

Data Sheet: 4CT.R12

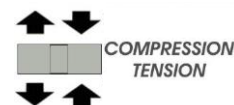
4CT

FORCE transducer

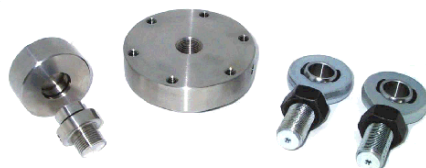
Accessories



WIRELESS transmission



Calibration report
in COMPRESSION

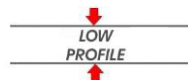


LAT N° 093
Calibration Centre
The products are NOT
covered by accreditation

ACCREDIA Calibration Certificate
ON REQUEST



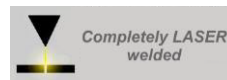
EASY APPLICATION



LOW
PROFILE



Long term
high stability



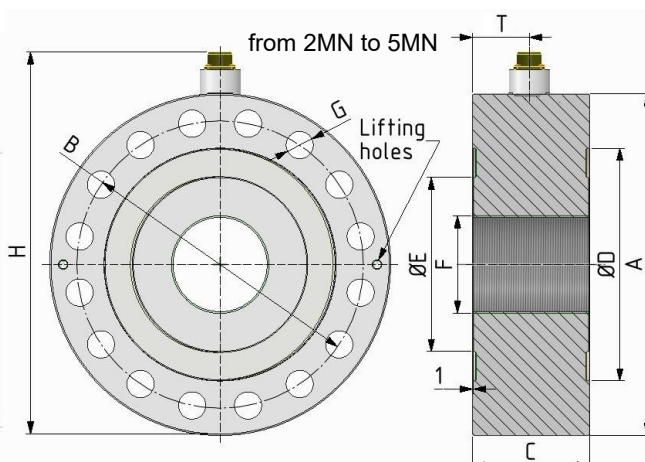
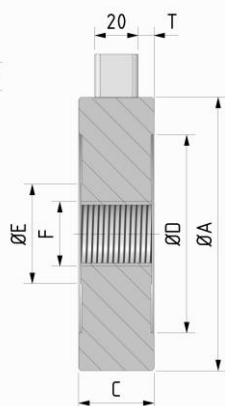
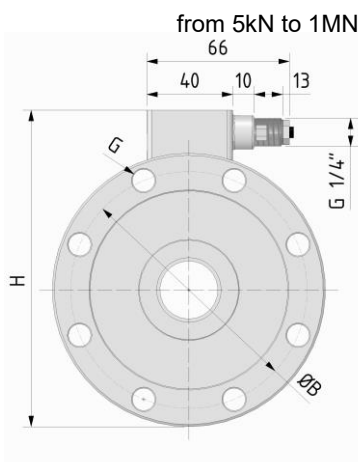
Completely LASER
welded



DYNAMIC STRESSES

Dimensions

[mm]



CODE	LOAD	CODE	LOAD	ØA	B	C	ØD	ØE	F	G	n°G	H	T	KHz ⁽²⁾
CTC4100250K5	250 kg	CTC41002KN5I15	2,5 kN	100	86	35	72	32	M20×1.5	9	6	121	7.5	2.5
CTC4100500K5	500 kg	CTC41005KNI15	5 kN											2.5
CTC41001T5	1 t	CTC410010KNI15	10 kN											2.5
CTC41002T55	2.5t	CTC410025KNI15	25 kN											4.8
CTC41005T5	5 t ⁽³⁾	CTC410050KNI15	50 kN ⁽³⁾	127	110	35	92	47	M30×2	10.5	8	149	7.5	8.6
CTC41275T5	5 t	CTC412750KNI15	50 kN											3.8
CTC412710T5	10 t	CTC4127100KNI15	100 kN											5.8
CTC416520T5	20 t	CTC4165200KNI15	200 kN											5.7
CTC416530T5	30 t	CTC4165300KNI15	300 kN	165	138	50	108	62	M42×3	17	12	188	15	7.3
CTC416550T5	50 t	CTC4165500KNI15	500 kN			60							20	9.8
CTC423075T5	75 t	CTC4230750KNI15	750 kN	230	185	80	145	98	M60×3	25	12	254	30	3.2
CTC4230100T5	100 t	CTC42301MNI15	1 MN											
⁽¹⁾ CTC4300200T5	200 t	⁽¹⁾ CTC43002MNI15	2 MN	300	250	100	198	132	M100×3	25	16	339	50	2.7
⁽¹⁾ CTC4350300T5	300 t ⁽⁴⁾	⁽¹⁾ CTC43503MNI15	3 MN ⁽⁴⁾	350	294	120	238	178	M100×3	28	16	389	60	2.8
⁽¹⁾ CTC4350500T5	500 t ⁽⁴⁾	⁽¹⁾ CTC43505MNI15	5 MN ⁽⁴⁾			130							65	

⁽¹⁾ ACCREDIA certification in **TENSION** can NOT be performed by LAT n° 93 Laboratory, on request it can be ordered to other accredited laboratories.

⁽²⁾ Natural frequency



Technical Data

Accuracy class: ISO 376	1						
NOMINAL LOAD	2.5 - 5 kN 10 - 25 kN 50 ⁽³⁾ kN	50 kN 100 kN	200 kN 300 kN	500 kN	750kN 1 MN	2 MN	3 MN ⁽⁴⁾ 5 MN ⁽⁴⁾
RELATIVE ERRORS (at reading) a)repeatability 0°-120°-240° (b) b)interpolation (fc) c) reversibility (u) d)zero (fo)	≤ ± 0.145 % ⁽⁵⁾ ≤ ± 0.090 % ⁽⁵⁾ ≤ ± 0.240 % ⁽⁵⁾ ≤ ± 0.030 % F.S.						
LINEARITY	≤ ± 0.05 % F.S.					≤ ± 0.10 % F.S.	
HYSTERESIS	≤ ± 0.05 % F.S.					≤ ± 0.10 % F.S.	
TEMPERATURE EFFECT (10°C) a)on zero b)on sensitivity EFFECT OF TRANSVERSE LOAD: a)at 10% of nominal load	≤ ± 0.028 % F.S. ≤ ± 0.024 % F.S. ≤ ± 0.030 % F.S.						
NOMINAL SENSITIVITY	2 mV/V ⁽⁶⁾						
SENSIVITY TOLERANCE	≤ ± 0.1 % F.S.						
NOMINAL LOAD	2.5 - 5 - 10 - 25 - 50 - 100 - 200 - 300 - 500 kN						
INPUT RESISTANCE	800 ± 20 Ω						
OUTPUT RESISTANCE	705 ± 2 Ω						
NOMINAL LOAD	750 - 1000 – 2000 – 3000 - 5000 kN						
INPUT RESISTANCE	430 ± 20 Ω						
OUTPUT RESISTANCE	352 ± 2 Ω						
INSULATION RESISTANCE	> 5 GΩ						
ZERO BALANCE	≤ ± 1% F.S.						
RECOMENDED SUPPLY VOLTAGE	10 V						
NOMINAL SUPPLY VOLTAGE	1-15 V						
RANGE MAXIMUM SUPPLY	18 V						
MECHANICAL LIMIT VALUES REFERRED TO NOMINAL LOAD: a)service load b)max permissible load c) breaking load d)max transverse load e)max permissible dynamic load	120 % 150 % > 300 % 100 % 75 % ⁽⁷⁾						
Displacement at nominal load (mm)	~0.06	~0.09	~0.17	~0.17	~0.23	~0.21	~0.21
REFERENCE TEMPERATURE	+23 °C						
TEMPERATURE NOMINAL	-10 / +40 °C						
RANGE SERVICE TEMPERATURE	-10 / +70 °C						
STORAGE TEMPERATURE	-20 / +80 °C						
WEIGHT (kg)	~1.6	~2.5	~5.8	~6.8	~16.5	~35	~63
PROTECTION CLASS (EN 60529)	IP67						
EXECUTION MATERIAL	Stainless Steel						
CABLE LENGTH	5 m (on request 10 m)						
FIXING SCREWS:							
a) diameter	M8	M10	M16	M16	M24	M24	M27
b) resistance class	12.9	12.9	12.9	12.9	12.9	12.9	12.9
c) tightening torque (Nm)	40	70	368	368	460	460	1500

(3)



The force transducer **50 kN Ø100** is guaranteed in **TENSION** up to **25 kN**.

(4)



The force transducers **3 MN** and **5 MN** are guaranteed in **TENSION** up to **2,5 MN**.

⁽⁵⁾ Percentage errors referred to reading, min. 1/10 of nominal load.

⁽⁶⁾ Tests and calibrations performed in **COMPRESSION** with the transducer mounted on a bearing support with correctly tightened clamping screws.

⁽⁷⁾ The dynamic load must be applied to the transducer central thread and not to the external fixing rim.

kg calibration on request.

Classifications according **ASTM E74** on request.



Applications

COMPRESSION

TENSION

WARNING:

Check that the fixing screws and the accessories are correctly tightened.

Accessories execution material:
from 2.5 to 200 kN
from 300 kN to 5 MN

Stainless Steel
Rm ≥ 90 kg/mm²
Rm ≥ 130 kg/mm²

Dimensions

[mm]

4CT:	A	B	C	D	E	F	G	H	L	M
2.5, 5, 10, 25, 50 kN	108	37	35	36	Ø 57	Ø 100	Ø 70	M 20 × 1.5	Ø 32	~ 170
50, 100 kN	108	37	35	36	Ø 76	Ø 127	Ø 100	M 30 × 2	Ø 47	~ 200
200 kN	169	60	50	59	Ø 76	Ø 165	Ø 100	M 42 × 3	Ø 62	~ 224
300 kN	169	60	50	59	Ø 76	Ø 165	Ø 100	M 42 × 3	Ø 62	~ 465
500 kN	179	60	60	59	Ø 76	Ø 165	Ø 100	M 42 × 3	Ø 62	~ 513
750 kN, 1 MN	252	85	80	87	Ø 126	Ø 230	Ø 180	M 60 × 3	Ø 98	/
2 MN	309	85	100	124	Ø 129	Ø 300	Ø 250	M100 × 3	Ø132	/
3 MN	384	120	120	144	Ø 168	Ø 350	Ø 330	M100 × 3	Ø 178	/
5 MN	394	120	130	144	Ø 168	Ø 350	Ø 330	M100 × 3	Ø 178	/

4CT:	CODE	ACCESSORIES (optional):
2.5, 5, 10 kN 25, 50 kN	CTIC22	① Loading head.
	CTC425M20	② Spherical loading head M20×1.5.
	CPBTC4D100	③ Mounting plate Ø 100 mm.
	CACCEM20	④ Knuckle joints.
50, 100 kN	CTIC28	① Loading head.
	CTC445M30	② Spherical loading head M30×2.
	CPBTC4D127	③ Mounting plate Ø 127 mm.
	CACCEM30	④ Knuckle joints.
200, 300, 500 kN	CTIC35	① Loading head.
	CTS62M42TC4	② Spherical loading head M42×3 (200-300kN)
	CTS62M42TC450T	② Spherical loading head M42×3 (500kN)
	CPBTC4D165	③ Mounting plate Ø 165 mm.
	CACCEM42	④ Knuckle joints. (max 200KN)
	CACCEM4230T	④ Knuckle joints. (max 300KN)
750 kN, 1 MN	CACCEM4250T	④ Knuckle joints. (max 500KN)
	CTIC60	① Loading head.
	CTS96M60	② Spherical loading head M60×3.
	CPBTC4D230	③ Mounting plate Ø 230 mm.
2 MN	CTIC106	① Loading head.
	TS160M100	② Spherical loading head M100×3 (2MN)
	CPBTC4D300	③ Mounting plate Ø 300 mm.
3 MN, 5 MN	CTIC140	① Loading head.
	CTS170M100	② Spherical loading head M100×3.
	CPBTC4D350	③ Mounting plate Ø 350 mm.



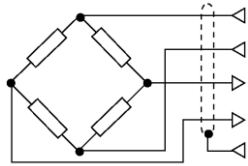
OPTIONS

To be purchased separately

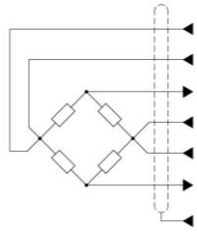
	CODE	⁽⁸⁾ OPTION
	CMIL6MF	Direct output connector MIL6M
	CMIL6FV5	Female 6 poles straight MIL6M CONNECTOR complete PVC CABLE , shielded, length 5 m.
	CODE	⁽⁹⁾ OPTION
	CONNM12MF	Direct output connector M12
	CONNM12FV5	Female 5 poles straight M12x1 CONNECTOR complete PVC molded CABLE , shielded, length 3 m.
	CODE	OPTION (2, 3 and 5 MN)
	CMIL7FV5	Female 7 poles straight MIL7M CONNECTOR complete PVC CABLE , shielded, 6 wires, length 5 m.

Electrical connection for transducers from 2.5 kN to 1 MN

STANDARD OUTPUT: PVC 105°C shielded cable, $\varnothing$ 5.2mm with 4x $\varnothing$ 0.35mm² tinned conductors. Shield connected to the body of the transducer.

Transducer	OUTPUT	CABLE	MIL6M ⁽⁸⁾ (optional)	M12 ⁽⁹⁾ (optional)
	EXCITATION +	Red	A	1
	EXCITATION -	Black	B	3
	OUTPUT +	White	D	2
	OUTPUT -	Yellow	C	4
	-----	Shield	F	5

Electrical connection for transducers from 2 MN to 5 MN

Transducer	OUTPUT	MIL7M	CABLE
	EXCITATION +	C	Red
	SENSE +	F	Orange
	OUTPUT +	A	White
	EXCITATION -	B	Black
	SENSE -	G	Blue
	OUTPUT -	D	Yellow
	-----	E	Shield

