

Terminal Block Dual Output Signal Conditioners W5-UNIT

SIGNAL TRANSMITTER

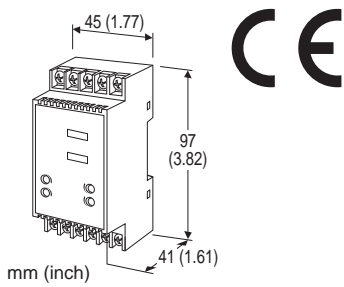
(field-configurable)

Functions & Features

- Converts a DC input into two isolated outputs
- Two independent output ranges
- DIP switch configurable input & output range
- Four-way isolation (input to output 1 to output2 to power)
- High-density mounting
- CE marking for 24 V power

Typical Applications

- Isolation between control room and field instrumentation



MODEL: W5FV-[1]-[2][3]

ORDERING INFORMATION

Specify a code from below for each [1] through [3].

When only one output is needed, select code Y for Output 2, [1].

Orders will be shipped at default factory settings for Input (1 - 5V) and Output 1 (4 - 20mA).

- Code number: W5FV-[1]-[2][3]
(e.g. W5FV-6-P/Q)

Specify variables.

- Special 2nd output range (For codes Z & 0)
- Specify the specification for option code /Q
(e.g. /C01)

INPUT - Field-selectable

Current

- 4 - 20 mA DC (Input resistance 250 Ω)
- 0 - 20 mA DC (Input resistance 250 Ω)
- 0 - 10 mA DC (Input resistance 250 Ω)

Voltage

- 0 - 60 mV DC (Input resistance 1 MΩ min.)
- 0 - 100 mV DC (Input resistance 1 MΩ min.)
- 0 - 1 V DC (Input resistance 1 MΩ min.)
- 0 - 10 V DC (Input resistance 1 MΩ min.)
- 0 - 5 V DC (Input resistance 1 MΩ min.)

- 1 - 5 V DC (Input resistance 1 MΩ min.)
- 10 - +10 V DC (Input resistance 1 MΩ min.)
- 5 - +5 V DC (Input resistance 1 MΩ min.)

OUTPUT 1 - Field-selectable

Current

- 4 - 20 mA DC (Load resistance 550 Ω max.)
- 0 - 20 mA DC (Load resistance 550 Ω max.)

Voltage

- 0 - 10 V DC (Load resistance 1000 Ω min.)
- 0 - 5 V DC (Load resistance 500 Ω min.)
- 1 - 5 V DC (Load resistance 500 Ω min.)
- 10 - +10 V DC (Load resistance 8000 Ω min.)
- 5 - +5 V DC (Load resistance 4000 Ω min.)

[1] OUTPUT 2

Y: None

Current

- A: 4 - 20 mA DC (Load resistance 550 Ω max.)
- B: 2 - 10 mA DC (Load resistance 1100 Ω max.)
- C: 1 - 5 mA DC (Load resistance 2200 Ω max.)
- D: 0 - 20 mA DC (Load resistance 550 Ω max.)
- E: 0 - 16 mA DC (Load resistance 685 Ω max.)
- F: 0 - 10 mA DC (Load resistance 1100 Ω max.)
- G: 0 - 1 mA DC (Load resistance 11 kΩ max.)
- Z: Specify current (See OUTPUT SPECIFICATIONS)

Voltage

- 1: 0 - 10 mV DC (Load resistance 10 kΩ min.)
- 2: 0 - 100 mV DC (Load resistance 100 kΩ min.)
- 3: 0 - 1 V DC (Load resistance 100 Ω min.)
- 4: 0 - 10 V DC (Load resistance 1000 Ω min.)
- 5: 0 - 5 V DC (Load resistance 500 Ω min.)
- 6: 1 - 5 V DC (Load resistance 500 Ω min.)
- 4W: -10 - +10 V DC (Load resistance 2000 Ω min.)
- 5W: -5 - +5 V DC (Load resistance 1000 Ω min.)
- 0: Specify voltage (See OUTPUT SPECIFICATIONS)

[2] POWER INPUT

AC Power

- M: 85 - 264 V AC (Operational voltage range 85 - 264 V, 47 - 66 Hz)
(CE not available)

DC Power

- R: 24 V DC
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)
- R2: 11 - 27 V DC
(Operational voltage range 11 - 27 V, ripple 10 %p-p max.)
(CE not available)
- P: 110 V DC
(Operational voltage range 85 - 150 V, ripple 10 %p-p max.)
(CE not available)



[3] OPTIONS

blank: none

/Q: With options (specify the specification)

SPECIFICATIONS OF OPTION: Q

COATING (For the detail, refer to M-System's web site.)

/C01: Silicone coating

/C02: Polyurethane coating

/C03: Rubber coating

GENERAL SPECIFICATIONS

Construction: Terminal block

Connection

Input: M3.5 screw terminals (torque 0.8 N·m)

Output & power: M3 screw terminals (torque 0.8 N·m)

Screw terminal: Nickel-plated steel

Housing material: Flame-resistant resin (black)

Isolation: Input to output 1 to output 2 to power

Overrange output: Approx. -10 to +120 % at 1 - 5 V

Zero adjustment: -2 to +2 % (front)

(±1 % with ±5V and ±10V input ranges)

Span adjustment: 98 to 102 % (front)

(99 to 101 % with ±5 V and ±10 V input ranges)

INPUT SPECIFICATIONS

■ **DC Current:** Input resistor incorporated

• **DC Voltage**

Input resistance: 1 MΩ min.

OUTPUT SPECIFICATIONS

OUTPUT 2

■ **DC Current:** 0 - 20 mA DC

Minimum span: 1 mA

Offset: Max. 1.5 times span

Load resistance: Output drive 11 V max.

■ **DC Voltage:** -10 - +12 V DC

Spans: Min. 5 mV, max. 20 V

Offset: Max. 1.5 times span

Load resistance: Output drive 10 mA max.; 5 mA for negative voltage output; at ≥ 0.5 V

INSTALLATION

Power Consumption

• **AC Power input:**

Approx. 4 VA at 100 V

Approx. 5 VA at 200 V

Approx. 6 VA at 264 V

• **DC power input:** Approx. 3 W

Operating temperature: -5 to +55°C (23 to 131°F)

Operating humidity: 0 to 90 %RH (non-condensing)

Mounting: DIN rail

Weight: 130 g (0.29 lbs)

PERFORMANCE in percentage of span

Accuracy: ±0.1 %

Temp. coefficient: ±0.015 %/°C (±0.008 %/°F)

Response time: ≤ 0.5 sec. (0 - 90 %)

Line voltage effect: ±0.1 % over voltage range

Insulation resistance: ≥ 100 MΩ with 500 V DC

Dielectric strength:

2000 V AC @1 minute (input to output 1 or output 2 to power to ground)

1000 V AC @1 minute (output 1 to output 2)

STANDARDS & APPROVALS

CE conformity:

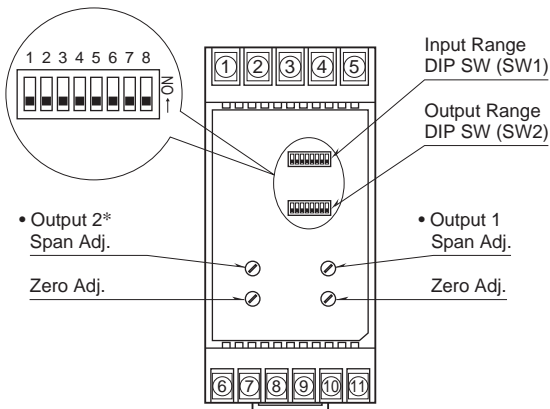
EMC Directive (2004/108/EC)

EMI EN 61000-6-4: 2007

EMS EN 61000-6-2: 2005



EXTERNAL VIEW



*Not provided for single output type.

INPUT RANGE(DIP SW)

Input exceeding the maximum value of each input range may destroy the transmitter. Be sure to confirm the setting range before applying input signals.
 Input range setting accuracy: Approx. 1 % (≤ 2 % when both input and output ranges are modified.)

INPUT RANGE	SW1							
	1	2	3	4	5	6	7	8
4 – 20mA DC				■			■	■
0 – 20mA DC	■					■		■
0 – 10mA DC	■				■			■
0 – 60mV DC	■							
0 – 100mV DC	■		■					
0 – 1V DC	■			■				
0 – 10V DC	■				■		■	
0 – 5V DC	■					■		
1 – 5V DC				■			■	
-10 – +10V DC		■				■	■	
-5 – +5V DC		■			■		■	

■ = ON, Blank = OFF

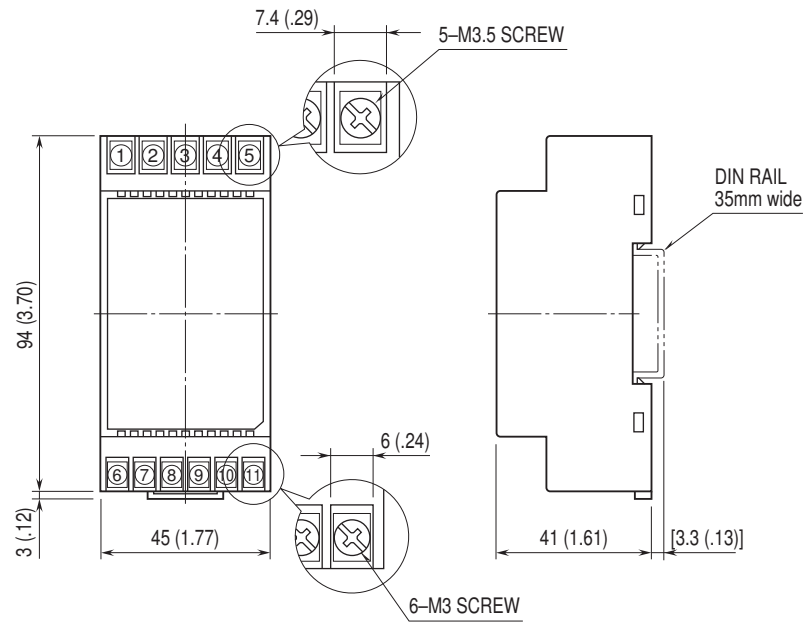
OUTPUT RANGE(DIP SW)

Only Output 1 is field-configurable. Specify Output 2 range when ordering.
 Output range setting accuracy: Approx. 1 % (≤ 2 % when both input and output ranges are modified.)

OUTPUT RANGE	SW2							
	1	2	3	4	5	6	7	8
4 – 20mA DC	■	■		■	■		■	
0 – 20mA DC		■		■	■		■	
0 – 10V DC			■	■		■		■
0 – 5V DC		■		■		■		■
1 – 5V DC	■	■		■		■		■
-10 – +10V DC						■	■	■
-5 – +5V DC			■			■		■

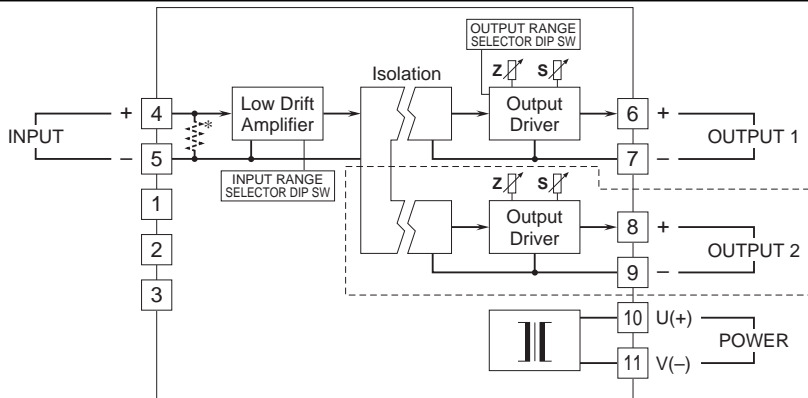


DIMENSIONS unit: mm (inch)



• When mounting, no extra space is needed between units.

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



*Input shunt resistor attached for current input.

Remark 1: The section enclosed by broken line is only with 2nd output option.

Remark 2: DO NOT connect to the terminals 1 – 2 – 3.



Specifications are subject to change without notice.

