

LOAD CELL TRANSMITTER **ST Series**

Instruction Manual



 **Sewhacnm Co.,Ltd.**

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1. BEFORE INSTALLATION

1-1. Function and specification

The ST Series is exclusive transducer of load cell and only use to isolated power supply and it can designed transmit by voltage or current type to output of every transducer kind of load cell besides strain gage type and suited to industrial field purpose.

- The ST series can output to voltage and current of variable type at the same time.

Feature1.

It doesn't necessary to other transducer or transmitter as exclusive transducer.

Feature2.

The power input terminal has surge absorber, thereby protected from surge voltage of every kind which cause at industrial field.

Feature3.

There is output feature of variable type.

(Voltage 0~5V, 1~5V, 0~10V / Current 0~20mA, 4~20mA, 0~40mA)

1-2. Copy Rights

- 1). All Right and Authority for this Manual is belonged to Sewhacnm Co.,Ltd.
- 2). Any kinds of copy or distribution without Sewhacnm Co.,Ltd's permission will be prohibited.

1-3. Inquiries

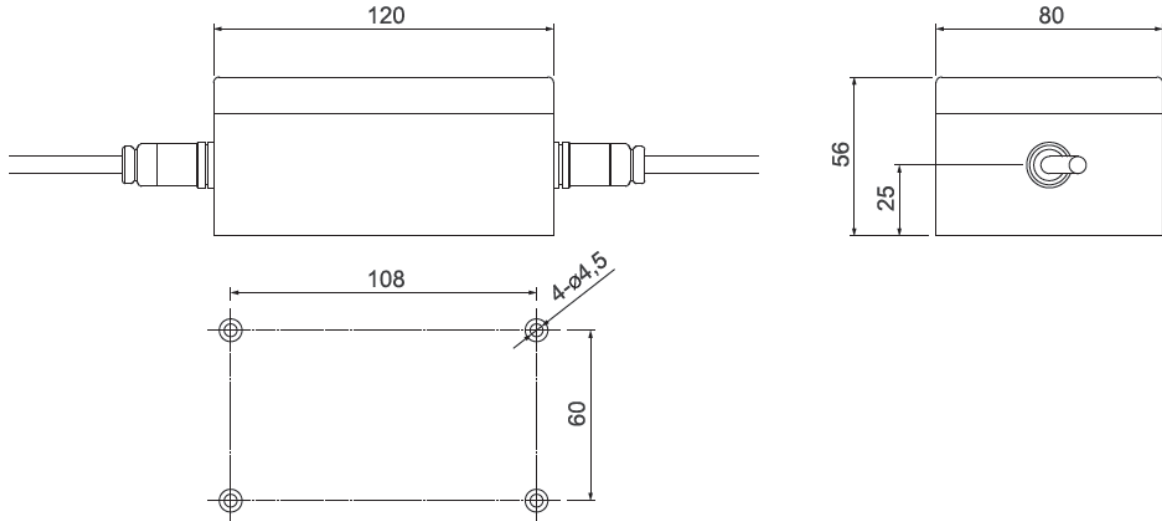
If you have any kinds of inquiries for this model, please contact with your local agent or Head Office.

Head Office : Sewhacnm Co.,Ltd.

Website : <http://www.sewhacnm.co.kr>

Email : info@sewhacnm.co.kr

2. SPECIFICATION



	Voltage Output Transmitter	Current Output Transmitter
MODEL	ST-V05, ST-V15, ST-V010	ST-I420, ST-I020, ST-I040
OUTPUT	0~5V, 1~5V, 0~10V	4~20mA, 0~20mA, 0~40mA
POWER (Constant Voltage)	+12/24V, +12/24V, +17~24V	+12/24V, +12/24V, +17~24V
Analogue Signal Input	1.2, 2.0, 3.0mV/V (0.5 ~ 4.0 mV/V DIP)	1.2, 2.0, 3.0mV/V (0.5 ~ 4.0 mV/V DIP)
Impedance Input	≤1010Ω	≤1010Ω
Transducer Affirmation Voltage	5V / 10 V Constant Voltage (Remote Sense type 5V / 10V)	5V / 10 V Constant Voltage (Remote Sense type 5V / 10V)
Zero Balance	±30% (R.O)	±30% (R.O)
Span Balance	±10% (R.O)	±10% (R.O)
Linearity Error Rate	0.02% (F.S)	0.025% (F.S)
Accuracy Rate	0.02% (F.S)	0.025% (F.S)
Temperature Range & Humidity	Within -25 ~ +85℃, 85% R.H	Within -25 ~ +85℃, 85% R.H
Load Resistance	Over 1.7 KΩ	0~500Ω

3. External Title



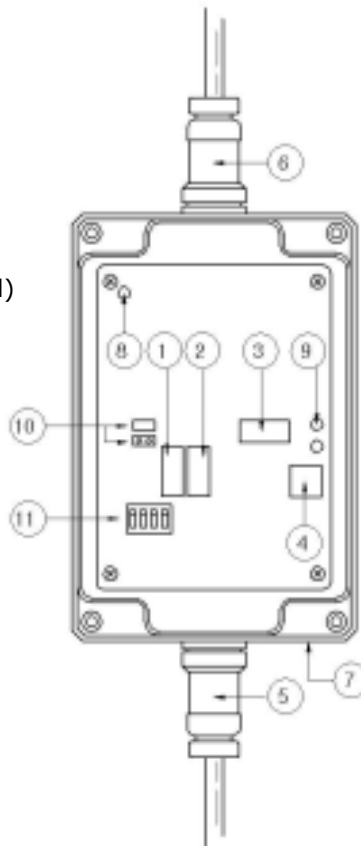
⑥. Power / Output Connector (5 pin Terminal)

1. Power: +24VDC
2. Power GND
3. Vout
4. Iout
5. Output GND



⑤. Sensor Input Connector (7pin connector)

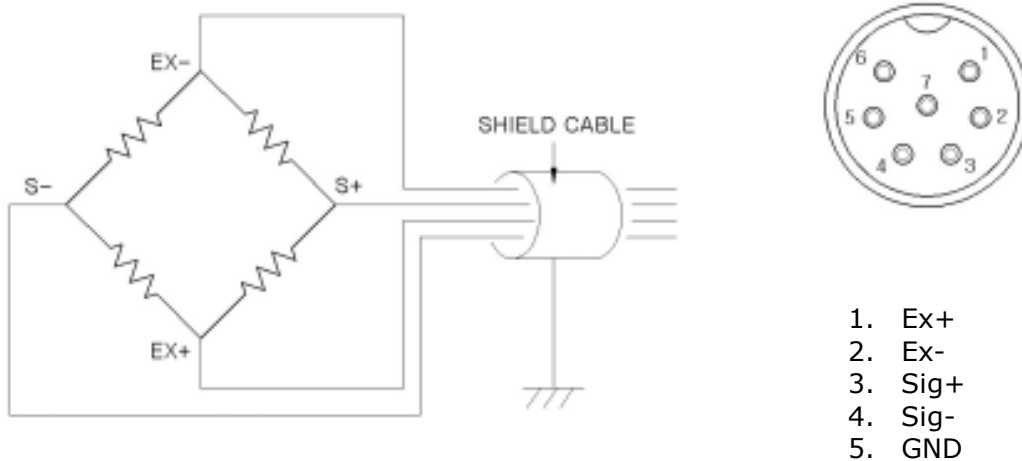
1. Transducer Ex+
2. Transducer Ex-
3. Transducer SIG+
4. Transducer SIG-
5. Transducer GND



1. Coarse Zero Volume Adjustment
2. Fine Zero Volume Adjustment
3. Span Volume Adjustment
4. Filter Volume Adjustment
5. Sensor Input Connector
6. Power / Output Connector
7. Case
8. Power LED
9. Output Balance
10. Sensor Affirmation Voltage select Jump (5V / 10V)
11. Gain Adjustment Switch

4. Transducer Connect

4-1. Transducer Connect



The Transducer cable color can be different from each manufacturer, please refer following data sheet.

Transducer Wire Color Chart (Sorted by Manufacturer)

Manufacturers	EXC+	EXC-	SIG+	SIG-	SHIELD
Sewha CNM	Red	White	Green	Blue	Black
KYOWA	Red	Black	Green	White	Cover
SHINKOH	Red	White	Green	Blue	Cover

※ Each Wire's color specification can be changed without prior notice.

4-2. Zero Setting

1. Have to warm up for 30 minutes after connected Transducer and affirmation voltage.
2. Please connect output terminal of ST transducer with the D.V.M or Indicator
3. Please adjust to zero volume 0.000V or 0.000mA as display as possible with screwdriver.
4. If not change display as 0.000V when adjust zero volume, the transducer have problem or error of terminal connect. Please once more check connecting condition. If you have any problems or question, please contact with local agent or Head Office.

4-3. Span Setting

1. Before Span setting, the transducer must be first zero state.
2. Adjust to gain with actual weight or load as displayed as you want value.
For example to ST V 010, let's suppose if there is load cell with rated output of 3mV/V and rated load of 200kg. If the voltage transducer has in • output with feature of 3mV/V and 0~10V, please apply load as 200kg of Maximum load and then adjust to Span volume as 10.000V as displayed.
The current transmit is same way.
3. Remove weight or load and then once more check to Zero value. If Zero value not correct, please adjust to Zero value then repeat to above way.

4-4. Filter Setting

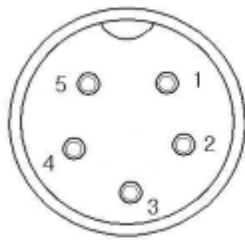
1. Adjust to VR4 inside PCB due to stabilization to output signal if you want use at happened place frequently with heavy noise.
2. If you turn clockwise, reduce to Cut-off frequency.
Min. : 16 Hz, Max. : 2 KHz

4-5. Transducer Gain Adjustment

No.	DIP SW1				Vout0~10V (Iout0~40mA)	Vout0~5V (Iout0~20mA)	Vout1~5V (Iout4~20mA)	Gain (V out = 11.12V)
	1	2	3	4	mV/V	mV/V	mV/V	
1	ON	ON	ON	ON	0.5	0.25	0.25	2,322
2	ON	ON	ON	OFF	0.54	0.27	0.27	2,042
3	ON	ON	OFF	ON	0.56	0.28	0.28	1,952
4	ON	OFF	ON	ON	0.63	0.32	0.32	1,763
5	ON	ON	OFF	OFF	0.67	0.34	0.34	1,667
6	ON	OFF	ON	OFF	0.75	0.38	0.38	1,482
7	ON	OFF	OFF	ON	0.8	0.4	0.4	1,394
8	OFF	ON	ON	ON	0.93	0.47	0.47	1,195
9	ON	OFF	OFF	OFF	1.0	0.5	0.5	1,112
10	OFF	ON	ON	OFF	1.2	0.6	0.6	916
11	OFF	ON	OFF	ON	1.3	0.65	0.65	838
12	OFF	OFF	ON	ON	1.7	0.85	0.85	651
13	OFF	ON	OFF	OFF	2.0	1.0	1.0	556
14	OFF	OFF	ON	OFF	3.0	1.5	1.5	370
15	OFF	OFF	OFF	ON	4.0	2.0	2.0	278

4-6. Analog Voltage Output

The ST Series is output to voltage of variable kind and make use of connect to input terminal of Recorder or an Oscilloscope or A/D Board etc. Or be easy to use at input of Control or a secondary transducer. The analog output-voltage has variety all types of model and output till Max 10V. The connect method is join at each terminal of **3; Vout, 5; Output GND** by a soldering iron after take Power/Output connector apart already offered.



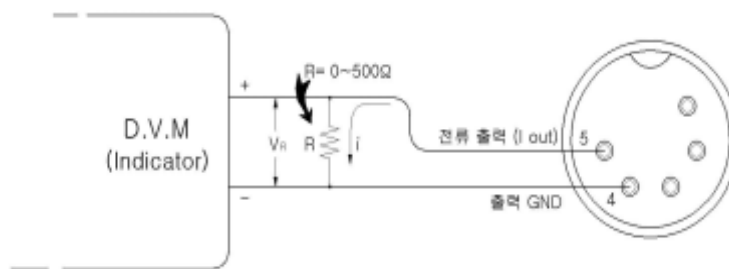
Power / Output Connector

1. Power: +24VDC
2. Power GND
3. Vout
4. Iout
5. Output GND

4-7. Analog Current Output

The ST Series is output to current of variable kind and must use to measuring equipment of exclusive current input in equipment of current received.

If measuring with general D.V.M indicator, please measure after a change to Voltage with install load resistance as follows picture.



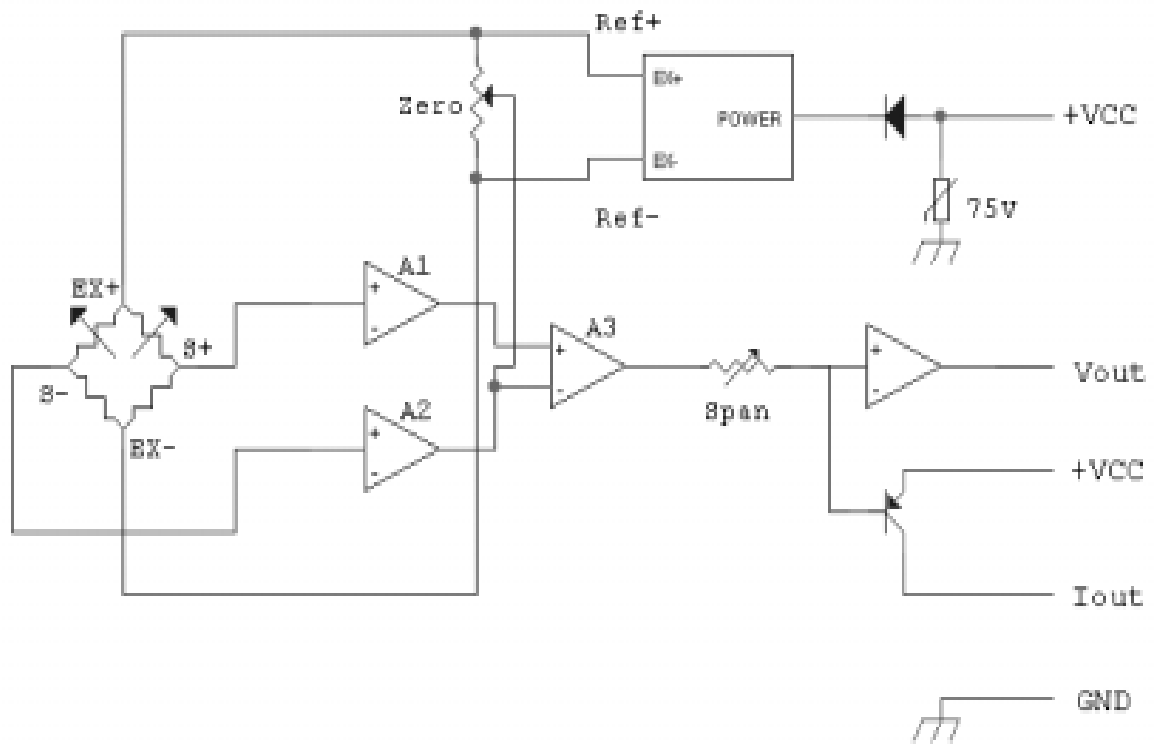
Power / Output Connector

1. Power: +24VDC
2. Power GND
3. Vout
4. Iout
5. Output GND

Ex) $I=4\text{mA}$, $R=250\Omega$ $\rightarrow V_R = 4\text{mA} \times 250\Omega = 1\text{V}$

$I=20\text{mA}$, $R=250\Omega$ $\rightarrow V_R = 20\text{mA} \times 250\Omega = 5\text{V}$

4-8. ST Series Block Diagram



WARRANTEE CERTIFICATION

This product is passed “Sewhacnm”’s strict quality test.

If there is defect of manufacturing or abnormal detection within warrantee period, please contact our Agent or Distributor with this Warrantee certificate. Then, we will repair or replace free of charge.

WARRANTEE CLAUSE

1. The Warrantee period, we can guarantee, is one(1) year from your purchasing date

2. Warrantee Exception Clause

- Warrantee period is expired.
- Any kinds of Mal-function or defection caused by Modification or Repair without Sewhacnm’s permission.
- Any kinds of Mal-function, Defection, or External damage, caused by operator
- Any kinds of Mal-function, Defection, caused by using spare part from Non-Authorized Distributor or Agent.
- Any kinds of Mal-function, Defection, caused by not following Warnings or Cautions mentioned on this manual.
- Any kinds of Mal-function, Defection caused by “Force Majeur”, like Fire, Flood.
- Without presentation of this “**Warrantee Certification**”.

3. Other

- Any kinds of “Warrantee Certification” without authorized Stamp is out of validity

Manufacturer SEWHACNM Co.,Ltd. 302, 102dong, Ssangyong 3 rd , Bucheon Techno Park,	Product	Load Cell Transmitter
	Model	ST SERIES
	Serial No.	

Samjeon-Dong, Ojeong-Gu, Bucheon City, GyungGi-Do,
KOREA
Made in KOREA

AUTHORIZED
STAMP

