TEMPERATURE

1000 OHM 375 PLATINUM RTD RANGEABLE TRANSMITTER *T91H, T91L, T91U SERIES*



DESCRIPTION

The Kele T91U 1000 Ω RTD rangeable transmitter is a range selectable, two-wire 4-20 mA RTD transmitter used with Type 91 1000 Ω platinum RTD sensors. The transmitter is available in six standard ranges, or it can be set for any range between -30° to 280°F (-34° to 138°C) with a minimum span of 40°F (22°C).

To adjust the **T91U**, set the DIP switches to match the desired range, and use the zero and span pots to fine tune. A high accuracy digital ohmmeter and decade box are required.

The **T91U** has a special 20 mA loop calibration test signal to provide easy system verification. Simply move the bottle plug jumper from norm to 20, and the transmitter will output a constant 20 mA. The loop-up LED provides power indication for the 4-20 mA output.

The **T91H** and **T91L** are specialty units for very high temperature and very low temperatures respectively. Both units are rangeable within their specialty limits.





Kele

T91U-13-WE-XTD

FEATURES

- DIP switch rangeable
- Loop-calibration test signal
- · Low cost
- Snap-track mounting
- Loop-powered LED indication
- Fits into card slot of ST-U91 housing
- Very high-range and low-range models availableCE approved (commercial and industrial)
- Conformal coated

SPECIFICATIONS

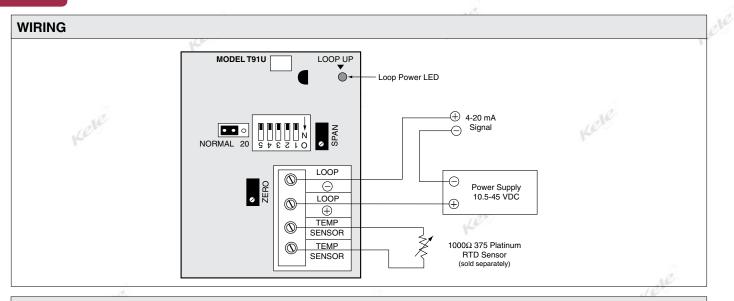
DIMENSIONS	
in (cm) 2.25 (5.72	

SPECIFICATIONS				
Supply Voltage	10.5-45 VDC	T91L		
Accuracy	0.1°F or 0.2% of span	Zero	-300° to -8°F (-184° to -22°C)	
Signal Output	4-20 mA @ 675Ω, two wire loop-	Minimum Span	40°F (4.4°C)	
	powered, except display @ 375Ω	Usable range	-300° to 32°F (-184.4° to 0°C)	
Sensor Element	1000Ω platinum TCR 0.00375	Display	Display option (XTD) 3-1/2 digit LCD,	
	$\Omega/\Omega/^{\circ}C$ RTD		NEMA 4 (IP65)	
Rangeability		Operating Temperature 0° to 140°F (-18° to 60°F)		
T91U	e l'	Operating Humidity	0% to 95% non-condensing	
Zero	-30° to 210°F (-34° to 98.9°C)	Dimensions	1"H x 1.8"W x 2.25"L	
Minimum Span	40°F (22°C)		(2.5 x 4.6 x 5.7 cm)	
Usable range	-30° to 250°F (-34.4° to 121.1°C)	Weight	0.16 lb (0.07 Kg) w/o options	
Т91Н	, , , , , , , , , , , , , , , , , , ,	Approvals	CE (EN50081-1, EN50082-1)	
Zero	200° to 960°F (93° to 515°C)		Optional CE (EN50081-2,	
Minimum Span	40°F (4.4°C)	1	EN50082-2) Industrial RF/EM	
Usable range	200° to 1000°F (93.3° to 573.8°C)		Hardened	
Ū	Ker	Warranty	1 year	

IN-STOCK ORDERS AVAILABLE TO SHIP SAME-DAY

TEMPERATURE

1000 OHM 375 PLATINUM RTD RANGEABLE TRANSMITTER **T91H**, **T91L**, **T91U SERIES**



Kele

ORDERING INFORMATION

T91U 4-20 mA RTD transmitter standard rangeability T91H 4-20 mA RTD transmitter high temperature rangeability (XR range only) T91L 4-20 mA RTD transmitter low temperature rangeability (XR range only) T91L 4-20 mA RTD transmitter low temperature rangeability (XR range only) - Commercial CE (EN50081-1 and EN50082-1) EMC Industrial CE, RF/EM hardened (EN50081-2 and EN50082-2)(Add -S to end of model number) RANGE 2 2 -20° to 140°F (-29° to 60°C) (T91U only) 3 0° to 100°F (-18° to 38°C) (T91U only) 4 30° to 240°F (-1° to 116°C) (T91U only) 12 -22° to 113°F (-30° to 45°C) (T91U only) 13 32° to 212°F (0° to 50°C) (T91U only) 14 32° to 122°F (0° to 50°C) (T91U only) XR† Special Range (See previous page for rangeability limits) SENSOR TYPE - - Transmitter only D ST-091-XW duct sensor* Ø ST-091-WW immersion sensor* with brass well WE ST-W91-F-XW immersion sensor* with stainless steel well AV ST-AV91H averaging sensor* WM Single gang weather resistant box (Mounted without sensor) WW	-	DESCRIPTION				
T91L 4-20 mA RTD transmitter low temperature rangeability (XR range only) CE CERTIFICATION - Commercial CE (EN50081-1 and EN50082-1) EMC Industrial CE, RF/EM hardened (EN50081-2 and EN50082-2)(Add -S to end of model number) RANGE 2 -20° to 140°F (-29° to 60°C) (T91U only) 3 0° to 100°F (-18° to 38°C) (T91U only) - 4 30° to 240°F (-1° to 116°C) (T91U only) - 12 -22° to 113°F (-30° to 45°C) (T91U only) - 13 32° to 212°F (0° to 50°C) (T91U only) - 14 32° to 122°F (0° to 50°C) (T91U only) - XR† Special Range (See previous page for rangeability limits) SENSOR TYPE - Transmitter only D ST-D91-XW duct sensor* - 0 ST-O91 outside air sensor* W ST-W91-S-XW immersion sensor* with brass well WE WE ST-W91-S-XW immersion sensor* with stainless steel well AV ST-AV91H averaging sensor* XTD VM Single gang weather resistant box (Mounted without sensor) - - Example: T91U-2-D Transmitter with range of -20° to 140°F (-29° to 60°C) mounted and wired in duct sensor enclosure		5,				
CE CERTIFICATION - Commercial CE (EN50081-1 and EN50082-1) EMC Industrial CE, RF/EM hardened (EN50081-2 and EN50082-2)(Add -S to end of model number) RANGE 2 -20° to 140°F (-29° to 60°C) (T91U only) 3 0° to 100°F (-18° to 38°C) (T91U only) 4 4 30° to 240°F (-1° to 116°C) (T91U only) 12 12 -22° to 113°F (-30° to 45°C) (T91U only) 13 13 32° to 212°F (0° to 50°C) (T91U only) 13 14 32° to 122°F (0° to 50°C) (T91U only) 14 32° to 122°F (0° to 50°C) (T91U only) 14 32° to 122°F (0° to 50°C) (T91U only) 14 32° to 122°F (0° to 50°C) (T91U only) 14 XR† Special Range (See previous page for rangeability limits) SENSOR TYPE - - Transmitter only D ST-D91-XW duct sensor* Ø ST-W91-E-XW immersion sensor* without well WE ST-W91-E-XW immersion sensor* without well WS ST-W91-S-XW immersion sensor* with stainless steel well AV ST-AV91H averaging sensor* XTD Digital display option for (D) duct or (W) immersion sensors XWM S	-	4-20 mA RTD transmitter high temperature rangeability (XR range only)				
Commercial CE (EN50081-1 and EN50082-1) EMC Industrial CE, RF/EM hardened (EN50081-2 and EN50082-2)(Add -S to end of model number) RANGE 2 -20° to 140°F (-29° to 60°C) (T91U only) 3 0° to 100°F (-18° to 38°C) (T91U only) 4 30° to 240°F (-1° to 116°C) (T91U only) 12 -22° to 113°F (-30° to 45°C) (T91U only) 13 32° to 212°F (0° to 100°C) (T91U only) 14 32° to 122°F (0° to 100°C) (T91U only) XR† Special Range (See previous page for rangeability limits) SENSOR TYPE				itter low temperature rangeability (XR range only)		
EMC Industrial CE, RF/EM hardened (EN50081-2 and EN50082-2)(Add -S to end of model number) RANGE 2 -20° to 140°F (-29° to 60°C) (T91U only) 3 0° to 100°F (-18° to 38°C) (T91U only) 4 4 30° to 240°F (-1° to 116°C) (T91U only) 12 12 -22° to 113°F (-30° to 45°C) (T91U only) 13 32° to 212°F (0° to 100°C) (T91U only) 14 32° to 122°F (0° to 50°C) (T91U only) XR† Special Range (See previous page for rangeability limits) SENSOR TYPE - Transmitter only D ST-D91-XW duct sensor* 0 ST-O91 outside air sensor* W ST-W91-XW immersion sensor* with brass well WE ST-W91-XW immersion sensor* with stainless steel well AV ST-AV91H averaging sensor* XTD Digital display option for (D) duct or (W) immersion sensors XWM Single gang weather resistant box (Mounted without sensor) F91U - - C Example: T91U-2-D Transmitter with range of -20° to 140°F (-29° to 60°C) mounted and wired in duct sensor enclosure * Indicate at time of order * Indicate at time of order * Indicate at time of order	CE					
RANGE 2 -20° to 140°F (-29° to 60°C) (T91U only) 3 0° to 100°F (-18° to 38°C) (T91U only) 4 30° to 240°F (-1° to 116°C) (T91U only) 12 -22° to 113°F (-30° to 45°C) (T91U only) 13 32° to 212°F (0° to 100°C) (T91U only) 14 32° to 122°F (0° to 50°C) (T91U only) 15 Special Range (See previous page for rangeability limits) SENSOR TYPE - Transmitter only D ST-091 outside air sensor* 0 ST-091 outside air sensor* W ST-W91-XW immersion sensor* with brass well WE ST-W91-F-XW immersion sensor* with stainless steel well AV ST-AV91H averaging sensor* XTD Digital display option for (D) duct or (W) immersion sensors XWM Single gang weather resistant box (Mounted without sensor) "91U - - D Example: T91U-2-D Transmitter with range of -20° to 140°F (-29° to 60°C) mounted and wired in duct sensor enclosure * Indicate at time of order *				· · · · · · · · · · · · · · · · · · ·		
2 -20° to 140°F (-29° to 60°C) (T91U only) 3 0° to 100°F (-18° to 38°C) (T91U only) 4 30° to 240°F (-1° to 116°C) (T91U only) 12 -22° to 113°F (-30° to 45°C) (T91U only) 13 32° to 212°F (0° to 100°C) (T91U only) 14 32° to 122°F (0° to 50°C) (T91U only) 14 32° to 122°F (0° to 50°C) (T91U only) 14 32° to 122°F (0° to 50°C) (T91U only) XR [†] Special Range (See previous page for rangeability limits) SENSOR TYPE — Transmitter only D ST-D91-XW duct sensor* O ST-O91 outside air sensor* W ST-W91-E-XW immersion sensor* with brass well WE ST-W91-S-XW immersion sensor* with stainless steel well AV ST-AV91H averaging sensor* XTD Digital display option for (D) duct or (W) immersion sensors XWM Single gang weather resistant box (Mounted without sensor) F91U — 2 - D Example: T91U-2-D Transmitter with range of -20° to 140°F (-29° to 60°C) mounted and wired in duct sensor enclosure * Indicate at time of order * Indicate at time of order	EM		,	RF/EM hardened (EN50081-2 and EN50082-2)(Add -S to end of model number)		
3 0° to 100°F (-18° to 38°C) (T91U only) 4 30° to 240°F (-1° to 116°C) (T91U only) 12 -22° to 113°F (-30° to 45°C) (T91U only) 13 32° to 212°F (0° to 100°C) (T91U only) 14 32° to 122°F (0° to 50°C) (T91U only) 14 32° to 122°F (0° to 50°C) (T91U only) XR [†] Special Range (See previous page for rangeability limits) SENSOR TYPE — Transmitter only D ST-D91-XW duct sensor* O ST-O91 outside air sensor* W ST-W91-XW immersion sensor* with brass well WE ST-W91-E-XW immersion sensor* with out well WS ST-W91-S-XW immersion sensor* with stainless steel well AV ST-AV91H averaging sensor* XTD Digital display option for (D) duct or (W) immersion sensors XWM Single gang weather resistant box (Mounted without sensor) F91U - _ _ Po Example: T91U-2-D Transmitter with range of -20° to 140°F (-29° to 60°C) mounted and wired in duct sensor enclosure * Indicate at time of order		RAN	GE			
4 30° to 240°F (-1° to 116°C) (T91U only) 12 22° to 113°F (-30° to 45°C) (T91U only) 13 32° to 212°F (0° to 100°C) (T91U only) 14 32° to 122°F (0° to 50°C) (T91U only) 14 32° to 122°F (0° to 50°C) (T91U only) 14 32° to 122°F (0° to 50°C) (T91U only) XR [†] Special Range (See previous page for rangeability limits) SENSOR TYPE - Transmitter only D ST-091 outside air sensor* W ST-091 outside air sensor* W ST-W91-XW immersion sensor* with brass well WE ST-W91-S-XW immersion sensor* with stainless steel well AV ST-AV91H averaging sensor* XTD Digital display option for (D) duct or (W) immersion sensors XWM Single gang weather resistant box (Mounted without sensor) "91U - - 2 - D Example: T91U-2-D Transmitter with range of -20° to 140°F (-29° to 60°C) mounted and wired in duct sensor enclosure		2				
12 22° to 113°F (-30° to 45°C) (T91U only) 13 32° to 212°F (0° to 100°C) (T91U only) 14 32° to 122°F (0° to 50°C) (T91U only) 14 32° to 122°F (0° to 50°C) (T91U only) XR [†] Special Range (See previous page for rangeability limits) SENSOR TYPE - Transmitter only D ST-D91-XW duct sensor* O ST-O91 outside air sensor* W ST-W91-XW immersion sensor* with brass well WE ST-W91-E-XW immersion sensor* without well WS ST-W91-S-XW immersion sensor* with stainless steel well AV ST-AV91H averaging sensor* XTD Digital display option for (D) duct or (W) immersion sensors XWM Single gang weather resistant box (Mounted without sensor) "91U - - 2 - D Example: T91U-2-D Transmitter with range of -20° to 140°F (-29° to 60°C) mounted and wired in duct sensor enclosure		-		00°F (-18° to 38°C) (T91U only)		
13 32° to 212°F (0° to 100°C) (T91U only) 14 32° to 122°F (0° to 50°C) (T91U only) XR [†] Special Range (See previous page for rangeability limits) SENSOR TYPE — Transmitter only D ST-D91-XW duct sensor* O ST-O91 outside air sensor* W ST-W91-XW immersion sensor* with brass well WE ST-W91-S-XW immersion sensor* with out well WS ST-W91-S-XW immersion sensor* with stainless steel well AV ST-AV91H averaging sensor* XTD Digital display option for (D) duct or (W) immersion sensors XWM Single gang weather resistant box (Mounted without sensor) F91U — 2 - D Example: T91U-2-D Transmitter with range of -20° to 140°F (-29° to 60°C) mounted and wired in duct sensor enclosure		-				
14 32° to 122°F (0° to 50°C) (T91U only) XR [†] Special Range (See previous page for rangeability limits) SENSOR TYPE — Transmitter only D ST-D91-XW duct sensor* O ST-O91 outside air sensor* W ST-W91-XW immersion sensor* with brass well WE ST-W91-E-XW immersion sensor* without well WS ST-W91-S-XW immersion sensor* with stainless steel well AV ST-AV91H averaging sensor* XTD Digital display option for (D) duct or (W) immersion sensors XWM Single gang weather resistant box (Mounted without sensor) F91U — 2 - D Example: T91U-2-D Transmitter with range of -20° to 140°F (-29° to 60°C) mounted and wired in duct sensor enclosure * Indicate at time of order						
XR [†] Special Range (See previous page for rangeability limits) SENSOR TYPE — Transmitter only D ST-D91-XW duct sensor* O ST-O91 outside air sensor* W ST-W91-XW immersion sensor* with brass well WE ST-W91-E-XW immersion sensor* without well WS ST-W91-S-XW immersion sensor* with stainless steel well AV ST-AV91H averaging sensor* XTD Digital display option for (D) duct or (W) immersion sensors XWM Single gang weather resistant box (Mounted without sensor) ************************************						
SENSOR TYPE — Transmitter only D ST-D91-XW duct sensor* O ST-091 outside air sensor* W ST-W91-XW immersion sensor* with brass well WE ST-W91-E-XW immersion sensor* without well WS ST-W91-S-XW immersion sensor* with stainless steel well AV ST-AV91H averaging sensor* XTD Digital display option for (D) duct or (W) immersion sensors XWM Single gang weather resistant box (Mounted without sensor) F91U — 2 Pilue - 2 Pilue - 2 D Example: T91U-2-D Transmitter with range of -20° to 140°F (-29° to 60°C) mounted and wired in duct sensor enclosure Tindicate at time of order 1						
 Transmitter only ST-D91-XW duct sensor* ST-O91 outside air sensor* ST-O91 outside air sensor* ST-O91 outside air sensor* with brass well WE ST-W91-XW immersion sensor* without well WS ST-W91-S-XW immersion sensor* with stainless steel well AV ST-AV91H averaging sensor* XTD Digital display option for (D) duct or (W) immersion sensors XWM Single gang weather resistant box (Mounted without sensor) Example: T91U-2-D Transmitter with range of -20° to 140°F (-29° to 60°C) mounted and wired in duct sensor enclosure 						
D ST-D91-XW duct sensor* O ST-O91 outside air sensor* W ST-W91-XW immersion sensor* with brass well WE ST-W91-E-XW immersion sensor* without well WS ST-W91-S-XW immersion sensor* with stainless steel well AV ST-AV91H averaging sensor* XTD Digital display option for (D) duct or (W) immersion sensors XWM Single gang weather resistant box (Mounted without sensor) F91U - 2 - D Example: T91U-2-D Transmitter with range of -20° to 140°F (-29° to 60°C) mounted and wired in duct sensor enclosure † Indicate at time of order 1						
O ST-O91 outside air sensor* W ST-W91-XW immersion sensor* with brass well WE ST-W91-E-XW immersion sensor* without well WS ST-W91-S-XW immersion sensor* with stainless steel well AV ST-AV91H averaging sensor* XTD Digital display option for (D) duct or (W) immersion sensors XWM Single gang weather resistant box (Mounted without sensor) F91U - 2 - D Example: T91U-2-D Transmitter with range of -20° to 140°F (-29° to 60°C) mounted and wired in duct sensor enclosure † Indicate at time of order *			_	,		
W ST-W91-XW immersion sensor* with brass well WE ST-W91-E-XW immersion sensor* without well WS ST-W91-E-XW immersion sensor* with stainless steel well AV ST-AV91H averaging sensor* XTD Digital display option for (D) duct or (W) immersion sensors XWM Single gang weather resistant box (Mounted without sensor) F91U - 2 - D Example: T91U-2-D Transmitter with range of -20° to 140°F (-29° to 60°C) mounted and wired in duct sensor enclosure * Indicate at time of order			_			
WE ST-W91-E-XW immersion sensor* without well WS ST-W91-S-XW immersion sensor* with stainless steel well AV ST-AV91H averaging sensor* XTD Digital display option for (D) duct or (W) immersion sensors XWM Single gang weather resistant box (Mounted without sensor) F91U - P - </th <th></th> <th></th> <th>-</th> <th></th>			-			
WS ST-W91-S-XW immersion sensor* with stainless steel well AV ST-AV91H averaging sensor* XTD Digital display option for (D) duct or (W) immersion sensors XWM Single gang weather resistant box (Mounted without sensor) T91U - P - D Example: T91U-2-D Transmitter with range of -20° to 140°F (-29° to 60°C) mounted and wired in duct sensor enclosure † Indicate at time of order						
AV ST-AV91H averaging sensor* XTD Digital display option for (D) duct or (W) immersion sensors XWM Single gang weather resistant box (Mounted without sensor) P91U - P - D Example: T91U-2-D Transmitter with range of -20° to 140°F (-29° to 60°C) mounted and wired in duct sensor enclosure † Indicate at time of order						
XTD Digital display option for (D) duct or (W) immersion sensors XWM Single gang weather resistant box (Mounted without sensor) '91U - - 2 <						
YWM Single gang weather resistant box (Mounted without sensor) '91U - 2 - D Example: T91U-2-D Transmitter with range of -20° to 140°F (-29° to 60°C) mounted and wired in duct sensor enclosure 'Indicate at time of order * Indicate at time of order				0 0		
T91U - D Example: T91U-2-D Transmitter with range of -20° to 140°F (-29° to 60°C) mounted and wired in duct sensor enclosure [†] Indicate at time of order				• • • • • • • • • • • • • • • • • • • •		
1910 – <u>1</u> – <u>2</u> – <u>D</u> mounted and wired in duct sensor enclosure			XWM	Single gang weather resistant box (Mounted without sensor)		
	191U —					

RELATED PRODUCTS

AS2PW055P000XX1 DCP-1.5-W DCPA-1.2 S241HC Low temperature probe, limited to -50°F (-46°C) Power supply, 24 VAC IN to 24 VDC OUT Power supply, 120 VAC IN to 24 VAC/24 VDC OUT High temperature probe, limited to 932°F (500°C)

IEMPERATURE

September 2016