

## Terminal Block Dual Output Signal Conditioners W5-UNIT

### SIGNAL TRANSMITTER

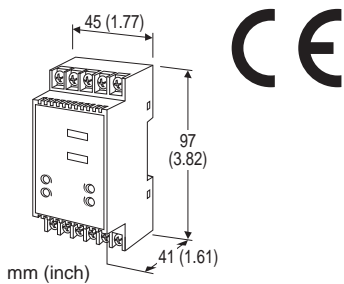
(field-configurable)

#### 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**

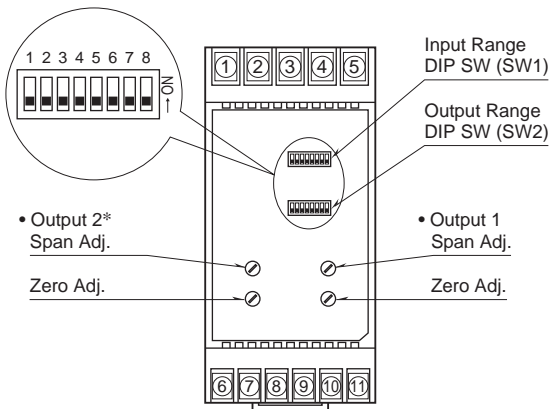
**CE conformity:**

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		■			■		■	

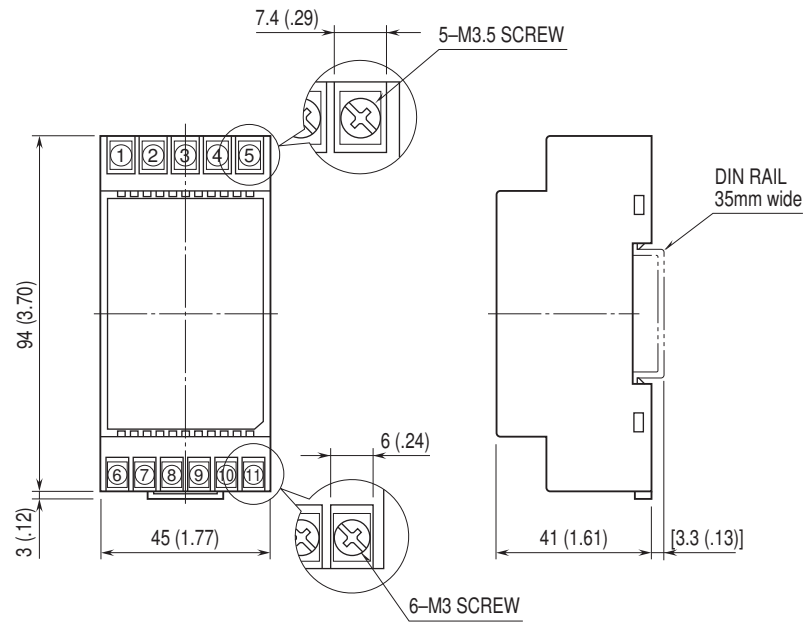
■ = ON, Blank = OFF

**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.)

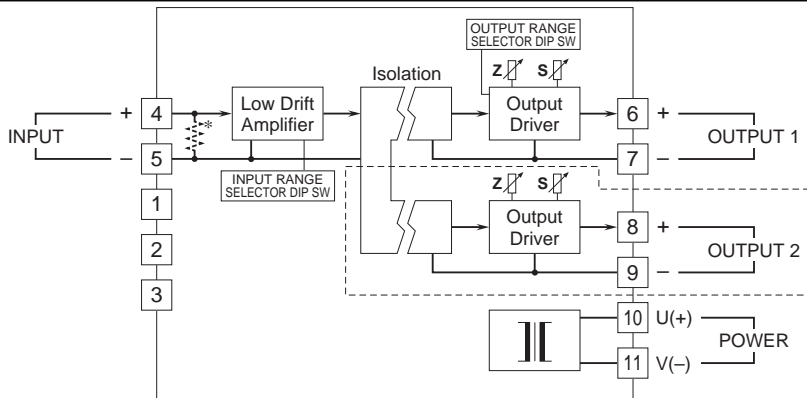
OUTPUT RANGE	SW2							
	1	2	3	4	5	6	7	8
4 – 20mA DC	■	■		■	■		■	
0 – 20mA DC		■		■	■		■	
0 – 10V DC			■	■		■		■
0 – 5V DC		■		■		■		■
1 – 5V DC	■	■		■		■		■
-10 – +10V DC						■		■
-5 – +5V DC			■			■		■

## 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.