



Electropneumatic Transducers (I/P)

NCP1 Series



Part No. [NCP1-20-315N](#)



See www.AutomationDirect.com for a wide variety of fitting options

NITRA® NCP1 Series electropneumatic transducers (I/P) convert a 4-20 mA current signal(I) from a PLC or other controller to a linear pneumatic output pressure(P). Used in paper and paper converting, food and drug, petrochemical, HVAC, textile, and energy management industries, the NCP1 Series provides highly reliable and repeatable operation of pneumatic valve positioners, valve actuators, air cylinders, damper and louver actuators, web tensioners, clutches and brakes. The NCP1 Series is available in several output pressure ranges and includes an integral volume booster for high flow applications.

The NCP1 transducer housing can be direct or bracket mounted, comes with additional output ports for use with a pressure gauge, a 1/2" NPT female conduit connection with wire leads, and is NEMA 4X (IP65) rated for installation in NEMA 4X (IP65) environments. The NCP1 Series comes standard with Factory Mutual (FM) approval for intrinsically safe applications.

Features

- 4-20 mA input compatible with PLCs and other controllers
- Several output pressure ranges applicable for industrial pneumatic and process control applications
- Additional output ports for use with a pressure gauge
- 1/2" NPT female conduit connection with wire leads
- Direct or bracket mounting (bracket included)
- Zero and span adjustments
- Integrated volume booster
- Low air consumption
- Split ranging (3-15 psig model)
- FM Approved for Hazardous Locations
- Made in the USA



Made
in the
USA

NCP1 Series I/P Transducers					
Part Number	Price	Weight (lbs)	Input	Output Range	
				psig	bar
NCP1-20-315N	\$422.00	2.5	4-20 mA	3-15	0.2-1.0
NCP1-20-327N	\$422.00	2.5	4-20 mA	3-27	0.2-1.9
NCP1-20-630N	\$422.00	2.5	4-20 mA	6-30	0.4-2.0
NCP1-20-260N	\$406.00	2.5	4-20 mA	2-60*	0.14-4.0
NCP1-20-3120N	\$406.00	2.5	4-20 mA	3-120*	0.2-8.0

* Output shown is as calibrated at the factory. Large span adjustment capability allows recalibration to achieve output ranges of 3-35 psig (0.2-2.4 bar) with 2-60 psig unit or 3-145 psig (0.2-10 bar) with 3-120 psig unit.



Electropneumatic Transducers (I/P)

NCP1 Series

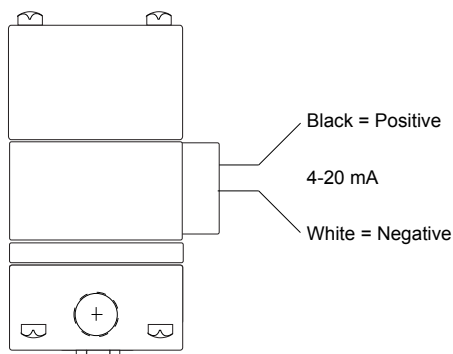
NCP1 Series I/P Transducers					
Part No.	NCP1-20-315N	NCP1-20-327N	NCP1-20-630N	NCP1-20-260N	NCP1-20-3120N
Functional Specifications					
Input	4-20 mA				
Outputs (psig - bar)	3-15* (0.2-1.0)	3-27 (0.2-1.8)	6-30 (0.4-2.0)	2-60 (0.14-4.0)	3-120 (0.2-8.0)
Supply Pressure (psig - bar)	18 min - 100 max (1.2 min - 6.7 max)	30 min - 100 max (2.0 min - 6.7 max)	33 min - 100 max (2.2 min - 6.7 max)	65 min - 150 max (4.3 min - 10.0 max)	125 min - 150 max (8.3 min - 10.0 max)
Air Consumption	0.05 scfm (1.4 NI/min) midrange typical			0.07 scfm (2 NI/min) midrange typical	
Flow Capacity	4.5 scfm (127 NI/min) at 25 psig (1.7 bar) supply 12.0 scfm (340 NI/min) at 100 psig (6.8 bar) supply			20.0 scfm (566 NI/min) at 150 psig (10.5 bar) supply	
Exhaust Capacity	2 scfm (56.6 NI/min) at 5 psig (0.34 bar) above 20 psig (1.3 bar) setpoint			7 scfm (198 NI/min) at 10 psig (0.7 bar) above 20 psig (1.3 bar) setpoint	
Temperature Limits	-20°F to +140°F (-30°C to +60°C)				
Impedance	180 Ohms	220 Ohms	220 Ohms	225 Ohms	260 Ohms
Performance Specifications**					
Linearity	<± 0.75% of span			<± 1.5% of span typical, ± 2.0% max.	
Hysteresis and Repeatability	< 1.0% of span; < 0.5% of span			< 0.5% of span; < 0.5% of span	
Supply Pressure Sensitivity	<± 0.1% of span per psig (<± 0.15% of span per 0.1 bar)			<± 0.04% of span per 1.0 psig (0.07 bar)	
Physical Specifications					
Pneumatic Port Sizes	1/4" NPT female				
Media	Oil free, clean dry air filtered to 40 micron				
Electrical Connections	Conduit 1/2" NPT female with 12" wire leads				
Mounting	Direct or bracket (bracket included)				
Housing	Chromate-treated aluminum with epoxy paint. NEMA 4X (IP65)				
Elastomers	Buna-N				
Trim	Stainless steel; brass; zinc-plated steel				
Environmental Ratings	NEMA 4X / IP65				
Approvals	FM (Haz-Loc)***				

* Can be recalibrated to provide 3-9 psig or 9-15 psig for split ranging applications.

** The unit must be calibrated in the plane it is mounted in.

*** To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

Wiring





A detailed cross-sectional diagram of a piezoelectric injector. The diagram shows the internal components and fluid paths. Labels with green leader lines point to the following parts:

- Magnet**: Located at the top, surrounding the coil.
- Coil**: A central component that converts electrical energy into mechanical motion.
- Circuit Board**: Positioned below the coil, providing electrical connections.
- Flexure**: A component that translates the coil's movement into the opening and closing of the valve.
- Nozzle**: The tip through which the fuel is sprayed.
- Fixed Orifice**: A small opening in the nozzle assembly.
- Exhaust Port**: The exit point for the exhaust gas.
- Exhaust Valve**: A valve that controls the flow of exhaust gas.
- Supply Valve**: A valve that controls the flow of fuel into the chamber.

A legend on the right side of the diagram uses different shading patterns to represent various pressure levels:

- Pilot Pressure**: Represented by a light gray square.
- Supply Pressure**: Represented by a square with diagonal hatching.
- Atmospheric Pressure**: Represented by a medium gray square.
- Output Pressure**: Represented by a dark gray square.

inches [mm]