

## ATS - PANEL MOUNTED TRANSDUCERS

### AC POWER FACTOR ANGLE

#### FEATURES

- designed to International Standards
- proven reliability – over 27 years of experience
- high accuracy and stability
- IEC688 specification compliant
- 2kV isolation
- fire retardant, DIN rail and panel mount housing
- ac and dc auxiliary supplies
- simplified connection details on label
- extensive input and output combinations
- non-standard inputs and outputs available
- removable cover for quick inspection
- technical and after-sales support

#### APPLICATION

The Measurlogic Power Factor Angle transducer measures the phase angle between the zero crossings of the current and voltage, in a single phase, to give an output proportional to the power factor angle as defined by the equation  $W = VACos\phi$ . This equation is only correct for sinusoidal waves and balanced loads when applied to three phase systems.

This relatively simple method yields good results in most applications but careful consideration must be given when applied to load and power factor correction studies.

In the Measurlogic system, the output is a standardized dc signal (0-5mA or 4-20mA) from a high impedance source and galvanically isolated from the input and is both current and voltage limited.

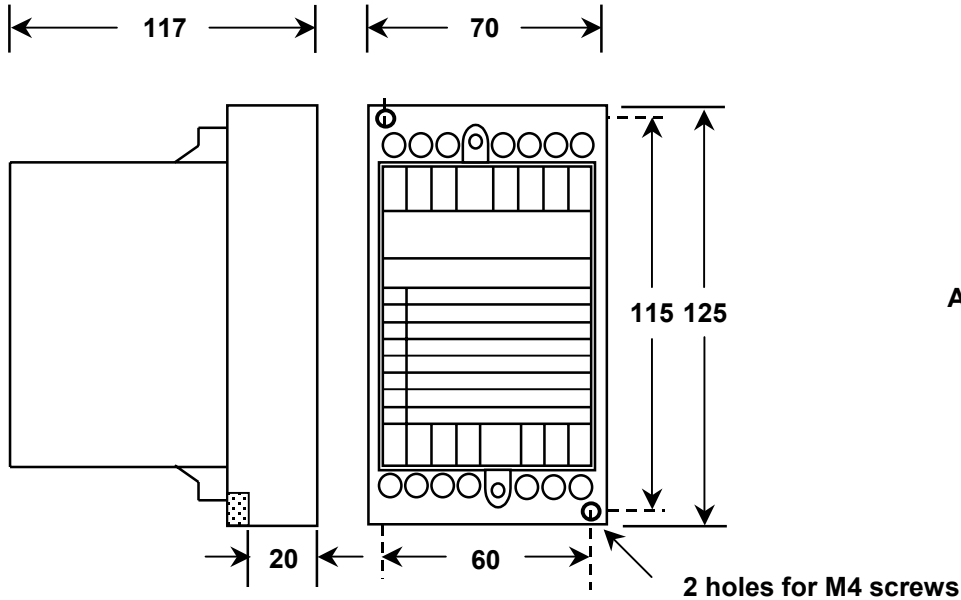
Also, with either or both the input current and voltage and / or the auxiliary supply not being present, the transducer output will go zero to clearly identify this fault condition.

#### ORDERING INFORMATION

(Specific combinations to be confirmed on ordering. Other input/output values available.)

Model : K  -  /  -  -  -

Transducer Type ( group 2 )		Input Data (for current) ( group 3 )		Input Data (for voltage) ( group 3 )		Output Data ( group 4 )		Class Accuracy ( group 5 )		Auxiliary Supply (group 6)	
Y1	1Ø 2 wire	A1	1A	V150	150V	A5M	5mA	C10	1,0	3	18-70Vac/dc
Y2	3Ø 3 wire	A5	5A	V300	300V	A20M	20mA			4	90-260Vac/dc
				V600	600V	V10	10V			5	115/230Vac
						A4M	4-20mA				
						V4	1-5V				



All Dimensions in Millimeters

Transducer Model	KY
Measurand	Power factor angle
Range	-180°...0°...+180° or part thereof, 30° minimum
Calibration Zero	Arbitrary
Characteristic	Phase angle linear
Input Current	1 or 5A
Current Range	5...140%
Current Overload	1,2x continuously, 10x for 3 seconds
Current Path Burden	0,2 VA
Input Voltage	150, 300, 600V (other on request)
Voltage Range	80...120%
Voltage Overload	1,2x continuously, 2x for 10 seconds
Voltage Path Burden	4ma
Input Frequency	40...50...60...600Hz
Input Wave Shape	Arbitrary
Output	4-20mAdc (other on request)
Output Burden	10V (eg. 2k ohm for 5mA)
Burden Influence	<0,1%
Output Burden Voltage	2% ptp
Response Time T80	200ms
Ambient Temperature	-10...+60°C
Temp. Influence	<0,2%/10°C
Accuracy Class	1
Auxiliary Supply	115/230 ±20%, 50/60Hz or 18-70V ac/dc or 90-260V ac/dc
Insulation	2kV, 50Hz, 1 minute
Impulse Withstand	5kV peak 1/50us wave, 0,5J
Housing	Surface or DIN Rail mounted hard plastic base with protected screws for 2,5mm <sup>2</sup> (12 AWG) conductors, and fire retardant removable cover
Mass	0,6 – 0,8 kg (1.32 – 1.76 lb)

## CONNECTIONS

TRANSDUCER TYPE	TERMINALS													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
POWER FACTOR, 1Ø	I <sub>1</sub>	V <sub>1</sub>	I <sub>1</sub>							N	0	115 or 230	O-	O+
POWER FACTOR, 3Ø 3W	I <sub>1</sub>	V <sub>1</sub>	I <sub>1</sub>		V <sub>2</sub>			V <sub>3</sub>			0	115 or 230	O-	O+
POWER FACTOR, 3Ø 4W	I <sub>1</sub>	V <sub>1</sub>	I <sub>1</sub>		V <sub>2</sub>			V <sub>3</sub>		N	0	115 or 230	O-	O+

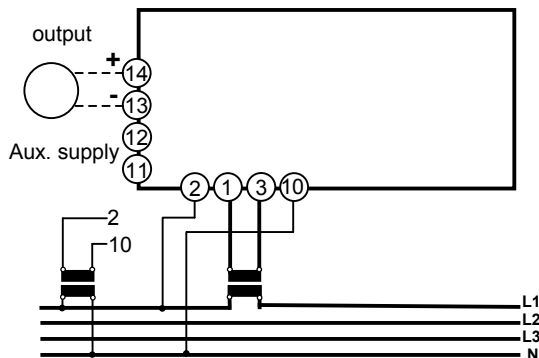
Also available with a SMPS with 18-70Vac/dc or 90-260Vac/dc and terminal connections 11(-ve) & 12(+ve)

## TERMINAL DESIGNATION

V <sub>1</sub>	INPUT VOLTAGE RED	I <sub>1</sub>	INPUT CURRENT RED
V <sub>2</sub>	INPUT VOLTAGE YELLOW	I <sub>2</sub>	INPUT CURRENT YELLOW
V <sub>3</sub>	INPUT VOLTAGE BLUE	I <sub>3</sub>	INPUT CURRENT BLUE
N	INPUT NEUTRAL	115	AUXILIARY SUPPLY 115V
O+	OUTPUT POSITIVE	230	AUXILIARY SUPPLY 230V
O-	OUTPUT NEGATIVE	0	AUXILIARY SUPPLY NEUTRAL

## CONNECTION DIAGRAMS

**Power Factor Angle: Type KY1**  
Single phase or 3-phase 4 wire.



**Power Factor Angle: Type KY2**  
3-phase 3 wire.

