

TENSION FORCE TRANSDUCER



Type: **CLT**

- 20 t TO 250 t
- THREADED STUD AT BOTH ENDS
- STAINLESS STEEL · IP65
- ACCURACY CLASS 0.1 %



ORDERING

Up to 50 t	CCLT20T (20 t) · CCLT30T (30 t) · CCLT50T (50 t)
From 100 t	CCLT100T (100 t) · CCLT200T (200 t) · CCLT250T (250 t)
Loading head	CTIC51 for 20 ... 50 t · CTIC94 for 100 ... 250 t
Connector	M12, 4 poles, or MIL, 7 poles — please state
Cable	moulded cable for M12 × 1 on request

An octogon order code has not yet been defined; please state nominal load, connector and whether a loading head is wanted.



OVERVIEW

The CLT is a tension force transducer of stainless steel for nominal loads from 20 to 250 t. A threaded stud sits at each end, so the transducer is screwed into the chain between the load and its suspension and needs no eye or shackle. There are two sizes: up to 50 t with M56 × 4 and a length of 220 mm, from 100 t with M100 × 3 and 300 mm. Accuracy, linearity and hysteresis are each stated as 0.1 %, the nominal output is 2 mV/V, and the transducer is connected in six wires, so that sense lines compensate the drop in a long cable. Tests and calibration are performed in tension. A loading head is offered for each size.

MEASUREMENT AND ACCURACY

- Nominal load 20, 30, 50, 100, 200, 250 t
- Accuracy class 0.1 %
- Linearity and hysteresis 0.1 %
- Nominal output 2 mV/V ≤ 0.1 %
- Six wire connection with sense lines
- Input $800 \Omega \pm 20 \Omega$, output $700 \Omega \pm 2 \Omega$
- Temperature effect ≤ 0.028 % per 10 °C
- Calibrated in tension

MECHANICS, SEALING AND MOUNTING

- Stainless steel body, IP65 to EN 60529
- Service load 120 %, breaking load > 300 %
- Thread M56 × 4 up to 50 t, M100 × 3 from 100 t
- Length 220 mm or 300 mm
- Weight about 4 kg or 18 kg
- M12 connector or MIL connector, 7 poles
- Loading head CTIC51 or CTIC94
- Service temperature -20 ... +70 °C



TECHNICAL DATA

ACCURACY

Accuracy class	0.1 %
Linearity and hysteresis	0.1 %
Nominal load	20 and 30 t · 50, 100, 200 and 250 t
Nominal sensitivity	2 mV/V · calibration tolerance ≤ 0.1 %
Calibration	tests and calibration are performed in tension
Temperature effect per 10 °C	on zero ≤ 0.028 % · on sensitivity ≤ 0.008 %
Zero balance	≤ 1 %

MECHANICAL LIMITS

Minimum load	0 % of the nominal load
Service load	120 %
Maximum permissible load	150 %
Breaking load	> 300 %
Fifth limit value	50 % — the Italian column of the document names this row the maximum dynamic load, the English column the maximum transverse load
Thread	M56 × 4 up to 50 t · M100 × 3 from 100 t
Length	220 mm up to 50 t · 300 mm from 100 t

ELECTRICAL DATA

Input resistance	800 Ω ± 20 Ω
Output resistance	700 Ω ± 2 Ω
Insulation resistance	> 5 GΩ
Supply voltage	recommended 10 V · nominal 1 ... 15 V · maximum 18 V
Connection	six wires — excitation, sense and output, each as a pair
Connectors	M12, 4 poles, male · MIL, 7 poles, male — the document sets the two connection pictures under the headings up to 50 t and from 100 t to 250 t
Cable	shielded PVC cable 105 °C, Ø 5.2 mm, 4 × 0.35 mm ² tinned · shield connected to the body

TEMPERATURE AND SEALING

Reference temperature	+23 °C
Nominal temperature range	-10 ... +40 °C
Working temperature	-20 ... +70 °C
Storage temperature	-20 ... +80 °C
Protection class	IP65 to EN 60529
Material	stainless steel
Weight	about 4 kg up to 50 t · about 18 kg from 100 t

SIZES AND ACCESSORIES

Size up to 50 t	thread M56 × 4 · body Ø 80 mm · overall length 220 mm · thread length 57 mm at each end
Size from 100 t	thread M100 × 3 · body Ø 108 mm · overall length 300 mm · Ø 94.5 mm at the studs
Loading head CTIC51	for 20 to 50 t · Ø 76 mm, height 48 mm
Loading head CTIC94	for 100 to 250 t · Ø 127 mm, height 68 mm
Force introduction	screwed into the chain between load and suspension
Installation	lay the cable on the fixed side so that its weight does not enter the measurement



ELECTRICAL CONNECTION

Transducer	MIL7M	Cable
Excitation +	C	red
Sense +	F	orange
Output +	A	white
Excitation -	B	black
Sense -	G	blue
Output -	D	yellow
Shield	E	shield

Six wires instead of four: the sense pair measures the voltage that actually reaches the bridge, so that the drop in a long cable does not enter the result. The shield is connected to the body. The document names two connectors — M12 with four poles and MIL with seven — and sets their pictures under the headings up to 50 t and from 100 t to 250 t.

ACCESSORIES

Loading head CTIC51	for 20 to 50 t · Ø 76 mm, height 48 mm, bore Ø 51.5 mm
Loading head CTIC94	for 100 to 250 t · Ø 127 mm, height 68 mm, bore Ø 95 mm
Moulded cable	for the M12 × 1 connector
MIL connector	7 poles, male — for the six wire connection

The loading head is ordered separately; the transducer is not supplied with it.

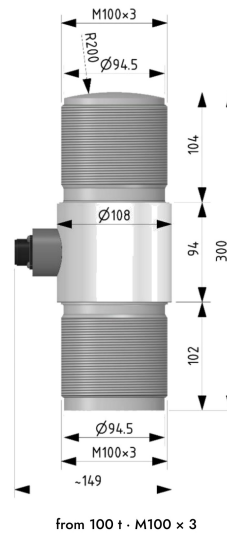
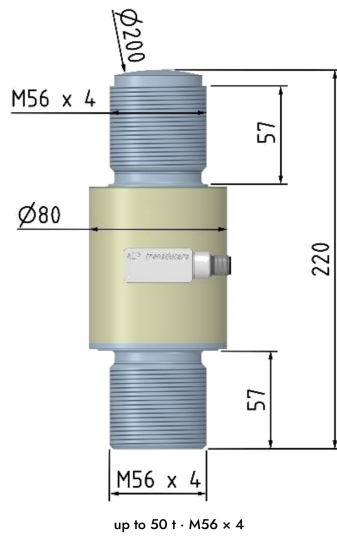
COMPLIANCE

 IP65	Sealing	IP65 to EN 60529
 Stainless Steel	Material	stainless steel body
 mV/V	Output	2 mV/V ≤ 0.1 % · six wire · supply 1 ... 15 V

The manufacturer states an accuracy class of 0.1 % for this transducer and no OIML class. The EAC certificate in the product folder covers the AEP transducers; please ask octogon before relying on a marking for a particular application.



DIMENSIONS (mm)



Both drawings are those of the manufacturer document — left the size up to 50 t with M56 x 4, right the size from 100 t with M100 x 3. They carry numbers and not letters, so there is no table beside them. The name of the manufacturer is part of the drawings and has not been retouched.

