



**MYKO**  
Electronics Pvt. Ltd.

# Transducers series 500MK

Electro-pneumatic (I/P - E/P) Current / Voltage to Pressure



MYKO 500 MK Series transducers are ideally used to convert current or voltage input signal to a nearly proportional pneumatic output pressure. This versatile instrument is rugged and reliable force balance transducers for use in both process control and industrial applications, for standard process control applications which typically utilise 3 to 15psig output and industrial & high pressure application which typically utilise pressure output up to 120 psig.

MYKO 500MK Series transducers combines low cost, high accuracy and minimum air consumption with field proven technology. Versatile design features and rugged, compact housing with a choice of CMRI and ATEX\* approved versions for explosion proof or intrinsically safe operation when used with a suitable barrier.

## Principle of Operation

MYKO 500 MK Series transducer is a force balance device in which, when electrical current is passed through the coil of transducer magnetic field is created which acts on the magnet assembly, causing the anvil & diaphragm to move away from or forward the nozzle (flapper nozzle) depending on the direction of current flow. Motion at the nozzle assembly is proportional to the amount of current passing through the coil.

The flapper/anvil move away from or forward towards the nozzle creates back pressure which acts as pilot pressure to an integral booster relay. when input electrical current increases (or decreases for reverse acting) causes proportional output pressure increases.

Zero and Span are calibrated by turning easily accessible adjusting screws on the front face of the unit. The zero adjusting screw causes the nozzle to move relative to the flapper/anvil. The span adjusting screw is a potentiometer that limits the current through the coil. A thermistor circuit in series with the coil provides temperature compensation.

## Split Ranging

if split ranging is required the 4-20 mA input and 3-15 output version (Myko part no. MY-501) can be recalibrated to provide 3-9 psig or 9-15 psig output.

## Mounting

The MYKO 500 MK series transducers can be pipe, panel or bracket mounted in any position. Position other than vertical will require recalibration of the zero and span adjustment. Transducers should be mounted in a vibration-free area.

## Field Reversible

All MYKO 500MK series transducers are calibrated at the factory for direct acting operation but may be used in reverse acting mode by reversing the polarity of signal leads and recalibrating. When calibrated for reverse acting application it provide a minimum of their full rated output pressure (i.e. 3 psig) upon input signal failure. transducers can be pipe, panel or bracket mounted in any position. Position other than vertical will

## Integrated Characteristics

- Compact Design.
- Low Air Consumption.
- Integral Volume Booster-flow capacity up to 20 SCFM is boosted by the built in Volume booster.
- Field Reversible – Output provides inversely proportional to input signal.
- Flexible Adjustments of Zero & Span.
- Standard Process Inputs.
- Split Ranging
- NEMA 4X (Ip65) Enclosure - Optional

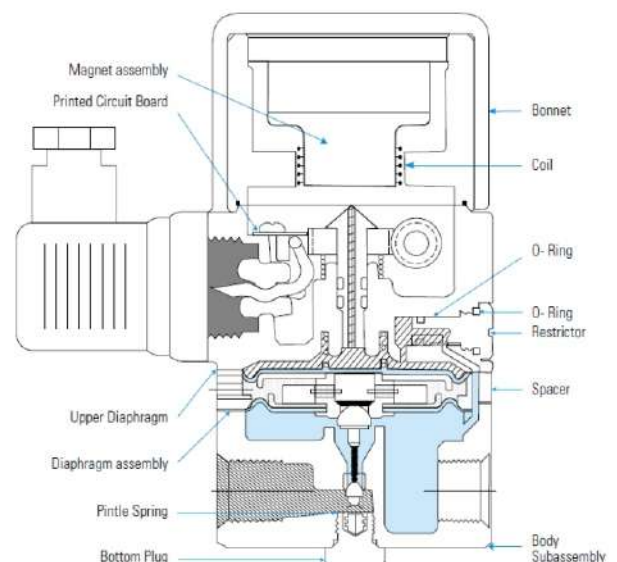
## Application

500MK Series transducers converts electrical signal to a pneumatic output which can be used to operate the followings:

- Valve, Valve-Actuators,
- Damper and Louver Actuators
- Valve Positioners
- Air-Cylinders
- Relays
- Clutches
- Web Tensioners and Brakes

## Used in:

- Petrochemical Processing Systems
- Energy Management
- HVAC Systems
- Textile Processing Systems
- Pharmaceutical Processing System
- Clutches
- Pulp and Paper Handling Controls



Specifications	Low Output Range (up to 30 psig)	High Output Range (up to 120 psig)
Supply Pressure Range (Min./Max.)	Minimum - 21 kPa (3 psig) above maximum output Maximum - 700 kPa (100 psig)	Minimum = 35 kPa (5 psig) above maximum output Maximum - 1050 kPa (150 psig)
Supply Pressure Sensitivity	0.15% of span per 10 kPa (0.1 % of span per psig at mid range)	.005% of span per 7.0 kPa (1.0 psig)
Terminal Based Linearity	1.0% of span	1.5% of span typical 2.0% max.
Repeatability	0.5% of span	1.0% of span
Hysteresis	1.0% of span	1.0% of span
Response Time	Depends on pressure range - typo less than 0.25 sec. for 3-15 psig units	Depends on pressure range - typo
Flow Rate	7.6 m <sup>3</sup> /hr (4.5 SCFM) at 175 kPa (25 psig) supply 20.0 m <sup>3</sup> /hr (12.0 SCFM) at 700 kPa (100 psig) supply	40.8 m <sup>3</sup> /hr (24.0 SCFM) at 1050 kPa (150 psig) supply
Relief Capacity	3.4 m <sup>3</sup> /hr (2 SCFM) at 35 kPa (5 psig) above 140 kPa (20 psig) set point	11.9 m <sup>3</sup> /hr (7 SCFM) at 35 kPa (10 psig) above 140 kPa (20 psig) set point
Maximum Air Consumption	0.3 m <sup>3</sup> /hr (0.15 SCFM) at mid range typical	0.15 m <sup>3</sup> /hr (0.08 SCFM) at mid range typical
Media	Oil free, clean dry air filtered to 40 microns.	
Temp. Range (Operating)	-30C to 60C (-20F to 140F)	
Port Sizes	1/4" NPT (Pneumatic) DIN 43650 connector (Electric)	1/4" NPT (Pneumatic) DIN - 43650 connector (Electric)
Weight	2.2 lbs. (1.0 kg) approx.	

#### Ordering Information

#### I/P Transducers 500MK

Part No.	Input	Output Range		Impedance 1%
		psi	kPa	
MK501	4-20 mADC	3-15	20-100	2000
MK502	4-20 mADC	9-15	60-100	1100
MK503	4-20 mADC	3-9	20-60	1100
MK504	4-20 mADC	3-27	20-185	2400
MK505	4-20 mADC	6-30	40-200	2400
MK506	4-20 mADC	1-17	7-117	2700
MK507	10-50 mADC	3-15	20-100	900
MK508	10-50 mADC	3-27	20-185	1050
MK509	10-50 mADC	6-30	40-200	1050
MK510	4-20 mADC	2-60'	14-420	2450
MK511	4-20 mADC	3-120'	20-830	2800
MK512	0-60 mADC	2-120'	15-830	2400

#### E / P Transducers 500MK

MK513	0-5VDC	3-15	20-100	6250
MK514	0-5VDC	3-17	20-185	5500
MK515	0-5VDC	6-30	40-200	5600
MK516	1-9VDC	3-15	20-100	10100
MK517	1-9VDC	3-27	20-185	8600
MK518	1-9VDC	6-30	40-200	8600
MK519	0-5VDC	2-60'	14-120	5200
MK520	0-10VDC	3-120'	20-830	8250

- Output shown is as calibrated at the factory. Large span adjustment capability allows recalibration to achieve output ranges from 20-240 kPa (3-35 psig) to 20-1000 kPa (3-145 psig).
- Approval Pending

#### NEMA-4X(IP65) Enclosure

Optional NEMA 4X enclosure rating allows for installation in splashdown or outdoor environments. Unit also meets the requirements of IEC standards IP65.

#### Intrinsically Safe

The MYKO 500 MK series has been tested and approved by CMRI, Dhanbad, India, for intrinsically safe Class IIa, IIB, and IIC, gas Groups C, D, E, F, and G when used with an apparatus meeting the entity requirements as mentioned hereunder.

V<sub>max</sub> = 29.9v C<sub>1</sub> = 0 C<sub>1</sub> is capacitance  
I<sub>max</sub> = 65mA L<sub>1</sub> = 35mH L<sub>1</sub> is inductance

Installations should be done in accordance with MYKO interconnection drawing. This drawing is included in the Myko-500FC series installation, operation and maintenance manual. The intrinsically safe approval is a standard feature of the MYKO 500 MK series and applies only to units with a 4-20 mA input signal that are installed with the following barriers.

#### Barriers:

#### Groups

Leeds & Northrup C&D  
PIN. 316569 & 316747

R. Stahl, Inc. C&D  
PIN. 8901/33-293/000/79  
9001/01-280-100-10  
9002/13-280-110-00

MTL, Inc.

PIN. 728,787S,4045

Pepperl & Fuchs, Inc. C&D  
PIN. KHD3-ICD/Ex132

The MYKO-500MK series is also CMRI, Dhanbad, approved as nonincendive for gas groups IIa, IIB and IIC and gas groups C,D,E,F & G. Barriers are not required for nonincendive rating application.

#### Options

Add proper letter onto end of part no.

G- Pressure Gauge: 2" face, back mounted  
Dual scale.

W-NEMA4X : Enclosure for  
splashdown/outdoor  
use.

Ex- : Explosion-proof\*\*

2" Pipe mounting/DIN Rail mounting  
available on request.

#### Note:

Consult factory for Electro-pneumatic Positioner (current/voltage input), Pneumatic to Pneumatic Valve Positioners, Position Transmitters and Limit Switches.