

SERIES: TTS304

- LOOP POWERED
- 4-20 mA OUTPUT
- HART® PROTOCOL
- INPUT/OUTPUT GALVANICALLY ISOLATED
- THERMOCOUPLE, RTD, mV & RESISTANCE TRANSMITTER INPUTS



INTRODUCTION

The *TTS304 Series* Head-mounted Universal Temperature Transmitters provide accurate and reproducible conversion of any commonly used thermocouple sensors, Pt-100 RTDs, slide-wire transducer, mV and voltage signals to isolated industry standard 4-20 mA output. The versatility of this HART® protocol smart temperature transmitter results in lower stock holdings and greater operational flexibility.

The *TTS304 Series* has full HART® communications protocol which allows the user to quickly and easily down-load information or interrogate the device enabling the following:

- Simple re-ranging of sensor type and range.
- Easy on site re-calibration.
- Remote configuration on the 4-20 mA loop with a hand held communicator or with a HART modem.

Isolation is a standard feature, removing all ground loop effects as the input is electrically and physically isolated from the output signal.

The transmitter has very good immunity against electromagnetic interference and stands vibration according to IEC 606068-26 standard.

SPECIFICATIONS @ 23°C Ref. Temp.

Output	4...20 mA; Min: 3.8 mA; Max: 20.8 mA
Sensor Break	Output will be 3.8 mA
Linearization	Custom (programmable)
Supply Voltage	8...45 VDC
Max. Output Load	[(V supply - 7.5) / 20.8] kΩ 250 Ω minimum load for correct HART operation
In/Out Isolation	2000 VAC
Enclosure	ABS; DIN standard size
Response Time	1 sec.; with ≤5 sec. switch on delay
Stability	≤0.05% per year
Ambient	-40...+85°C; 10 to 95% RH
EMC	IEC61000-4-4: 1995 & GB/T17626.2-1998
Shock Resistance	4g; 2...150 Hz; IEC60068-26
Weight	33.5 grams

INPUT SIGNALS

Input	Range (°C)	Min. Span	Accuracy
Pt100	-200...+850	10°C	0.2°C or 0.08% rdg
Pt 500	-200...+250	10°C	0.5°C or 0.2% rdg
Pt1000	-200...+250	10°C	0.3°C or 0.12% rdg
Cu50	-50...+150	10°C	0.2°C or 0.08% rdg
Cu100	-50...+150	10°C	0.3°C or 0.12% rdg
Ni100	-60...+180	10°C	0.2°C or 0.08% rdg
Ni500	-60...+180	10°C	0.5°C or 0.2% rdg
Ni1000	-60...+150	10°C	0.3°C or 0.12% rdg
T/C J	-210...1200	50°C	0.5°C or 0.08% rdg
T/C K	-270...1372	50°C	0.5°C or 0.08% rdg
T/C B	0...1820	500°C	2°C or 0.08% rdg
T/C E	-270...1000	50°C	0.5°C or 0.08% rdg
T/C N	-270...1300	50°C	1°C or 0.08% rdg
T/C R	-50...1768	500°C	2°C or 0.08% rdg
T/C S	-50...1768	500°C	2°C or 0.08% rdg
T/C T	-270...400	50°C	0.5°C or 0.08% rdg

Input	Range	Min. Span	Accuracy
R	0...400 Ω	10 Ω	0.1 Ω or 0.08% rdg
R	0...2000 Ω	20 Ω	1.5 Ω or 0.12% rdg
R	0...10000 Ω	100 Ω	7.5 Ω or 0.20% rdg
mV	-10...75 mV	5 mV	20 μV 0.08% rdg
mV	-100...100 mV	5 mV	20 μV 0.08% rdg
mV	-100...500 mV	6 mV	30 μV 0.08% rdg
Volt	-0.1~2 V	20 mV	50 μV 0.08% rdg

DIMENSIONS

