Type RC3D Load Cell

RC3D #1   RC3D #2   RC3D #n
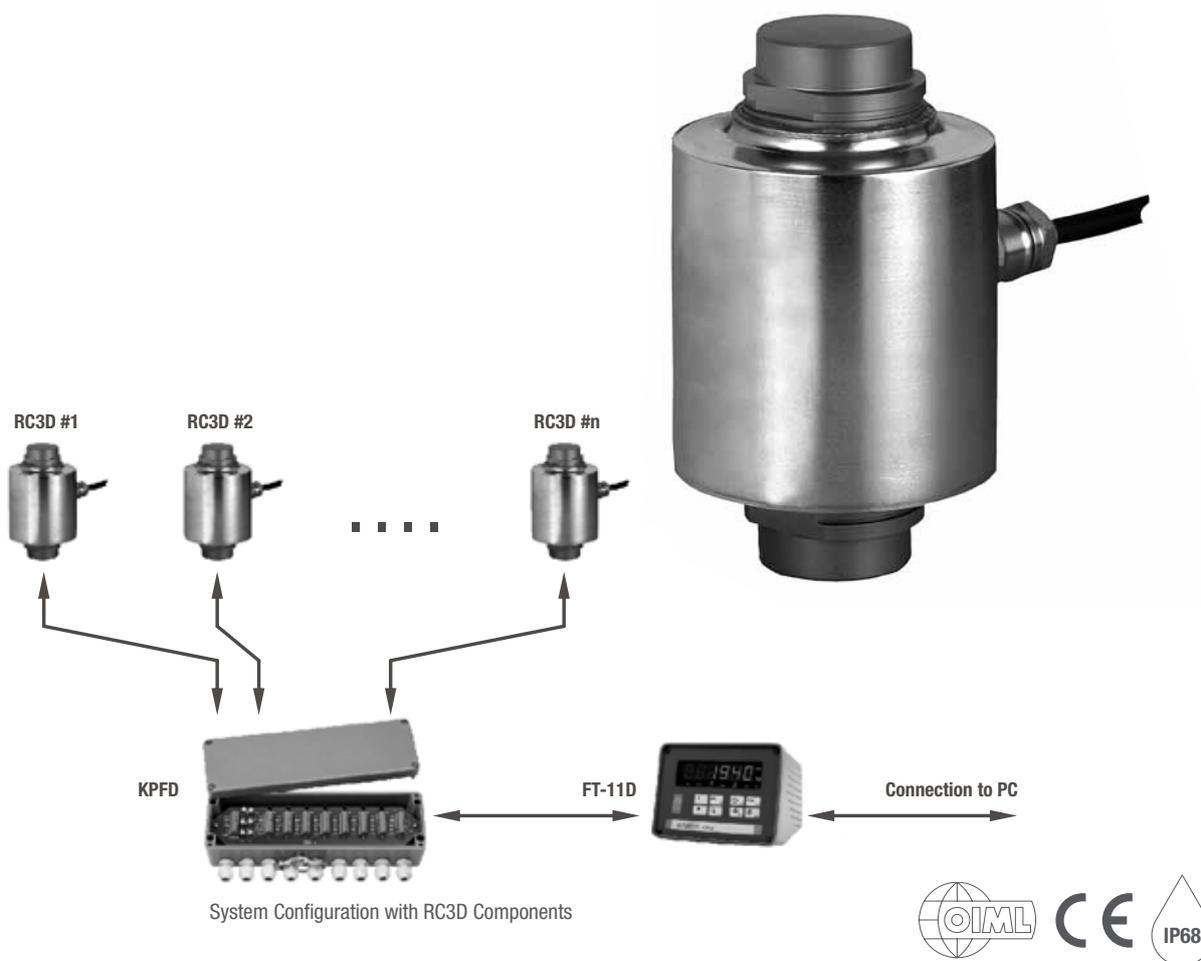
KPFD   FT-11D   Connection to PC

System Configuration with RC3D Components

OIML CE IP68

Product Description

The type RC3D is the digital version of the successful RC3 rocker column load cell. An integrated state of the art microprocessor system within the load cell improves system accuracy and load cell handling. The digital output enables the user to communicate with each load cell independently from others.

Application

- Weighbridges, hoppers, tanks and silos

Key Features

- Capacities of 30, 40 and 50 t
- Stainless steel construction
- Environmental Protection IP68 with complete hermetic sealing
- Self restoring design
- Digital load cell with built-in microcontroller and A/D conversion
- Easy communication (RS485) and fast system setup
- Improved handling of corner adjustment, system calibration, fault finding and load cell replacement

Approvals

- OIML approval to C3 and C4 (Y = 15 000)

Packed Weight

Capacity (t)	30	40	50
Weight (kg)	3.3	3.6	4.5

Option

- Integrated surge protectors

Available Accessories

- Compatible range of applications hardware
- Compatible range of electronics

Specifications

Maximum capacity	(E_{max})	t	30 / 40 / 50			
Accuracy class according to OIML R60			(GP)	C1	C3	C4
Maximum number of verification intervals	(n_{LC})		n.a.	1 000	3 000	4 000
Minimum load cell verification interval	(v_{min})		n.a.	$E_{max}/5\,000$	$E_{max}/15\,000$	
Temperature effect on minimum dead load output	(TC_0)	%*RO/10°C	± 0.0400	± 0.0280	± 0.0093	
Temperature effect on sensitivity	(TC_{RO})	%*RO/10°C	± 0.0200	± 0.0160	± 0.0100	± 0.0080
Combined error		%*RO	± 0.0500	± 0.0300	± 0.0200	± 0.0180
Non-linearity		%*RO	± 0.0400	± 0.0300	± 0.0166	± 0.0125
Hysteresis		%*RO	± 0.0400	± 0.0300	± 0.0166	± 0.0125
Creep error (30 minutes) / DR		%*RO	± 0.0600	± 0.0490	± 0.0166	± 0.0125
Rated Output	(RO)	counts	200 000 ± 200 (± 0.1%*RO)			
Zero balance		counts	± 2 000 (± 1%*RO)			
Internal resolution		counts	550 000			
Excitation voltage		V	9...12			
Current consumption		mA	40			
Converter type			Sigma-Delta ratiometric			
Conversion rate			5 Hz (3 to 80 Hertz, factory configuration only)			
Digital filter			FIR automatically adjusted to conversion rate plus Rolling Average (1, 2, 4, 8, 16, 32 samples) post filtering			
Asynchrone interface			RS485A half duplex, multidrop with network address, 2400...38400 baud Baudrate, data bits, parity and data output are programmable			
Number of bus addresses			32			
Safe load limit	(E_{lim})	%*E_{max}	200			
Ultimate load		%*E_{max}	300			
Compensated temperature range		°C	−10...+40			
Operating temperature range		°C	−40...+60			
Load cell material			stainless steel 17-4 PH (1.4548)			
Sealing			complete hermetic sealing; cable entry sealed by glass to metal header			
Protection according EN 60 529			IP68 (up to 2 m water depth) / IP69K			

The limits for Non-Linearity, Hysteresis, and TC_{RO} are typical values.
The sum of Non-linearity, Hysteresis and TC_{RO} meets the requirements according to OIML R60 with p_{LC}=0.7.

Dimensions (in mm)

mandatory main rocking direction

TOP VIEW

* S_{max} = maximum lateral displacement of load introduction. Recommended gap 3...5 mm.

**RF = restoring force at S_{max} and E_{max}.

Type	H1	H2	H3	H4	H5	H6	H7	H8	D1	D2	S_{max}*	RF**
RC3D-30 t / 40 t	150	75	31	33	13	11.7	39	84	39	81	12	27 kN
RC3D-50 t	178	89	32	34	17	8.5	44	94	44	99	9	51 kN

Wiring

- The load cell is provided with a 3x twisted pair cable (AWG 24) and shield according DIN 47 100
- Cable length: 18 m
- Cable diameter: 7.4 mm
- The shield is connected to the load cell body

6-pin glass to metal header

3 + (white) Excitation
4 − (brown)
5 A (yellow) RS485A out
2 B (green)
6 A (grey) RS485A in
1 B (pink)
Shield (transparant)

A95-Rev7-GB-2(2)   Specifications and dimensions are subject to change without notice.

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