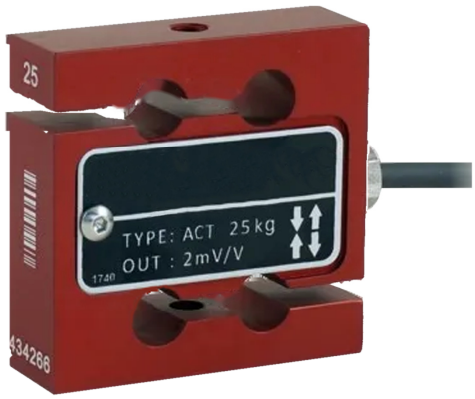
TENSION AND COMPRESSION TRANSDUCER

TENSION & COMPRESSION



- 1 kg TO 50 kg
- TENSION AND COMPRESSION
- ALUMINIUM · OVERLOAD PROTECTION
- NATURAL FREQUENCY TO 2 kHz

CE IP20 Aluminum Alloy mV/V

ORDERING

With overload protection	CTCA1K5 (1 kg) · CTCA2K5 (2 kg) · CTCA5K5 (5 kg)
Without overload protection	CTCA10K5 (10 kg) · CTCA25K5 (25 kg) · CTCA50K5 (50 kg)
Calibration	in kg as standard · in newton on request
Loading accessories	to be ordered separately — see accessories
Cable	3 m shielded PVC cable, fitted

An octogon order code has not yet been defined; please state the nominal load and whether the calibration is to be in newton.

OVERVIEW

The LSAE is a small strain gauge transducer of aluminium for static and dynamic forces in tension and compression, from 1 to 50 kg. Its natural frequency rises with the nominal load, from 0.22 kHz at 1 kg to 2 kHz at 50 kg, which is what makes it usable for a moving force and not only for a standing one. The three smallest cells — 1, 2 and 5 kg — come with an overload protection built in, in both directions, up to 500 % of full scale. Linearity and hysteresis stay within 0.03 %, repeatability within ± 0.01 %, and the nominal output is 2 mV/V. An M6 thread at each end takes a loading head, a spherical head or a knuckle joint, and an accessory kit turns the cell into a small material testing head with hooks and tips. The body is 53 × 52 × 17 mm and weighs about 300 g.

MEASUREMENT AND ACCURACY

- Nominal load 1, 2, 5, 10, 25, 50 kg
- Tension and compression, static and dynamic
- Natural frequency 0.22 … 2.00 kHz
- Linearity and hysteresis ≤ 0.03 %
- Repeatability ± 0.01 %
- Nominal output 2 mV/V ± 0.1 %
- Input 440 Ω ± 20 Ω, output 350 Ω ± 2 Ω
- Service temperature –20 … +70 °C

MECHANICS AND MOUNTING

- Aluminium body, 53 × 52 × 17 mm
- Weight about 0.3 kg
- Thread M6 at both ends, 8 mm deep
- Service load 120 %, breaking load > 300 %
- Overload protection to 500 % FS for 1, 2, 5 kg
- Max. transverse load 50 % of nominal load
- Displacement ≤ 0.3 mm at nominal load
- Protection class IP20 · cable 3 m

TECHNICAL DATA

MEASUREMENT

Nominal load	1, 2, 5, 10, 25 and 50 kg — calibration in newton on request
Natural frequency	0.22 kHz at 1 kg · 0.50 kHz at 2 kg · 0.75 kHz at 5 kg · 1.00 kHz at 10 kg · 1.50 kHz at 25 kg · 2.00 kHz at 50 kg
Linearity	≤ 0.03 %
Hysteresis	≤ 0.03 %
Repeatability	± 0.01 %
Nominal sensitivity	2 mV/V · calibration tolerance ± 0.1 %
Temperature effect per 10 °C	on zero ± 0.025 % · on sensitivity ± 0.021 %

MECHANICAL LIMITS

Service load	120 %FS
Maximum permissible load	150 %FS
Breaking load	> 300 %FS
Maximum transverse load	50 %FS
Maximum dynamic load	50 %FS
Displacement at nominal load	≤ 0.3 mm
Overload protection	built in for 1, 2 and 5 kg, in tension and in compression, up to 500 % of full scale

ELECTRICAL DATA

Input resistance	440 Ω ± 20 Ω
Output resistance	350 Ω ± 2 Ω
Insulation resistance	> 5 GΩ
Zero balance	± 1 %
Supply voltage	recommended 10 V · nominal 1 … 15 V · maximum 18 V
Output	shielded PVC cable 70 °C, Ø 4.2 mm, 4 tinned conductors, 3 m
Shield	connected to the body of the load cell

TEMPERATURE, MATERIAL AND HANDLING

Reference temperature	+23 °C
Nominal temperature range	–10 … +40 °C
Service temperature	–20 … +70 °C
Storage temperature	–20 … +80 °C
Protection class	IP20
Material	aluminium · weight about 0.3 kg
Handling	be sure that the force exerted when assembling accessories does not exceed the nominal load; lay the cable on the fixed side, opposite the load

MOUNTING AND ACCESSORY KIT

Dimensions	53 × 52 × 17 mm
Thread	M6 at both ends, 8 mm deep, standing out about 4 mm
Loading heads	CTIC13 loading head · CTS18M6 spherical loading head · CBC32M6 mounting plate · CACCEM6 knuckle joints
Accessory kit KITCT	for tension and compression tests on materials
Kit for tension	hook (A) · short threaded extension (B) · long threaded extension (C) · threaded sleeve (H)
Kit for compression	conical tip (D) · notched tip (E) · chisel tip (F) · flat tip (G)

ELECTRICAL CONNECTION

Load cell	Cable
Excitation +	red
Excitation –	black
Output +	white
Output –	yellow
Shield	connected to the body of the load cell

The cell is delivered with three metres of shielded PVC cable of 70 °C, Ø 4.2 mm, with four tinned conductors. The shield is connected to the body of the load cell.

ACCESSORIES

Loading head CTIC13	flat loading head for compression
Spherical loading head CTS18M6	for compression on an uneven surface
Mounting plate CBC32M6	base for the cell
Knuckle joints CACCEM6	let the force enter on the axis when the structure is not aligned
Accessory kit KITCT	hook, two threaded extensions, threaded sleeve and four tips — conical, notched, chisel and flat

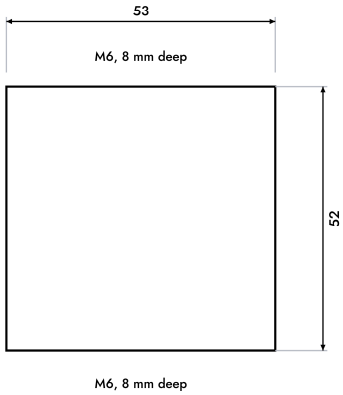
Check the force exerted while the accessories are assembled: it must not exceed the nominal load of the cell.

COMPLIANCE

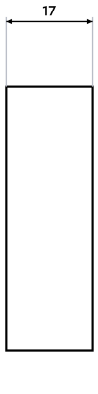
CE	Requirements	CE according to regulation (EC) No 765/2008
IP20	Protection	IP20 — for dry rooms and laboratory use
Aluminum Alloy	Material	aluminium body, about 0.3 kg
mV/V	Output	2 mV/V ± 0.1 % · supply 1 … 15 V, maximum 18 V

The manufacturer states no OIML class for this transducer; linearity, hysteresis and repeatability stand in their place. IP20 means the cell is not sealed against water — it belongs indoors.

DIMENSIONS (mm)



Front view



Side view

LOAD	1 kg	2 kg	5 kg	10 kg	25 kg	50 kg
Natural frequency in kHz	0.22	0.50	0.75	1.00	1.50	2.00

Drawn by octogon from the numbers of the manufacturer document — 53 × 52 mm in front view and 17 mm thick, with an M6 thread at both ends. The outline is schematic; the drawing of the document carries a large maker's plate in the middle of the picture and is therefore not taken over.