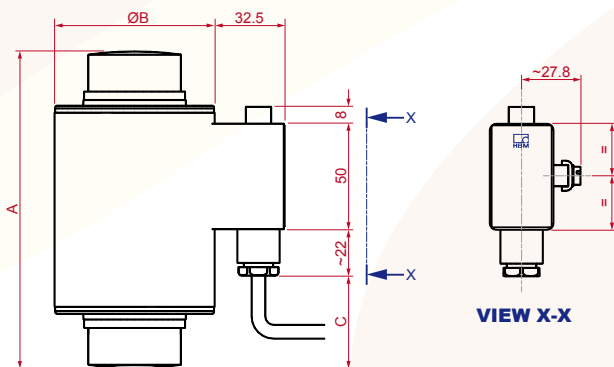
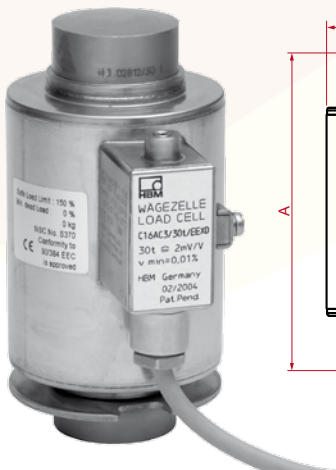
COLOUR	DESIGNATION
Blue	+ Excitation
Black	- Excitation
Green	+ Sense
Grey	- Sense
White	+ Signal
Red	- Signal
Wire	Shield

SPECIFICATIONS

Model	C16AD1						C16AC3					
	20t	30t	40t	60t	100t	200t	20t	30t	40t	60t	100t	
Capacity												
Accuracy Class	D1 (0.0330 %)						0.1%	C3 (0.0170 %)				
Maximum Number of Loadcell Intervals (n_{LC})	1,000 Divisions						N/A	3,000 Divisions				
Minimum Loadcell Verification Interval (V_{MIN})	0.0200% of E_{MAX}						N/A	0.0100% of E_{MAX}			0.0083% of E_{MAX}	0.0167% of E_{MAX}
Sensitivity (C_n)	2mV/V											
Sensitivity Tolerance	$\pm 0.5\%^B$											
Temperature Effect on Sensitivity (TK_C) ^A	$\pm 0.0250\%$ of $C_n/10^\circ C$						$\pm 0.0080\%$ of $C_n/10^\circ C$					
Temperature Effect on Zero Balance (TK_0) ^A	$\pm 0.0285\%$ of $C_n/10^\circ C$						$\pm 0.0140\%$ of $C_n/10^\circ C$			$\pm 0.0116\%$ of $C_n/10^\circ C$	$\pm 0.0234\%$ of $C_n/10^\circ C$	
Hysteresis Error (d_{ny}) ^A	$\pm 0.0330\%$ of C_n						$\pm 0.0170\%$ of C_n					
Non-Linearity (d_{lin}) ^A	$\pm 0.0300\%$ of C_n						$\pm 0.0180\%$ of C_n					
Creep (d_{cr}) Over 30 Minutes	$\pm 0.0330\%$ of C_n						$\pm 0.0167\%$ of C_n					
Input Resistance (R_{LC})	700 Ω $\pm 20\Omega$											
Output Resistance (R_0)	706 Ω $\pm 3.5\Omega^B$											
Insulation Resistance (R_{is})	>5G Ω											
Reference Excitation Voltage (U_{ref})	5V											
Nominal Range of Excitation Voltage (B_U)	0.5V to 12V											
Nominal Temperature Range (B_T)	-10°C to +40°C											
Service Temperature Range (B_{tu})	-30°C to +70°C											
Storage Temperature Range (B_{st})	-50°C to +85°C											
Safe Load Limit (E_L)	150% of E_{MAX}											
Ultimate Breaking Load (E_d)	350% of E_{MAX}				200% of E_{MAX}	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}), $\pm 0.05mm$	0.65mm	0.75mm	0.85mm	1.22mm	1.57mm	2.15mm	0.65mm	0.75mm	0.85mm	1.22mm	1.57mm	
Weight (G) Approximately	2.1kg	2.3kg	2.9kg	3.7kg	8.0kg	9.0kg	2.1kg	2.3kg	2.9kg	3.7kg	8.0kg	
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 Metal Bellow Cable Fitting Cable-Sheath	Stainless Steel Stainless Steel Stainless Steel/Viton® (Viton is a Fluoroelastomer) PVC											

^A Typical Value ^B 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-centre load is applied

C16AC3 EExd FLAME-PROOF VERSION



CAPACITY	A	B	C
20t, 30t, 40t	150	76.1	66
60t	210	76.1	96
100t, 200t	260	95	132

All Dimensions in mm Unless Noted Otherwise

Loadcells with the type “d” protection flameproof enclosure “d” are characterised by the fact that they can be used in the corresponding zones 1 and 2 directly and without any additional devices (such as required for power limitation in EEx i).

The dimensions of the loadcells with type “d” protection flameproof enclosure differ from those of the standard loadcells only in the area of the cable connection box. For all other dimensions, please refer to the data sheets of the standard loadcells.

For intended use in potentially explosive atmospheres, it is essential to maintain the ambient temperature range of $-30^\circ C \leq T_a \leq +65^\circ C$ specified on the load cell. Otherwise, all further specifications for standard load cells provided in the data sheet apply.

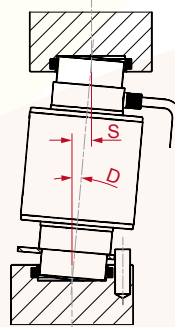
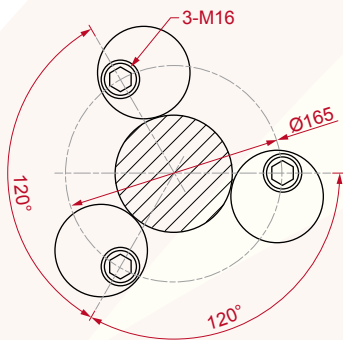
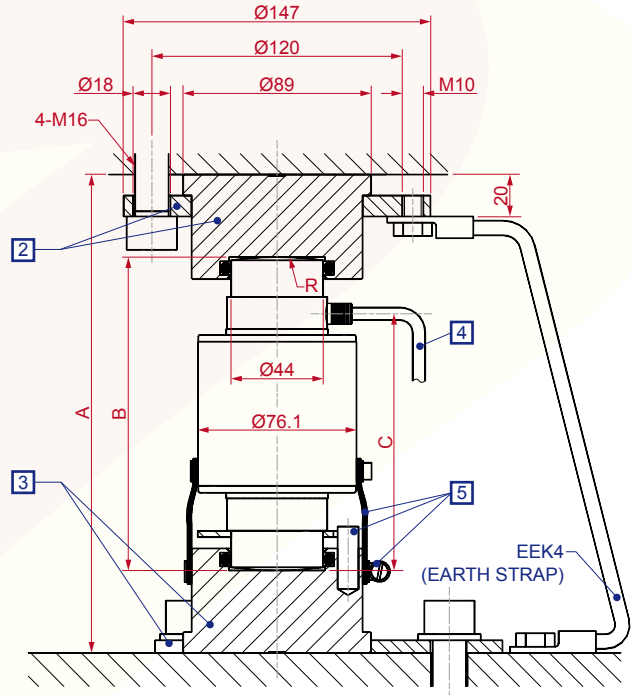
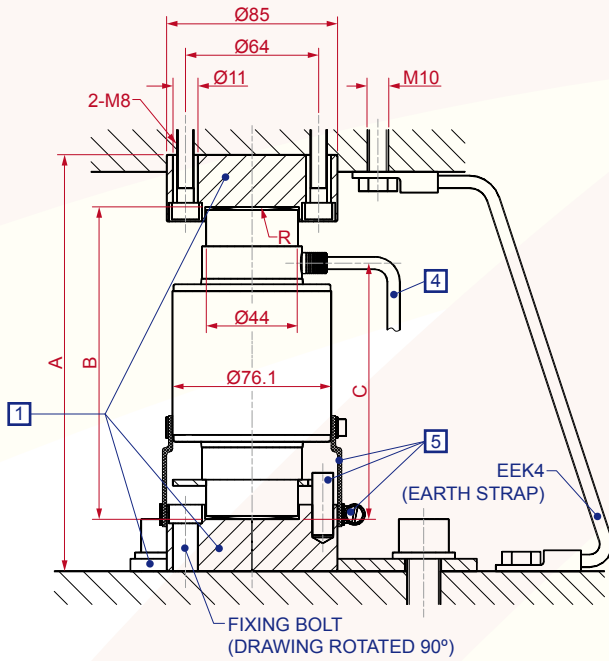
DIMENSIONS (20t to 60t MODELS)

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

