TD-SC1
Load Cell Signal Conditioner

D/A   RS-485   CC-Link   EtherNet/IP™

The TD-SC1 is a thin, lightweight signal conditioner for strain gauge transducers. This converts a minute signal from a transducer into information required for control and outputs it.

In recent years, the introduction of IoT in production factories has accelerated rapidly. With the demand for improved productivity through centralized management, the load cell signal conditioner TD-SC1 series, which is equipped with various functions as standard and realizes high cost effectiveness, meets that need.

Easy to Use
Setting by PC via USB connection
(Available a simple calibration function on the main unit)

Fastest in Class
Sampling of 20,000 times/second by high-speed CPU

Thin and Lightweight
Compact design
(W30 x H85 x D110mm)
+ lightweight (210g)

Maintenance
Load cell overload is notified by Status LED

Easy and Convenient
Supports the plug-and-play function "TEDS" that automates calibration

Safety Standard
Compliant with CE & UKCA marking and UL standards that can be used worldwide

Selectable Network
RS-485, CC-LINK, EtherNet/IP™
Supporting various fieldbuses

SPECIFICATIONS

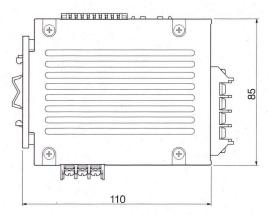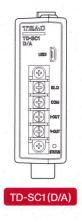|		
Bridge voltage		DC 5V / 10V ±10% (30mA current maximum, remote sense can be used)
Signal input range		±5.0mV/V
Equivalent Input /TEDS	Calibration range	0.05mV/V to 5.0mV/V
	Calibration precision	Within 0.1% F.S. (when using 1m standard TEAC Ø8, 6-core shielded cable with 350Ω impedance, 10V BV and 5mV/V setting)
Precision	Linearity	Within 0.01% F.S. +1 digit (when input is 5mV/V)
	Zero drift	Within 0.5µV/°C (Input conversion value)
	Gain drift	Within ±0.005% F.S/°C
A/D conversion		24-bit, 20000 times per second
Digital filter		OFF/3/10/30/100/300/1000Hz (−6dB/oct)
Moving average		OFF / 2 to 2048 times
TEDS function		IEEE1451.4 class 2 mix mode interface / Loading, Rewriting, Restoring
Display		Status display by LED on the front of the main unit
Comparison function	Setting	HI, LO
	Setting range	−99999 to 99999
Hold function		Sampling, Peak, Bottom, Zone definition (Peak, Bottom)
Control input/ output signal	Input signal	Hold, Digital zero, Clear (Photocoupler Insulation)
	Output signal	Load judgment (HI/OK/LO), NPN open collector (Photocoupler Insulation)
	USB Serial	Main unit setting by dedicated application.
Output	TD-SC1 (D/A)	Voltage: 0 – ±10V Current: 4 – 20mA
	TD-SC1 (485)	A+, B− (Photocoupler Insulation), TRM, SG
	TD-SC1 (E/IP)	P1, P2
	TD-SC1 (CCL)	DA, DB (isolated from main unit circuits using a photocoupler), DG, SLD
Power supply		Ratings: 24V DC ±10% 7W
Operating temperature range		0°C to 40°C
Storage temperature range		−20°C to 60°C
Operating humidity range		85% RH or less (without condensation)
Applicable standards		CE marking, UKCA marking, FCC (Class A), UL61010-1
External dimensions (W×H×D)		Approx. 30 × 85 × 110mm (without protrusions)
Weight		Approx. 210g
How to install		Support for 35mm wide top hat type rails (DIN rail mounting)
Options		AC adapter (AC100 to 240V, compliant to the safety standards of Japan and North America)

PIN ARRANGEMENT (common parts)

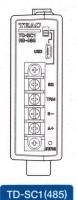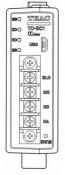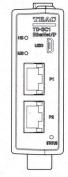| Terminal	Signal	Description
1	TEDS	TEDS memory signal
2	GND	TEDS memory signal ground
3	+EXC (A)	Excitation voltage +
4	+SENS (F)	Remote sense +
5	−SIG (B)	Input signal −
6	−EXC (C)	Excitation voltage −
7	−SENS (G)	Remote sense −
8	+SIG (D)	Input signal +
9	SHIELD (E)	FG
10	SHIELD (E)	FG
11	D/Z	Digital zero
12	HOLD	Hold start signals
13	CLEAR	Clearing the hold
14	Comparison judged HI	High limit judgment output
15	Comparison judged LO	Low limit judgment output
16	Comparison judged OK	OK judgment output
17	Power supply for control input signal (+)	Input +24V
18	Power supply for control input signal GND	Connect with 0V

DIMENSIONS / UNIT: (mm)

TD-SC1 (D/A) TD-SC1 (485) TD-SC1 (CCL) TD-SC1 (E/IP)