

RC3D (new generation) compression load cell



RC3D-A



RC3D-B

product description

The Flintec RC3D series are digital compression load cells featuring embedded electronics for advanced diagnostics and independent cell communication. Their robust, hermetically sealed (IP68/IP69K) stainless steel construction and rocker column design ensure optimal accuracy in demanding environments. The series offers three distinct connection options to suit any installation.

applications

Weighbridges, hoppers, tanks and silos.

variants

RC3D-A	A single, integrated 18m cable with flying leads.	Designed for simple, direct wiring in non-daisy-chain systems.
RC3D-B	Dual M12 connectors (on load cell body).	Designed for daisy-chain installations, reducing cabling and junction boxes.
RC3D-C	Dual 1m cables with M12 male connectors.	Designed for daisy-chain installations, reducing cabling and junction boxes. The 1m cables offer greater installation flexibility.

key features

- Stainless steel construction
- 30t, 40t, 50t Capacities
- Certified OIML C3/C4 (Y=15k)
- Certified NTEP Class III (5k)
- IP68/IP69K
- Hermetic Sealing
- Digital Electronics & Diagnostics
- RS485 Communication
- Easy Calibration & Setup
- Integrated Surge Protection
- Rocker Column Accuracy

accessories + options

Range of hardware and electronics



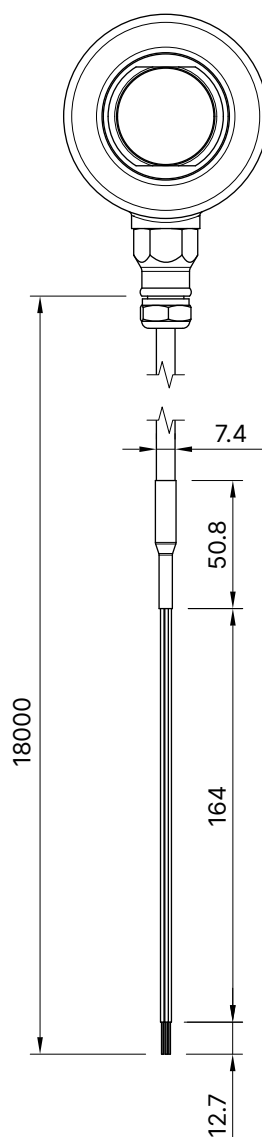
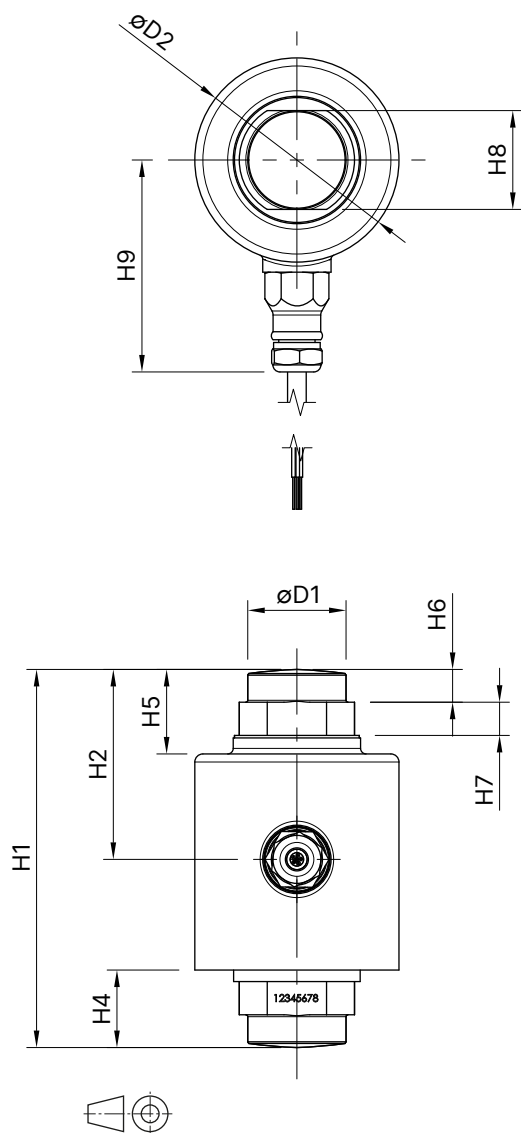
specifications

Variants	-	RC3D-A / RC3D-B / RC3D-C			
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	500,000			
Excitation voltage	VDC	10...12			
Current consumption	mA	< 40			
Converter type	-	Sigma-Delta ratiometric			
Conversion rate	-	10 Hz (4.7 to 80 Hertz, factory configuration only)			
Digital filter	-	Rolling Average (4, 9, 16, 25 samples)			
Asynchronous interface	-	RS485A half duplex, multidrop with network address, 2,400...38,400 baud. Baud rate, data bits, parity and data output are programmable			
Number of bus addresses	n	52			
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 2m water depth) / IP69K			
Packet weight	kg	3.3 (30t), 3.6 (40t), 4.5 (50t)			

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 $p_{LC}=0.8$.

RC3D-A product dimensions (mm)



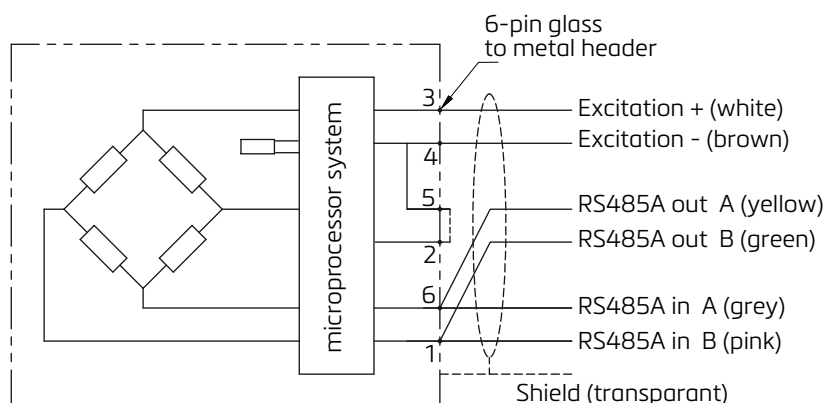
Unless otherwise specified:
dimensions are in
millimetres with tolerances
to ISO 2768-m.

Capacity	H1	H2	H3	H4	H5	H6	H7	H8	H9	D1	D2
30t / 40t	150	58	-	31	33	13	13	39	86	39	81
50t	178	69.5	-	32	34	17	25.2	44	95	44	99

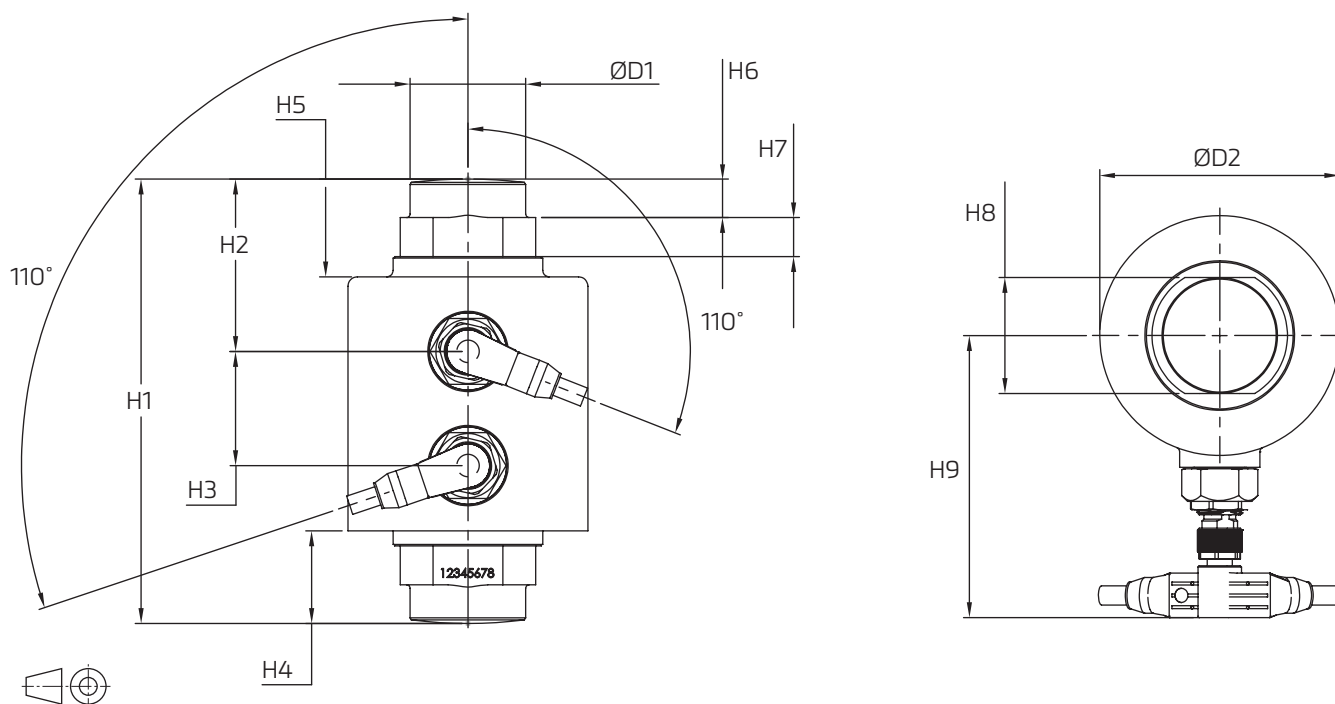
RC3D-A wiring

Supplied with one long 18m cable
with flying leads.

Shield is attached to the load cell
body via a cable gland.



RC3D-B product dimensions (mm)



Unless otherwise specified: dimensions are in millimetres with tolerances to ISO 2768-m.

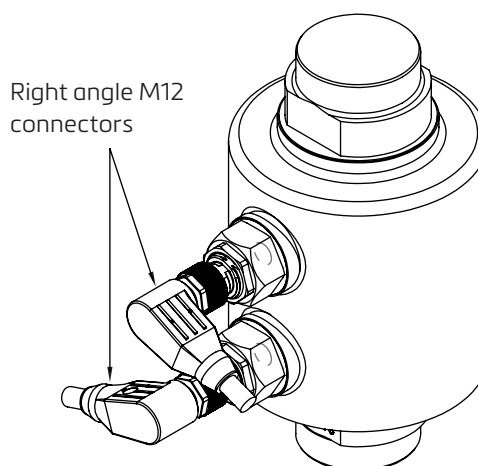
Capacity	H1	H2	H3	H4	H5	H6	H7	H8	H9	D1	D2
30t/40t	150	58	38.5	31	33	13	13	39	95	39	81
50t	178	69.5	38.5	32	34	17	25.2	44	104	44	99

cable and connectors

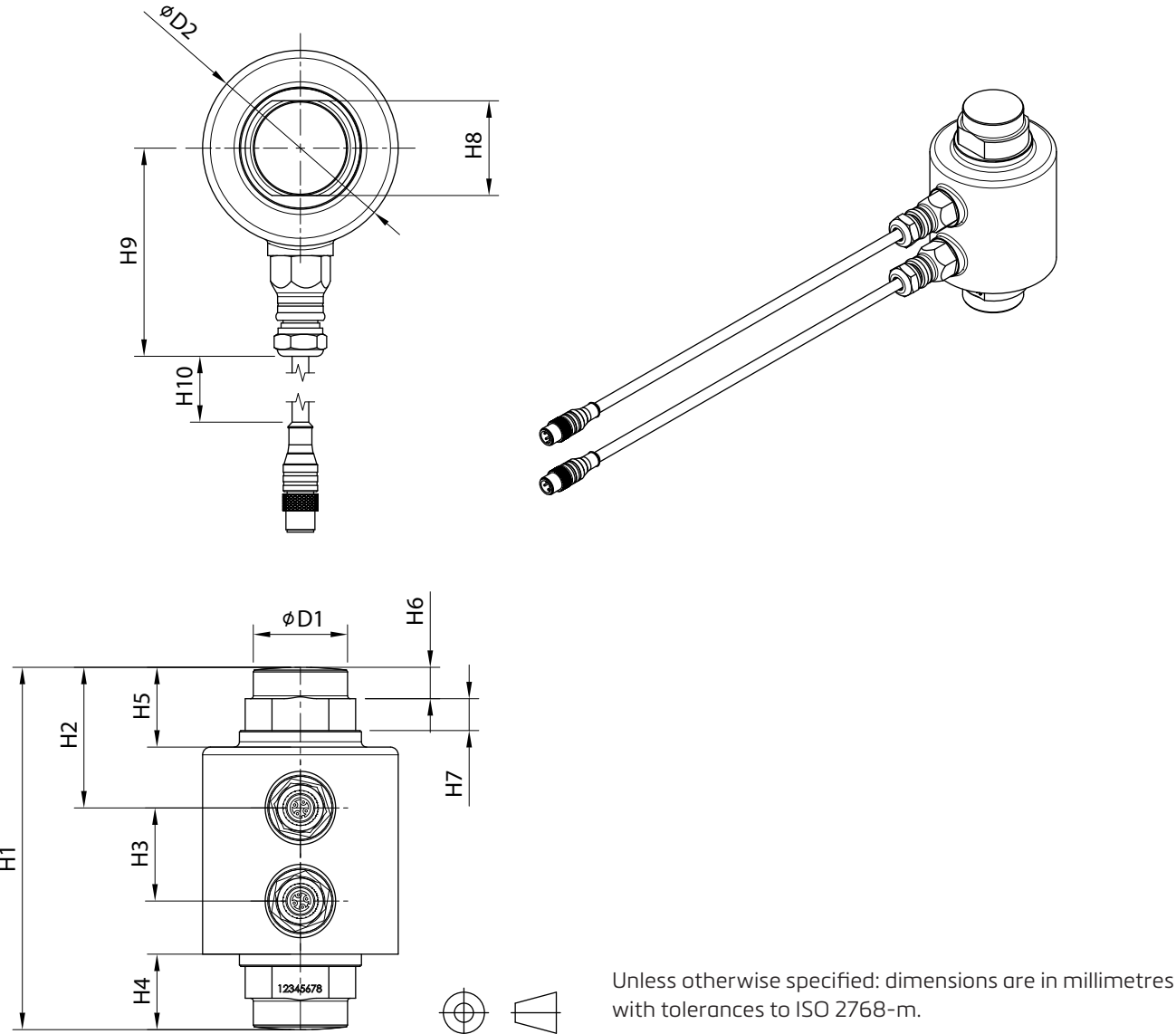
Features two integral M12, 4-pin, male connectors.

2x M12 right-angled or straight female connectors are available to be ordered separately.

For complete system installation, additional daisy-chain and home-run cables are required and ordered separately. See page 6 for details.



RC3D-C product dimensions (mm)



Capacity	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	D1	D2
30t/40t	150	58	38.5	31	33	13	13	39	86	1000	39	81
50t	178	69.5	38.5	32	34	17	25.2	44	95	1000	44	99

cable and connectors

Features two integrated 1m cables, each terminating in an M12, 4-pin, male connector.

Shield is attached to the load cell body via a cable gland.

For complete system installation, additional daisy-chain and home-run cables are required and ordered separately. See page 6 for details.

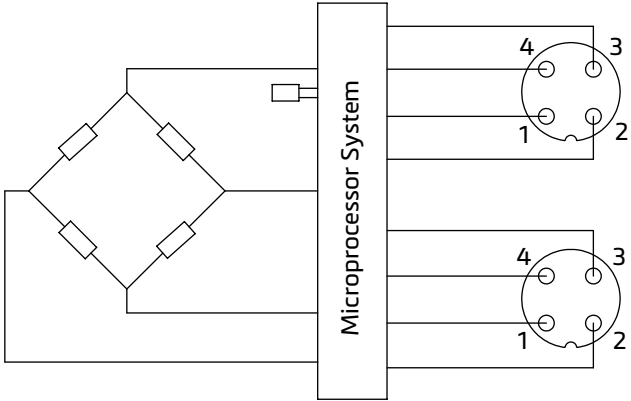
RC3D-B and RC3D-C wiring

M12 connector pin config.	
Pin no.	Description
1	Exc+
2	Exc-
3	Data-(A)
4	Data+(B)

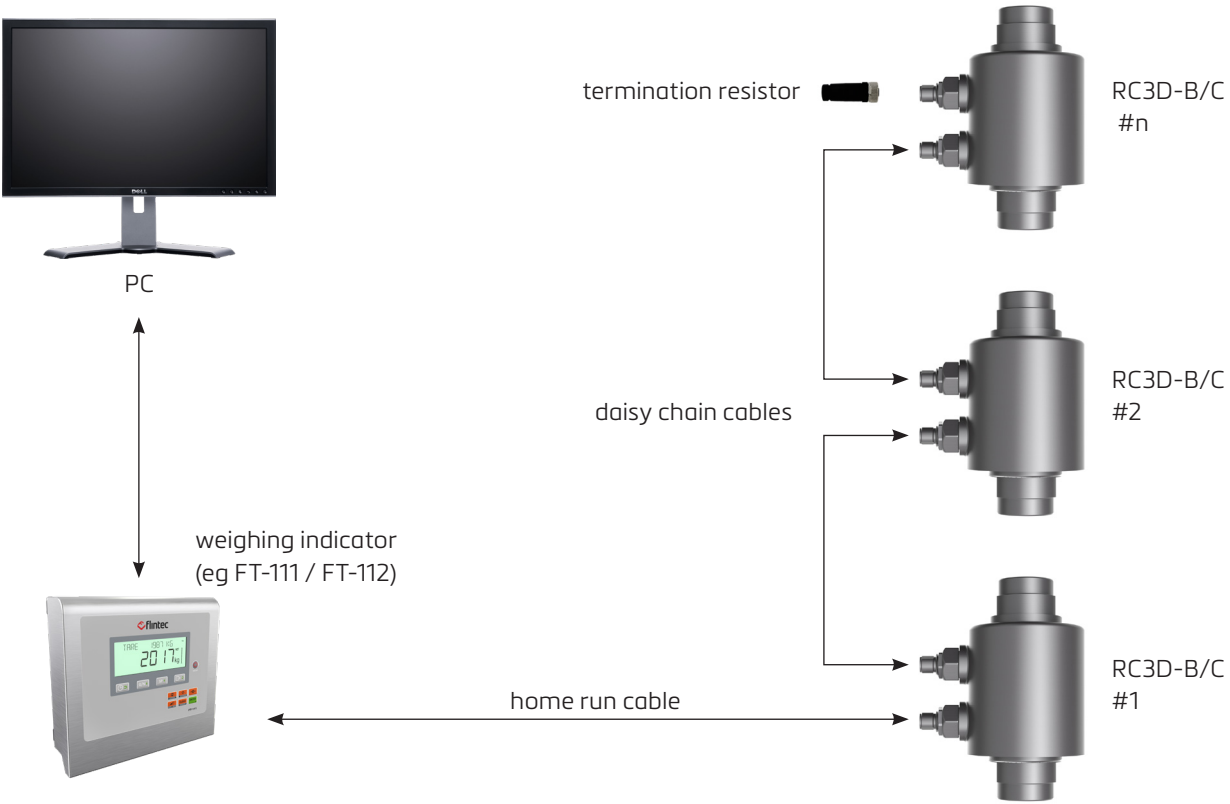
Note

For use with an FT-11xD indicator, connect Data-(A) on the home-run cable to 'B' on the indicator.

For other indicators, this connection may need to be reversed.



typical configuration



important notes

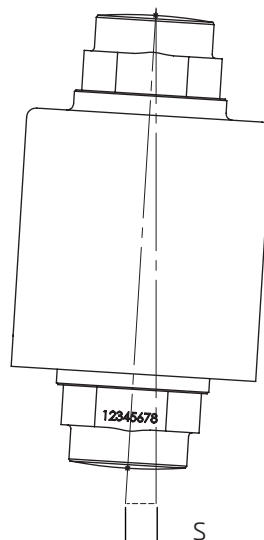
Termination resistor	The termination resistor needs to be affixed to the last load cell in the chain. Termination resistors must be ordered separately.
Daisy chain cable	Daisy chain cables to be ordered separately. The standard length is 10m; for other lengths please consult a sales office.
Home-run cable	Home run cable to be ordered separately. Standard length is 20m - Supplied with 1x M12, 4-pin, female connector (load cell end) and flying leads (weighing indicator end).
Separate power supply	Separate power supply available for systems with 12 or more load cells, please contact a sales office.

*Wire colours for home-run cable are: Red (Exc+), Black (Exc-), White (Data- 'A'), Blue (Data+ 'B')

rocker column design

The RC3D series uses a rocker column design to ensure optimum weighing accuracy by accommodating minor misalignments and off-centre forces.

Correct installation, allowing the load cell to rock freely in its designated main direction (as shown in the diagram adjacent), is crucial for performance.



Mandatory main
rocking direction

lateral displacement & restoring force

Capacity	*S _{max} (mm)	**RF (kN)
30t / 40t	12	27
50t	9	51

*S_{max} - Maximum permissible lateral displacement of load introduction.

**RF - Restoring force at S_{max} and E_{max}

Maintain a recommended gap of 3mm to 5mm around the load introduction head for free movement.

Values apply to all three models, RC3D-A, RC3D-B and RC3D-C.

Specifications and dimensions are subject to change without notice.