UNIVERSAL ANALOG TRANSDUCERS

UAT-1, UAT-2 SERIES

DESCRIPTION

The **Kele UAT-1** and **UAT-2 Series universal analog transducers** are used for analog signal conversion or signal scaling. They will accept a DC voltage, current, or resistive input signal and output a non-isolated voltage or current output. These transducers can be direct or reverse acting and are easily field calibrated to meet a wide variety of applications.The **UAT-1** is furnished in a unique slim-line design housing, which saves panel space, and can be ordered with an optional DIN rail mounting adapter. The **UAT-2** is a snap-track mounted version, and its operation is identical to the **UAT-1**.

UAT-1

FEATURES

- ***DC voltage, current, or resistive input***
- ***Inputs from 0-20 VDC, 0-40 mA or 0-10 kΩ***
- ***Input and output jumper selectable and easily field calibrated***
- ***Outputs from 0-18 VDC or 0-20 mA***
- ***Direct or reverse acting, jumper selectable***
- ***Reference voltage and current available to power an input device or sensor***

UAT-2

SPECIFICATIONS

Supply Voltage	24 VAC ±10%, half-wave; or 24 VDC ±10%
Supply Current	50 mA maximum @ 24 VDC; 100 mA maximum @ 24 VAC
Input	Jumper selectable and adjustable; Voltage ranges from 0-1.09 VDC (w/minimum span 55 mV) to 0-20 VDC (w/minimum span 1V); Current ranges from 0-4 mA (minimum span 0.2 mA) to 0-40 mA (minimum span 2.2 mA); Three-wire potentiometer ranges from 0-100Ω to 0-10 kΩ; Two-wire variable resistance ranges from 0-100Ω to 0-5 kΩ
Input Signal	DC voltage, current, or resistance
Input Impedance	250Ω @ 0-4 mA & 0-40 mA; 156kΩ @ 0-1.09 VDC & 0-10.9 VDC; 293kΩ @ 0-2 VDC & 0-20 VDC
Linearity	<0.1% of span
Output	Jumper selectable and fully adjustable zero/span
Voltage	0-18 VDC @ > 900Ω 0-10 VDC @ > 500Ω
Current	0-20 mA @ < 650Ω
Output Current	For sensor excitation only, jumper selectable; 1.2 mA @ 5 kΩ maximum, 5 mA @ 1.5 kΩ maximum, 10 mA @ 750Ω maximum
Output Voltage	For sensor excitation only, jumper selectable; 1.2 VDC @ 12 mA maximum (100Ω minimum), 5 VDC @ 12 mA maximum (417Ω minimum), 10 VDC @ 12 mA maximum (834Ω minimum)
Wiring Terminations	Screw terminals
Action	Direct or reverse acting
Operating Temperature	32° to 158°F (0° to 70°C)
Operating Humidity	5% to 95% RH (non-condensing)
Dimensions	
UAT-1	3.0"H x 4.8"W x 1.5"D (8.6 x 5.1 x 12.4 cm)
UAT-2	3.3"H x 4.6"W x 1.0"D (8.3 x 11.8 x 2.5 cm)
Weight	0.8 lb (0.36 kg)
Warranty	18 months

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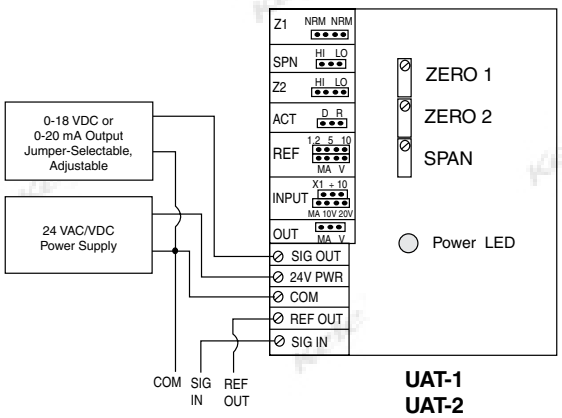
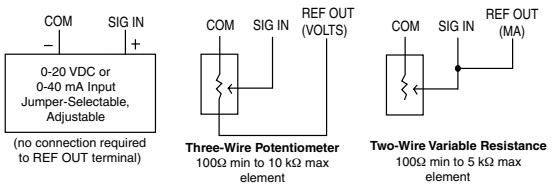
WIRING



UAT-1
UAT-2



INPUT JUMPERS

INPUT SIGNAL RANGE	INPUT JUMPER POSITIONS		REF JUMPERS	
0-1.09V, 55 mV min span	÷ 10	10V	If REF output is required for external sensor excitation, jumper for appropriate voltage or current source.If not used, set jumpers to:	
0-2V, 100 mV min span	÷ 10	20V		
0-10.9V, 550 mV min span	x 1	10V		
0-20V, 1V min span	x 1	20V		
0-4 mA, 0.22 mA min span	÷ 10	mA		
0-40 mA, 2.2 mA min span	x 1	mA	V	10
Three-wire potentiometer **10V ref (834Ω min)**	x 1	(None)	V	10
Three-wire potentiometer **5V ref (417Ω min)**	x 1	(None)	V	5
Three-wire potentiometer **1.2V ref (100Ω min)**	x 1	(None)	V	1.2
Two-wire variable resistance **10 mA ref (750Ω max)**	If (ref mA) x (max Ω) ≥1.09V		mA	10
Two-wire variable resistance **5 mA ref (1.5 kΩ max)**	x 1	(None)	mA	5
Two-wire variable resistance **1.2 mA ref (5 kΩ max)**	If (ref mA) x (max Ω) ≤1.09V	÷ 10 (None)	mA	1.2

CALIBRATION

1. Set output OUT jumper to V or MA as desired.
2. Set INPUT jumpers for type and range of input signal present. See “Input Jumpers” table above.
3. If using the reference output for sensor excitation, set the two REF jumpers for the proper output type and value. Choices are 1.2V, 5V, 10V, 1.2 mA, 5 mA, 10 mA. If not using the reference output, jumper as a voltage output.
4. Set action ACT jumper to direct D or reverse R as desired.
5. Set span jumper SPN to LO. Turn SPAN pot clockwise 25 turns.
6. Remove both Z1 jumpers. Trim ZERO 1 pot for minimum desired output value. Presence/absence of input signal has no effect on this adjustment.
7. Reinstall both Z1 jumpers. Set Z2 jumper to LO position.
8. Apply an input signal value that is to produce minimum output. Trim ZERO 2 pot for minimum output value (same value set in step 6). If desired value cannot be achieved, remove Z2 jumper and trim ZERO 2 pot again. If desired value is still not achieved, place Z2 jumper in HI position and trim ZERO 2 pot again.
9. Apply input signal value that is to produce maximum output. Trim SPAN pot for maximum output value. If SPAN pot does not go high enough, move the SPN jumper from LO position to HI position.
10. Repeat steps 8 and 9 until both minimum and maximum output values are correct. Typically, just one more pass is sufficient.
11. Apply a midpoint input signal. Verify that output goes to center of output range.

ORDERING INFORMATION

MODEL	DESCRIPTION
UAT-1C	Universal analog enclosed transducer
UAT-1-C-47	Universal analog enclosed transducer with DIN rail adapter
UAT-2C	Universal analog snap-track mounted transducer

NOTE: These units are calibrated at the factory. Specify input and output when ordering.

RELATED PRODUCTS

UCM-SPA Setpoint potentiometer, 0-10 kΩ, three-wire potentiometer on stainless steel plate for remote mounting, 0-100% setpoint