# Product Specification Sheet Model: MS5521

Plug-In PT Transmitter with Isolated Single Output

## DESCRIPTION

The MS5521 is a plug-in PT transmitter that calculates the rms values of AC current signals from a PT, converts them into commonly used DC signals, and provides an isolated single output.

## ORDERING CODE

**MS5521 - ☐ - ☐☐**

**Model**

**Power Supply**

**A**: 100 to 240V AC (50 to 60Hz)
**D**: 24V DC **P**: 100 to 240V DC

**Input (AC Voltage Signal)**

**1**: 0 to 110V AC, 50/60Hz
**2**: 0 to 150V AC, 50/60Hz
**3**: 0 to 300V AC, 50/60Hz
**0**: Other AC voltage signal, 50/60Hz

**Output**

**A**: 4 to 20mA DC
**D**: 0 to 20mA DC
**Z**: Other DC current signal

**1**: 0 to 10mV DC
**2**: 0 to 100mV DC
**3**: 0 to 1V DC
**4**: 0 to 10V DC
**5**: 0 to 5V DC
**6**: 1 to 5V DC
**3W**: ±1V DC
**4W**: ±10V DC
**5W**: ±5V DC
**0**: Other DC voltage signal

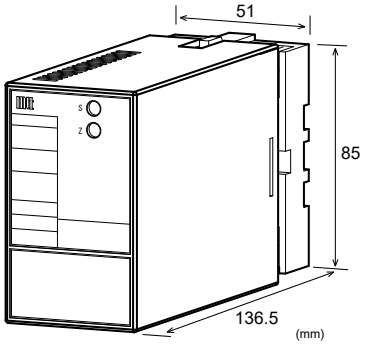
**Options**

**No code**: None
**/X**: Others (Special order)
* For non-standard options, ask MTT for availability.

## ORDERING INFORMATION

To place an order, please use the ordering code format as shown above.
(e.g.) MS5521-A-16

Other Ordering Examples:
For an input code of "0": MS5521-A-0A (Input: 0 to 200V)
For an output code of "0": MS5521-A-20 (Output: 2 to 5V)
For an option code of "X": MS5521-A-2A/X (0-90% response time: 100ms max.)




## SPECIFICATIONS

### POWER SECTION

| | |
|---|---|
| Power Requirements | 100 to 240V AC: 85 to 264V AC (47 to 63Hz)<br>24V DC: 24V DC±10%<br>100 to 240V DC: 85 to 264V DC |
| Power Sensitivity | Better than ±0.1% of span for each power supply range. |
| Power Line Fuse | 160mA fuse |

Maximum Power Consumption

| Power | 100-240V AC | 24V DC | 100-240V DC |
|---|---|---|---|
| | Approx. 4.5VA | Approx. 1.2W | Approx. 4.8W |

### INPUT SECTION

| | |
|---|---|
| Input Resistance | 1MΩ min. with or without power. |
| Allowable Input Current | Continuous: 120% of the rated input value<br>Instantaneous: 1.5 times the rated input value (within 5 seconds) |
| Crest Factor | 3 max. |
| Ranges Available | Between 0-10mV AC and 0-300V AC. |

### OUTPUT SECTION

Allowable Output Load

| | | |
|---|---|---|
| Voltage Output (DC) | 1V span and up | 2mA max. |
| | 10mV | 10kΩ min. |
| | 100mV | 100kΩ min. |
| Current Output (DC) | 4 to 20mA | 750Ω max. |

| | |
|---|---|
| Zero Adjustment | Approx. ±5% of span. (Adjustable by the front-accessible trimmer.) |
| Span Adjustment | Approx. ±5% of span. (Adjustable by the front-accessible trimmer.) |

Ranges Available

| | Current Signal | Voltage Signal |
|---|---|---|
| Output Range (DC) | 0 to 20mA | -10 to 10V |
| Output Span (DC) | 4 to 20mA | 10mV to 20V |
| Output Bias | 0 to 100% | -100 to 100% |

* For current output signals, the accuracy of any current output smaller than 0.1mA is not guaranteed.
Output Spec. Ex. 1: For 4 to 20mA output, the output span is 16mA and the bias +25%.
Output Spec. Ex. 2: For -1 to 4V output, the output span is 5V and the bias -20%.

## ●PERFORMANCE

| | |
|---|---|
| Accuracy Rating | Better than ±0.25% of span with at least 10% input (at 25°C±5°C). |
| Temperature Effect | Better than ±0.2% of span per 10°C change in ambient. |
| Response Time | 400ms max. (0 to 90%) with a step input at 100%. |
| CMRR | 100dB min. (500V AC, 50/60Hz) |
| Isolation | 3-way isolation between input, output, and power. |
| Insulation Resistance | 100MΩ min. (@ 500V DC) between input, output, and power. |
| Dielectric Strength | Input / Output / Power: 2000V AC for 1 minute (Cutoff current: 0.5mA) |
| Surge Withstand Capability | Tested as per ANSI/IEEE C37.90.1-1989. |
| Operating Environment | Ambient temperature: -5 to 55°C<br>Humidity: 5 to 90% RH (non-condensing) |
| Storage Temperature | -10 to 60°C |

## ●PHYSICAL

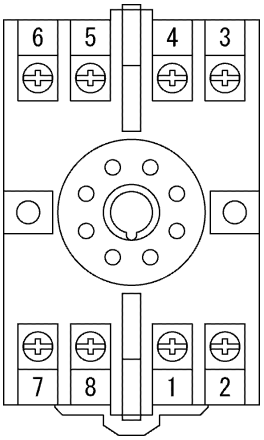
| | |
|---|---|
| Installation | Wall/DIN rail mounting |
| Mounting Orientation | Vertical |
| Screwing Torque | 0.78 to 1.18 [Nm] * Recommended |
| Wiring | M3.5 screw terminal connection |
| External Dimensions | W51 × H85 × D136.5mm (including the socket) |
| Weight | Main unit: 200g max.<br>Socket: 60g max. |

## ●MATERIALS

| | |
|---|---|
| Housing | ABS resin (UL 94V-0) |
| Socket | ABS resin (UL 94V-0) |
| Screw Terminal | Galvanized steel with trivalent chromate finish |
| Printed Circuit Board | Glass fabric epoxy resin (FR-4: UL 94V-0) |
| Conformal Coating | HumiSeal® 1A27NS (Polyurethane) |

* HumiSeal® is a registered trademark of Chase Corporation.

## TERMINAL ASSIGNMENT




| | | |
|---|---|---|
| ① | + OUTPUT | |
| ② | - OUTPUT | |
| ③ | L INPUT | |
| ④ | N INPUT | |
| ⑤ | N.C. | |
| ⑥ | N.C. | |
| ⑦ | P (+) | POWER |
| ⑧ | N (-) | |

## BLOCK DIAGRAM