RELATIVE HUMIDITY TRANSDUCER
MODEL TA-502/TA-503

FEATURES

Wide measuring range
Relative humidity (rH): 0~100%
Temperature: -25~100°C (sensor head)
-5~55°C (Electronics)

Excellent durability
The sensor has an excellent durability in dry as well as wet atmospheres over the entire temperature range.

Interchangeability
The sensor can easily be replaced within 2%rH accuracy without any calibration or adjustment.

From Left: 1) Flexible cable type 2) Pressure resisting type, 3) Rigid probe type & 4) Duct type transducer

DESCRIPTION
TA-502/TA-503 uses a special rH sensor TI-A which has been designed and developed to meet the demand of high quality measurement of relative humidity. TA-502/TA-503 has compact light weight design. It is available with rigid metal type, flexible cable type or duct type sensor heads. Options like LCD/LED display and temperature sensing or transmitting circuit. If required EMI shielded or extended length sensor and/or output cable can be provided. Analog 4~20mA output is available for 0~100% rH scale. TA-502/TA-503 is ideally suited for various industrial applications where long term accuracy and stability is important.

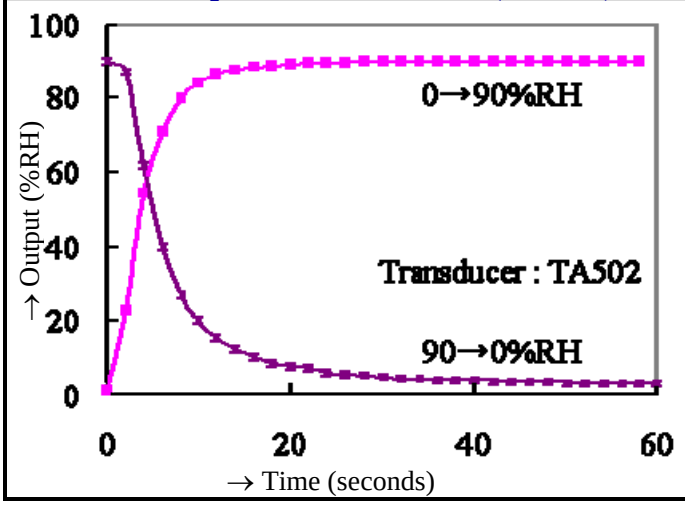
HUMIDITY SENSOR TI-A *High temperature humidity sensor*

Standard TI-A sensor with dust filter (left) and bare sensor (right)

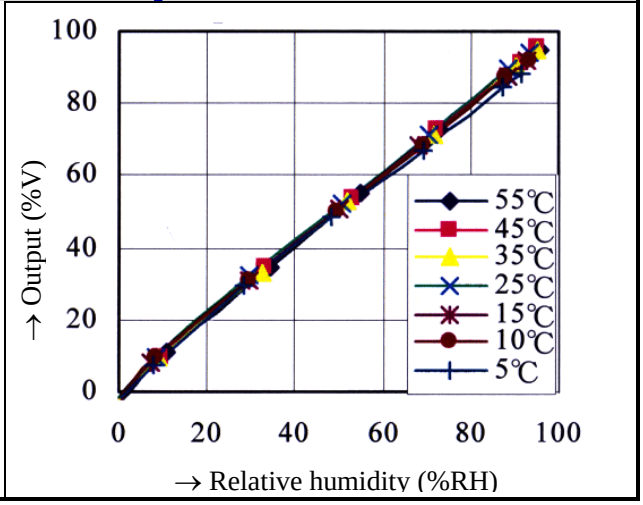
TI-A has been developed utilizing next generation humidity sensing A-polymer. It is highly durable especially in wet atmospheres at high temperature. It has excellent linearity, fast response low hysteresis and minimal dependency on temperature that makes it suitable sensor for accurate relative humidity measurement over a long time period.

TI-A has excellent interchangeability. Standard sensor is fitted with dust filter for use in industrial environment.

Time response curve of TI-A (at 27°C)



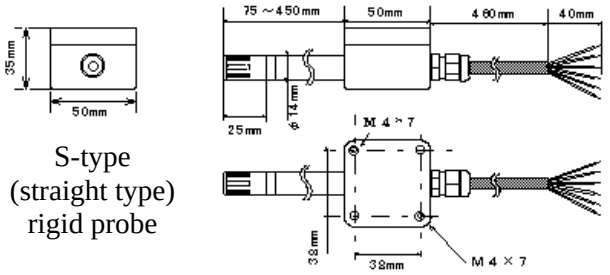
Output curve of TA-502/TA-503



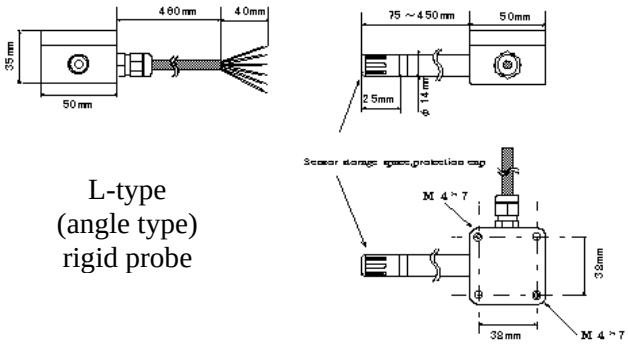
TECHNICAL SPECIFICATIONS		
DESCRIPTION	**MODEL TA-502**	**MODEL TA-503**
Measuring range (RH)	0~100%	0~100%
Accuracy (at 25°C)	±2% rH (10~90% rH) ±3% rH (2~10% rH)	±3%Rh (10~90% rH) ±4% rH (2~10% rH)
Temperature limits	-25~100°C (sensor head) and -5~55°C (electronic unit0	
Sensor	A-polymer capacitance sensor model TI-A	
Response time (90%)	15 sec. (using membrane filter)	
Output (0~100% rH)	Current output: 4~20mA DC (for 0~100% rH scale) or Voltage output: 0~5VDC, 0~1 VDC, 0~5VDC	
Power supply/consumption	9~25V DC/Power consumption less than 4mA	
Power/output cable length	Standard 500mm	
Insulation resistance	More than 200MΩ (500VDC. 2 minutes period)	
Weight	Approx. 150 grams	
Options	1) Digital LCD or LED display, 2) Pt 100Ω temperature sensor output 3) Temperature transmitting circuit, 4) Electromagnetic shielding 5) Stainless steel mesh cap for sensor 6) Sintered metal cap for sensor	
TYPES OF SENSOR HEADS		
Rigid metal probe (B)	S-type (straight type) or L-type (angle type) Standard probe lengths 75mm, 300mm or 450mm (max.)	
Flexible cable probe (C)	Flexible cable suitable up to 100°C Standard cable lengths: 500mm, 1,000mm & 2,000mm (max.)	
Duct type probe (D)	S-type (straight type) or L-type (angle type), Rubber pad provided for duct mounting, standard probe lengths 75mm, 300mm or 450mm (max.)	

LONG TERM STABILITY TEST RESULTS OF TI-A SENSOR		
Condition	Duration	Drift
At 80°C/ 95%rH	250 days	<±2% rH
At 90°C, 90% rH	240 days	<±2% rH
At 100°C, dry	5 years	<±2% rH
At 40°C, 95%rH	5 years	<±2% rH
In Freezer (-25°C)	2 years	<±1% rH
At 150°C, dry	5 years	<±2% rH
In tap water	70 hours	<±2% rH
Dipped in pure distilled	70 hours	<±1% rH
Dipped in ethanol	10 minutes	<±2% rH
Inside room	800 days	<±1% rH
In chicken farm	3 months	<±2% rH
In hog farm	3 months	<±2% rH
In urban city air	1 year	<±2% rH
In seaside air	10 months	<±1% rH
-20°C (2 hour) to 120°C (2 hours)	24 cycles	<±2% rH

DIMENSIONS



S-type
(straight type)
rigid probe



L-type
(angle type)
rigid probe

DUE TO CONTINUOUS PRODUCT IMPROVEMENT, THE DESIGN AND TECHNICAL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE

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