



TRANSDUCERS

ELECTRONIC / PNEUMATIC TRANSDUCER

MODEL UCP-422

DESCRIPTION

The **Model UCP-422 Electronic/Pneumatic Transducer** provides low-cost pneumatic control of valves, dampers, or other pneumatic devices. The **Model UCP-422** consists of a totally-enclosed transducer with provisions for optional DIN rail or surface mounting in either of two planes. Externally-mounted pneumatic filters are not required. Quick-disconnect terminals provide easy wiring removal for servicing. When DIN rail mounting is used, this compact controller requires only a 4"H x 2"W (10.2 x 5.1 cm) mounting area, providing efficient use of panel space.

OPERATION

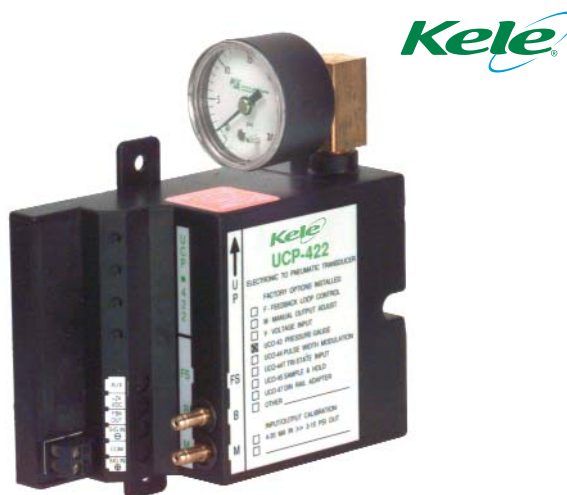
The **Model UCP-422** accepts a 4-20 mA signal and outputs 3-15 psig (20.7-103.4 kPa). Used in its base configuration, it requires no power supply for controlling pneumatic devices. Upon a loss of signal or power, the **Model UCP-422** will eventually bleed the pressure in the branch line. This transducer is well suited for the control of small to medium volume loads, such as small to medium pneumatic actuators. Large volume loads, such as large pneumatic actuators or long tubing runs may also be controlled but will exhibit slower response time.

FEATURES

- **Low cost**
- **Slim-line mounting to save panel space**
- **Universal mounting tabs**
- **Totally enclosed**
- **1/4" (0.64 cm) barbed tube connectors**
- **Quick-disconnect terminals**
- **Loop-powered control (base model)**
- **No external filter required**
- **Excellent linearity**
- **Low hysteresis**
- **No calibration required**

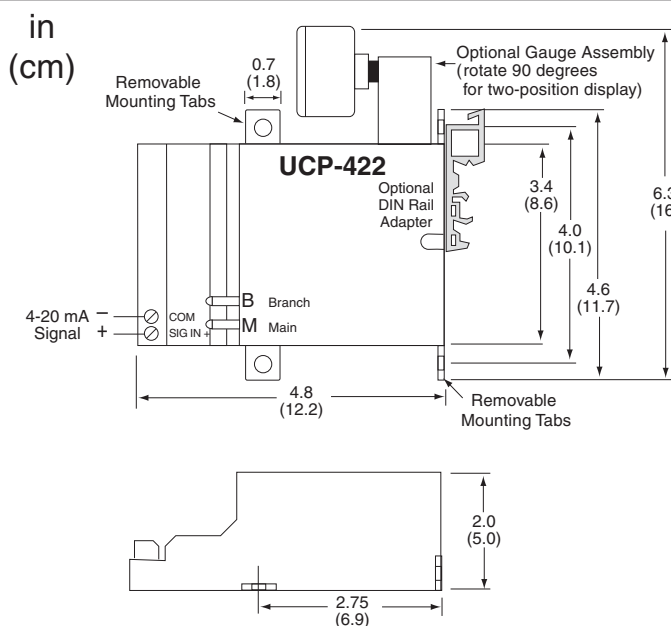
OPTIONS

- **DIN rail mounting**
- **Pressure gauge**
- **PWM input**
- **Tri-state input**
- **Feedback and limited span adjustment**
- **Failsafe**
- **Manual output adjustment**



Shown with Optional Pressure Gauge

DIMENSIONS / WIRING / PIPING



SPECIFICATIONS

Supply voltage	
UCP-422 without options	None, loop-powered
UCP-422 with internal options	24 VAC/VDC $\pm 10\%$ @ 180 mA max (half-wave)
Input impedance	
UCP-422 without options	500 Ω nominal
Max pressure	25 psig (172.4 kPa)
Air consumption	0.008 scfm @ 20 psig (3.8 cm ³ /sec @ 137.9 kPa)

Air capacity	515 scim @ 20 psig (141 cm ³ /sec @ 137.9 kPa)
Temp	32° to 122°F (0° to 50°C)
Humidity	5% to 95% RH non-condensing
Output	3-15 psig (20.7-103.4 kPa)
Input	4-20 mA
Linearity	2% of span
Hysteresis	1% of span
Weight	1.4 lb max (0.64 kg)
Warranty	18 months



INSTALLATION / WIRING / CHECKOUT

Installation

Mount the **UCP-422** inside a NEMA 1 control panel in a clean, dry environment. Barbed fittings are provided for terminating 1/4" (0.64 cm) plastic tubing. The **UCP-422** must be mounted in an upright position (refer to arrow on unit). For best results, the transducer should be mounted within five degrees of the upright position.

Wiring

Make all electrical connections in accordance with job wiring diagrams and in compliance with national and local electrical codes. Wiring terminations are made on screw terminals labeled SIG IN + and COM. Other terminals are provided where options are specified (See options for **UCP-422** on the following pages).

Checkout

Verify with a meter that a 4-20 mA DC signal is present and that polarity is correct. Verify that 20 psig (137.9 kPa) main air is present. Be sure the **UCP-422** is mounted in the upright position. Note: This is a rough functional check only. The **UCP-422** is a highly accurate device, and laboratory quality meters and gauges are required to properly check calibration.

To check transducer operation:

1. Adjust the input signal to 20 mA (or appropriate max DC voltage input). Branch pressure should be 15 psig (103.4 kPa).
2. Adjust the input signal to 4 mA (or appropriate min DC voltage input). Branch pressure should be 3 psig (20.7 kPa).

CAUTION: The Model UCP-422 uses parts that can be damaged by supply air containing synthetic compressor oil

vapor, acid fumes, or other corrosive vapors. Synthetic compressor oils must not be used. Standard control air filtering practices should be observed:

- Supply air must be dried, oil-separated, and filtered using a refrigerated air dryer, a particulate filter, and a coalescing type filter.
- The system must be properly maintained such that all particles larger than 0.03 microns are filtered out and that less than 0.1 ppm oil vapor exists.
- At the compressor, using an absorbent pre-filter followed by a coalescing oil removal filter, such as the K-337 or K-339, is recommended.
- Prior to the installation of any UCP-422, using a Model A-4000-120 oil-indicating device to determine the

ORDERING INFORMATION

MODEL	DESCRIPTION
UCP-422	Electronic/Pneumatic transducer, 4-20 mA / 3-15 psig (20.7-103.4 kPa)
OPTIONS (for more information on each option, see the following catalog pages)	
F	Feedback loop control allows remote electronic readout of the output pressure. Units equipped with feedback loop control may be calibrated between 3 and 15 psig. Special input/output calibrations should be specified at time of order entry (i.e., 4-20 mA/8-13 psig). (factory-installed option only)
M	Loop-powered manual adjust
M2	24V-powered manual adjust
Manual output adjust allows easy checkout and manual selection of the output pressure (factory-installed option only)	
V#	Voltage input V1 : 1-5V, V2 : 2-10V, V3 : 3-15V (factory-installed option only)
43	UCO-43 Pressure gauge indication (0-30 psig/0-200 kPa) - allows for local pressure indication without giving up valuable panel space (factory-installed option only)
44	UCO-44 Pulse-width modulation - features selectable pulse-width time bases of 0.1-2.65, 5.2, 12.85, 25.6, or 0.59-2.93 sec (factory-installed option only)
44T	UCO-44T Tri-state input - allows variable pneumatic output control based on a selectable tri-state input time base (factory-installed option only)
47	UCO-47 DIN rail mounting adapter - allows the UCP-422 to be mounted along with other devices on the same rail (factory-installed option only)

UCP-422 - **M** - **43** - **47** **Example:** **UCP-422-M-43-47** Electronic/Pneumatic transducer, 4-20 mA to 3-15 psig, manual output adjust, pressure gauge, DIN rail

RELATED PRODUCTS

EP3

Air valve (to allow a back-up device to assume control upon a system failure)