



Features

- ★ Auto range from $\pm 1.9999V$ to $\pm 199.99V$.
- ★ Sensor power supply 12Vdc $\pm 10\%$ 100mA, 24Vdc $\pm 10\%$ 50mA selectable. (when process signal input)
- ★ Two color display Green and Red.
- ★ Main LED height 18mm.
- ★ Easy to set setpoints by push button.
- ★ Power supply 100 to 240Vac.
- ★ DC voltage, current, Process input available.
- ★ 2 setpoints and 4 setpoints available.
- ★ D/A analog output (high response time).
- ★ NEMA 4 (IP66) Front bezel.
- ★ CE marking, RoHS conform.

Ordering code

WPM-1-□□ - □□□ - □□□□

| Code | Power supply | Code | Display | Code | Input range | Code | Output | Code | Comparator output | Code | Test report |
|------|---------------|------|---------|------|-----------------------------|------|---------------|------|-------------------------------------|------|---------------------|
| 1 | 100 to 240Vac | 1 | Single | 1 | DC voltage (11 to 14 range) | 0 | Display only | 0 | None | 0 | None |
| | | 2 | Multi | 2 | DC voltage (15 range) | 1 | Analog output | 1 | 2 setpoints Relay output | 1 | with Test report |
| | | | | 3 | DC current (21 to 24 range) | | | 2 | 4 setpoints Relay output | | |
| | | | | 4 | DC current (25 range) | | | 3 | 2 setpoints Photo coupler output | | |
| | | | | B | Process signal | | | 4 | 4 setpoints Photo coupler output | | |

Input Specification

◆ DC voltage

| Range | Measurement range | Auto range | Display Range (Scaling) | Resolution | Impedance | Max. allowable input | Accuracy (23 \pm 5 $^{\circ}$ C 35~85%RH) |
|-------|-------------------|---------------|------------------------------|-------------|----------------------|----------------------|---|
| 11 | $\pm 199.99mV$ | Not available | offset: -19999 to 99999 | 10 μV | Approx. 10M Ω | $\pm 250V$ | $\pm (0.1\%$ of FS +1 digit) |
| 12 | $\pm 1.9999V$ | Available | fullscale -19999 to 99999 | 100 μV | | | |
| 13 | $\pm 19.999V$ | | | 1mV | | | |
| 14 | $\pm 199.99V$ | | | 10mV | | | |
| 15 | $\pm 600.0V$ | Not available | | 100mV | | $\pm 600V$ | |

◆ DC current

| Range | Measurement range | Display Range (Scaling) | Resolution | Impedance | Max. allowable input | Accuracy (23 \pm 5 $^{\circ}$ C 35~85%RH) |
|-------|-------------------|------------------------------|-------------|----------------------|----------------------|---|
| 21 | $\pm 199.99\mu A$ | offset: -19999 to 99999 | 10nA | Approx. 1K Ω | $\pm 10mA$ | $\pm (0.1\%$ of FS +1 digit) |
| 22 | $\pm 1.9999mA$ | fullscale -19999 to 99999 | 100nA | Approx. 100 Ω | | |
| 23 | $\pm 19.999mA$ | | 1 μA | Approx. 10 Ω | $\pm 50mA$ | |
| 24 | $\pm 199.99mA$ | | 10 μA | Approx. 1 Ω | $\pm 500mA$ | |
| 25 | $\pm 1.9999A$ | | 100 μA | Approx. 0.1 Ω | $\pm 3A$ | |

◆ Process signal

| Range | Measurement range | Display Range (Scaling) | Impedance | Max. allowable input | Accuracy (23 \pm 5 $^{\circ}$ C 35~85%RH) |
|-------|-------------------|------------------------------|---------------------|----------------------|---|
| 1V | 1 to 5V | offset: -19999 to 99999 | Approx. 1M Ω | $\pm 100V$ | $\pm (0.1\%$ of FS +1 digit) |
| 2V | $\pm 5V$ | fullscale -19999 to 99999 | | | |
| 3V | $\pm 10V$ | | | | |
| 2A | 4 to 20mA | | Approx. 10 Ω | $\pm 50mA$ | |
| 3A | $\pm 20mA$ | | | | |

Specifications

◆ Common specifications

| | |
|-------------------------------------|--|
| Input method | Single Ended |
| A/D conversion method | $\Delta\Sigma$ conversion method |
| Sampling speed | max 250 times per second |
| Overrange indication | When input exceeds the maximum display, ovEr or -ovEr |
| Decimal points | Settable to any digit position |
| Display | Single display main display: red or green 7 segment LED (height 18mm) Multi display main display: red or green 7 segment LED (height 14.9mm) sub display: white 7 segment LED (height 9mm) |
| Polarity | A "-" is displayed automatically |
| Display range | -19999 to 99999 (5 digits) |
| Zero display | Leading zero suppression |
| External control | Select 4 external control and set parameter 1. Pattern select 2. sample hold 3. peak hold 4. fixed zero 5. relay reset |
| Operating temperature | -5 to 50°C 35 to 85%RH |
| Storage temperature/humidity | -10 to 70°C less than 60%RH |
| Power supply | 100 to 240Vac $\pm 10\%$ 50/60Hz |
| Sensor power supply | 12Vdc $\pm 10\%$ 100mA, 24Vdc $\pm 10\%$ 50mA selectable (when process signal input) |
| Power consumption | 12VA max at 100Vac 15VA max at 240Vac |
| Dimensions | 96mm(W) x 48mm(H) x 85.9mm(D) DIN size |
| Weight | approx. 250g |
| Dielectric strength | AC power supply 2000VAC per 1 min. : Power supply terminal-input terminal / external control / analog output terminal 1500VAC per 1 min. : Power supply terminal-compare output terminal |
| Insulation resistance | 500VDC more than 100M Ω the above terminals |
| Vibration strength | 10 to 55Hz 0.15mm X,Y,Z 30 min. |
| Front protection | NEMA 4 (IP66) |
| Applicable EN standard | EN61326-1, EN61010-1 |
| Case material | Polycarbonate |

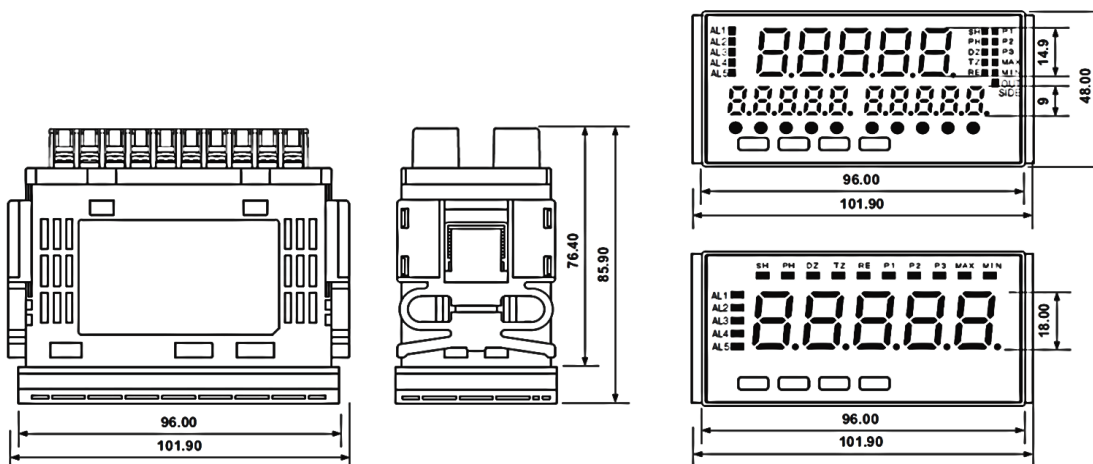
◆ Comparator specifications

| Setting range | -19999 to 99999 | | | | | | | | | | | | |
|---|--|-------------------|--------|---|------------------|--|---------|---|---------|---|---------|--|------------------|
| Hysteresis | 1 to 9999 digit for each setpoints | | | | | | | | | | | | |
| Setting condition | High high setpoint > high setpoint > low set point > low low setpoint | | | | | | | | | | | | |
| Compare condition | <table border="1"> <thead> <tr> <th>Compare condition</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>indication value > high high setpoint > high setpoint</td> <td>AL1(HH), AL2(HI)</td> </tr> <tr> <td>high high setpoint \geq indication > high setpoint</td> <td>AL2(HI)</td> </tr> <tr> <td>high setpoint \geq indication value \geq low setpoint</td> <td>AL3(GO)</td> </tr> <tr> <td>low setpoint > indication value \geq low low setpoint</td> <td>AL4(LO)</td> </tr> <tr> <td>low setpoint > low low setpoint > indication value</td> <td>AL4(LO), AL5(LL)</td> </tr> </tbody> </table> | Compare condition | Result | indication value > high high setpoint > high setpoint | AL1(HH), AL2(HI) | high high setpoint \geq indication > high setpoint | AL2(HI) | high setpoint \geq indication value \geq low setpoint | AL3(GO) | low setpoint > indication value \geq low low setpoint | AL4(LO) | low setpoint > low low setpoint > indication value | AL4(LO), AL5(LL) |
| Compare condition | Result | | | | | | | | | | | | |
| indication value > high high setpoint > high setpoint | AL1(HH), AL2(HI) | | | | | | | | | | | | |
| high high setpoint \geq indication > high setpoint | AL2(HI) | | | | | | | | | | | | |
| high setpoint \geq indication value \geq low setpoint | AL3(GO) | | | | | | | | | | | | |
| low setpoint > indication value \geq low low setpoint | AL4(LO) | | | | | | | | | | | | |
| low setpoint > low low setpoint > indication value | AL4(LO), AL5(LL) | | | | | | | | | | | | |

◆ Analog output specifications

| Conversion method | D/A | | | | | | | | | | | | | | | | | | | |
|--------------------------|--|--------------------|----------------------|----------|--------|---------|------------------------|--------------------|----------------------|----------|-------------|---------|------------------------|--|----------------------|-----------|-----------|--|--|--|
| Resolution | 15bit | | | | | | | | | | | | | | | | | | | |
| Scaling | Digital scaling | | | | | | | | | | | | | | | | | | | |
| Response speed | less than 10ms (0 \rightarrow 90%) | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th>Analog output</th> <th>Load resistance</th> <th>Accuracy</th> <th>Ripple</th> </tr> </thead> <tbody> <tr> <td>0 to 2V</td> <td rowspan="3">more than 10kΩ</td> <td rowspan="3">$\pm(0.1\%$ of FS)</td> <td rowspan="3">$\pm 50\text{mVp-p}$</td> </tr> <tr> <td>0 to 10V</td> </tr> <tr> <td>-10 to +10V</td> </tr> <tr> <td>1 to 5V</td> <td rowspan="2">more than 550Ω</td> <td rowspan="2"></td> <td rowspan="2">$\pm 25\text{mVp-p}$</td> </tr> <tr> <td>0 to 20mA</td> </tr> <tr> <td>4 to 20mA</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> | Analog output | Load resistance | Accuracy | Ripple | 0 to 2V | more than 10k Ω | $\pm(0.1\%$ of FS) | $\pm 50\text{mVp-p}$ | 0 to 10V | -10 to +10V | 1 to 5V | more than 550 Ω | | $\pm 25\text{mVp-p}$ | 0 to 20mA | 4 to 20mA | | | |
| Analog output | Load resistance | Accuracy | Ripple | | | | | | | | | | | | | | | | | |
| 0 to 2V | more than 10k Ω | $\pm(0.1\%$ of FS) | $\pm 50\text{mVp-p}$ | | | | | | | | | | | | | | | | | |
| 0 to 10V | | | | | | | | | | | | | | | | | | | | |
| -10 to +10V | | | | | | | | | | | | | | | | | | | | |
| 1 to 5V | more than 550 Ω | | $\pm 25\text{mVp-p}$ | | | | | | | | | | | | | | | | | |
| 0 to 20mA | | | | | | | | | | | | | | | | | | | | |
| 4 to 20mA | | | | | | | | | | | | | | | | | | | | |

Dimensions



(Unit : mm)