Power Line Transducers - Introduction

Introduction

MECO Power Line Transducers were designed by MICRO DENSHI CORPORATION of Japan for AC Power Line parameters like Voltage, Current, Wattage, Var, Power Factor, Frequency, DC Isolation, and TAP Position.

These reliable and accurate Transducers are in applications in all sectors of the power and process industry since over 15 years.

These Transducers give a load independent and isolated DC output directly proportional to the input parameters.

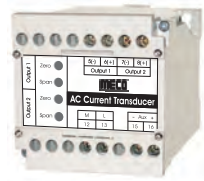
MECO Transducers are widely used for automation and control of the power and process systems as well as for local and remote monitoring of the electrical parameters at every stage of electricity generation, transmission & distribution. They are ideal for SCADA, energy management, telemetering, data-logging as well as central monitoring systems.

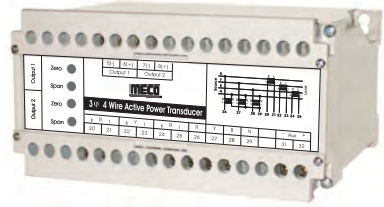
MECO Transducers are generally designed to comply to the requirements of IEC 688 / EN 60688, EN 61010-1, EN 61326-1 and I.S. 12784 (Part 1). All MECO Transducers pass through a stringent manufacturing and in-house quality control process consisting of vibration, burn-in and calibration tests to ensure complete reliability and accuracy during the continuous operation.

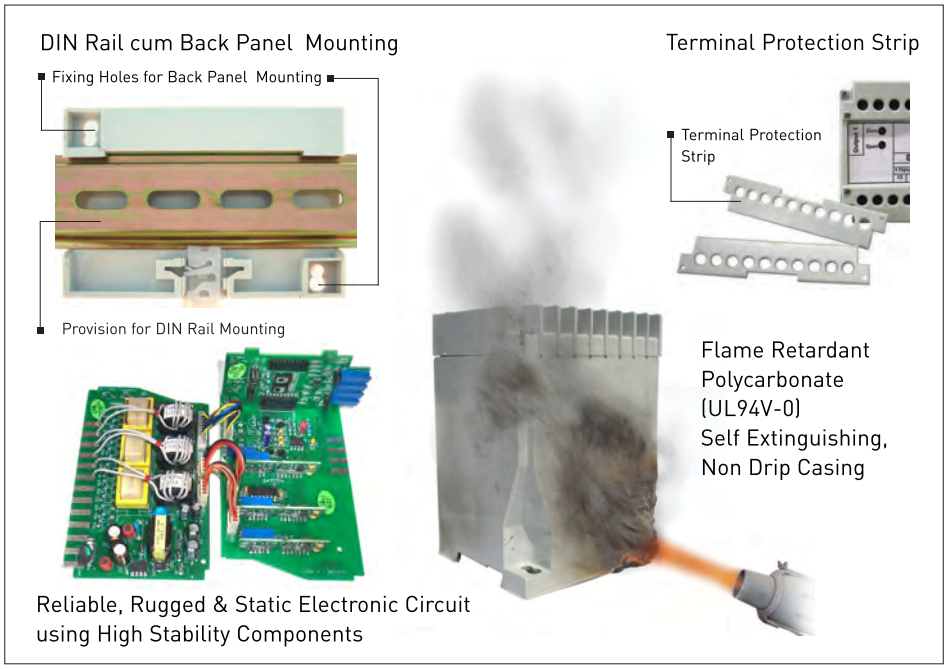
MECO Transducers can also be supplied mounted in Panel with complete wiring and accessories upto termination point for applications in various industries like Power Utilities, SEB's, Cement, Steel, Aluminum, Chemicals, Fertilizers, Sugar, Petrochemicals etc.

Features

- Terminal Protection Cover
- Reliable & Rugged Static Circuits
- Low Ripple in Output Signal
- Flame Retardant Polycarbonate Case
- Choice of Multiple Asymmetrical Outputs
- Wide Choice of Suppressed Ranges
- Open and Short Circuit Protection for Outputs
- Dual Output (Non Isolated)
- Self-Powered, AC, DC, SMPS Auxillary Supply
- Din Rail Mounting
- Bi-Directional Outputs
- Fast Response Time
- Bi-Directional Inputs for Import / Export







Types

- AC Current (Average / TRMS)
- AC Voltage (Average / TRMS)
- Frequency
- Active Power (TRMS) (1P & 3P - Balanced or Unbalanced System)
- Reactive Power (TRMS) (1P & 3P - Balanced or Unbalanced System)
- Power Factor (Zero Crossing / TRMS) (1P & 3P - Balanced or Unbalanced System)
- DC Isolation for Voltage & Current
- Tap Position / OLTC

Sr.	DIN Series	Auxilliary Power Supply			Type of Input		Type of Output				Isolation	Other		
		230V AC	SMPS - LV (19-90V AC / DC) SMPS - HV (85-265V AC / DC)	Self Powered	Bi Directional	Expanded / Suppressed	Single / Dual (Symmetrical / Asymmetrical)	Dual (Non-Isolated)	Bi-Directional	Expanded / Suppressed	2.5KV Between Input / Output / Aux. / Case	Average	TRMS	External Zero & Span Adjustment
1	**AC Current**	✓	✓	✓	NA	✓	✓	✓	NA	✓	✓	✓	✓	✓
2	**AC Voltage**	✓	✓	✓	NA	✓	✓	✓	NA	✓	✓	✓	✓	✓
3	**W / KW / MW (1P 1E 2W) - TRMS**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NA	✓	✓
4	**W / KW / MW (3P 1E - Balanced Load)- TRMS**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NA	✓	✓
5	**W / KW / MW (3P 2E 3W - Balanced & Unbalanced Load)- TRMS**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NA	✓	✓
6	**W / KW / MW (3P 3E 4W - Balanced & Unbalanced Load)- TRMS**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NA	✓	✓
7	**Var / KVar / MVar (1P 1E 2W) - TRMS**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NA	✓	✓
8	**Var / KVar / MVar (3P 1E - Balanced Load)- TRMS**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NA	✓	✓
9	**Var / KVar / MVar (3P 2E 3W - Bal. & Unbal. Load) - TRMS**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NA	✓	✓
10	**Var / KVar / MVar (3P 3E 4W - Bal. & Unbal. Load) - TRMS**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NA	✓	✓
11	**Frequency Transducer**	✓	Under development, Please inquire with sales@mecoinst.com	✓	NA	NA	✓	✓	NA	✓	✓	✓	NA	✓
12	**PF (1P 1E 2W) - Zero Crossing**	✓		✓	✓	NA	✓	✓	✓	✓	✓	✓	NA	✓
13	**PF (3P 1E 2W - Balanced Load) - Zero Crossing**	✓		✓	✓	NA	✓	✓	✓	✓	✓	✓	NA	✓
14	**PF (3P 2E 3W - Balanced & Unbalanced Load)- TRMS**	✓		✓	✓	NA	✓	✓	✓	✓	✓	NA	✓	✓
15	**PF (3P 3E 4W - Balanced & Unbalanced Load)- TRMS**	✓		✓	✓	NA	✓	✓	✓	✓	✓	NA	✓	✓
16	**DC Isolation / DC-DC Coverter for Current and Voltage**	✓	✓	NA	✓	✓	✓	✓	✓	✓	✓	✓	NA	✓
17	**TAP Position Transducer**	✓	✓	NA	NA	✓	✓	✓	NA	✓	✓	✓	NA	✓

Note : ✓ Indicates choice of Standard / Optional features possible for DIN Series. Please specify your requirement of all Standard / Optional specifications clearly at the time of ordering. NA denotes not applicable.

Specifications

Accuracy	± 0.5% of Span (standard) Others on request (optional)
Accuracy Range	0 to 120%
Zero Adjustment	± 2% of Span (min.)
Span Adjustment	± 10% of Span (min.)
Response Time	< 250 ms for 0 to 90% of Output < 1 s for 0 to 90% of Output for PF
Output Ripple	< 0.5% of Full Scale
Compliance Voltage	12VDC (max.)
Overload - Continuous	Voltage : 1.2 x Un Current : 2 x In
Overload - Short Duration (1 sec.)	Voltage : 2 x Un Current : 20 x In
Max. Open Circuit Voltage	< 30VDC
Stability	± 0.25% Per Annum, Non Cumulative
Environmental Conditions	As per IEC 688 User Group II
Operating Temperature	0 to 55°C, RH < 95% (non condensing)
Storage Temperature	-20 to 70°C, RH < 95% (non condensing)
Calibrated At	27°C ± 5°C
Temperature Coefficient	0.02% / °C
Isolation	Complete (Input/Output/Auxiliary/Case)
Insulation Resistance	>100MΩ at 500VDC
Self Powered (optional)	Max.Variation of ± 20% in input voltage

Warm Up Time	20 min. (approx.)
Dielectric Strength	2.5kV at 50 Hz for 1 min.(Standard) 4kV (Optional), across Casing - Input/Output/Auxiliary Input - Output Input - Auxiliary Output - Auxiliary
Impulse Test	5kV, 1.2 / 50 µS
Casing	
DIN Series	Flame Retardant, Polycarbonate (UL 94V-0) Self Extinguishing, Non Drip, DIN Rail cum Wall Mounting Casing
Applicable Standards	
IEC 688 / EN 60688	Electrical Measuring Tranducers for converting AC Electrical Quantities to Analog or Digital Signals
EN 61010-1	Safety requirments for Electrical Equipment for Measurement Control & Laboratory use
EN 61326-1	Electrical Equipment for Measurement Control & Laboratory use - EMC requirements
IS12784 (Part-1)1989	Electrical Measuring Transducers for converting AC Electrical Quantities into DC Electrical Quantities : General Purpose Transducer

Ordering Information

Model, Input Range, Input Voltage, Input Current, PTR, CTR, Frequency, Auxiliary Supply, Output 1, Output 2 & Optionals

Dimensions (in mm)

DIN Series

Case Size	A	B	C	D	E	F	G	H
I	75	60	112	70	35	73	50	60
II	100	85	112	70	35	73	50	60
III	150	135	112	70	35	73	50	60