

## Wireless Input/Output (I/O)

Wireless I/O connects directly to analog, discrete and pulse transducer signals. The signals are transmitted by radio and either re-created as output signals, or output via serial link or field-bus.

Weidmuller Wireless I/O units have the ability to form sophisticated peer-to-peer networks, with event-reporting messaging to optimize wireless density. Weidmuller products are designed for high reliability operation on open license-free radio bands.

## WI-I/O 9-L Unidirectional Transmitter/Receiver Units

- Frequency hopping spread spectrum 902-928 MHz 1W license-free USA/Canada
- Configurable sub-bands license-free Mexico, South America, Australia/NZ, Hong Kong

The Unidirectional Wireless I/O range of products is suitable for connecting to a single sensor or group of sensors and provides an economical solution for remote monitoring systems. The Unidirectional L products can also be used in more complex networks as signal transmitters or receivers

## Features

### Matched transmitter/receiver pair of modules, or individual transmitter and receiver units

- Peer-to-peer communications. Exception reporting. Reliable self-checking messages. Highly secure data encryption.
- Multi-hop repeater functions - up to 5 intermediate units can be configured in any input-output link
- Factory configured as a matched Transmitter/Receiver pair or user-configurable with E-Series Windows configuration program

### Transmitter unit

- Input-only transmitter unit - two digital/pulse inputs, one analog input and one thermocouple mV input
- Transmits to Receiver unit as a matched pair where the input signals are re-created as output signals, or can transmit to a Multi-I/O or Gateway unit
- Class 1 Div 2 hazardous areas approval (USA/Canada)
- Up to 3000 wireless units per network
- External inputs plus internally calculated values - analog setpoint status, pulse count, power supply voltage
- Thermocouple input -100 to +100mV with cold-junction compensation and linearization for J, K or T-type
- Setpoints status generated by comparing analog input to high and low setpoints
- Digital inputs can also be used as pulse count inputs
- Power supply 9 – 30VDC, measured and available as a transmitted variable
- 24VDC analog loop supply internally provided
- RS232 Configuration and diagnostics port

### Receiver unit

- Output-only receiver unit - three digital contact outputs and one analog output
- Receives radio commands from Transmitter unit as a matched pair where the input signals are re-created as output signals, or can receive commands from a Multi-I/O or Gateway unit
- Class 1 Div 2 hazardous areas approval (USA/Canada)
- Up to 3000 wireless units per network
- Power supply 9 – 30VDC; 24VDC analog loop supply internally provided
- Communications failure indication and configurable output
- Outputs can be configured as retained or reset (fail-safe) on communications failure
- LED indication of radio signal strength
- RS232 Configuration and diagnostics port

**WI-I/O 9-L-T  
Transmitter**



**WI-I/O 9-L-R  
Receiver**



**Technical Data**

**Transmitter Inputs:**

Digital:

Pulse:

Analog:

“floating” differential input:

resolution

accuracy

Thermocouple

Accuracy

**Receiver Outputs**

Digital

Analog

resolution

accuracy

Comms-Fail

Fail-safe

**Power Supply**

Power consumption @12VDC

Analog loop supply internally generated

Internal monitoring of supply low voltage status

Power consumption increases for pulse inputs > 10Hz.

**Serial Port**

**General Data**

Operating Temperature

Humidity

Approvals

Mounting

LED indication: Transmitter Unit

LED indication: Receiver Unit

frequency hopping spread spectrum

Transmit power

Maximum line of sight range

**Antenna connector**

**Dimensions mm (in)**

**Configuration**

**Diagnostics**

**Ordering Data**

two inputs, suitable for voltage free contacts / NPN, or voltage input 0-1 VDC on / >3 VDC off

max rate 10 Hz, 50 msec on time.

Pulse counted as 16 bit register.

0-20 mA (4-20mA, 0-10mA)

16 bit

< 0.1 %

Millivolt (-100mV to +100mV), J, K or T type linearization with on-board cold-junction compensation

greater than 1°C

9-30 VDC

Receiver 100mA, Transmitter 40mA quiescent, during radio transmission (50 msec) 300mA

24VDC 30mA

may be transmitted as an “input” (Transmitter unit only)

RS232 RJ45 female DCE, used for configuration and diagnostics

-40 to 60°C (-40 to 140°F)

0 - 99% RH

FCC Part 15.247, RS210, CSA Class 1 Div 2

DIN-rail mounting

Power/OK, Radio TX , DIN1, DIN2, Analog Setpoint status

902-928MHz, sub-bands available

1W

20 miles (4W ERP), 15km (1W ERP); 3000 ft / 1000 m in obstructed industrial environments. Radio distances can be increased by up to 5 intermediate repeater units.

Each transmission may be configured to be sent 1 to 5 times.

SMA connector for antenna or coaxial cable connection.

100 x 22 x 120 (3.9 x 0.9 x 4.7)

User configuration via serial port. Unidirectional units can be configured to network with Multi-I/O and Gateway units.

Diagnostics features - read input values, write output values, radio signal strength, monitor communication messages.

**Type**

WI-I/O 9-L-T

**Part No.**

6720005005

three relay contact outputs, 260V 1A

0-20mA

12 bit

0.10%

Internal status based on configurable time-out value. Comms-fail status can be configured to a local output.

On “comms-fail”, outputs user-configurable as retained (last correct value) or reset (fail-safe)

9-30 VDC

Receiver 100mA, Transmitter 40mA quiescent, during radio transmission (50 msec) 300mA

24VDC 30mA

RS232 RJ45 female DCE, used for configuration and diagnostics

-40 to 60°C (-40 to 140°F)

0 - 99% RH

FCC Part 15.247, RS210, CSA Class 1 Div 2

DIN-rail mounting

Power/OK, Radio RX, DO1, DO2, DO3, Communications Fail.

902-928MHz, sub-bands available

1W

20 miles (4W ERP), 15km (1W ERP); 3000 ft / 1000 m in obstructed industrial environments. Radio distances can be increased by up to 5 intermediate repeater units.

Each transmission may be configured to be sent 1 to 5 times.

SMA connector for antenna or coaxial cable connection.

100 x 22 x 120 (3.9 x 0.9 x 4.7)

User configuration via serial port. Unidirectional units can be configured to network with Multi-I/O and Gateway units.

Diagnostics features - read input values, write output values, radio signal strength, monitor communication messages.

**Type**

WI-I/O 9-L-R

**Part No.**

6720005006

**WI-I/O 9-L-P1**  
Set - 1 Transmitter, 1 Receiver



**WI-I/O 9-L-P2**  
Set with 2 WI-ANT-DPL-0-8



**Technical Data**

**Transmitter Inputs:**

Digital:

Pulse:

Analog:

"floating" differential input:

resolution

accuracy

Thermocouple

Accuracy

**Receiver Outputs**

Digital

Analog

resolution

accuracy

Comms-Fail

Fail-safe

**Power Supply**

Power consumption @12VDC

Antenna loop supply internally generated

Internal monitoring of supply low voltage status

Power consumption increases for pulse inputs > 10Hz.

**Serial Port**

**General Data**

Operating Temperature

Humidity

Approvals

Mounting

LED indication: Transmitter Unit

LED indication: Receiver Unit

frequency hopping spread spectrum

Transmit power

Maximum line of sight range

**Antenna connector**

**Dimensions mm (in)**

**Configuration**

**Diagnostics**

**Ordering Data**

**Kit Contents**

two inputs, suitable for voltage free contacts / NPN, or voltage input 0-1 VDC on / >3 VDC off

max rate 10 Hz, 50 msec on time. Pulse counted as 16 bit register. 0-20 mA (4-20mA, 0-10mA)

16 bit

< 0.1 %

Millivolt (-100mV to +100mV), J, K or T type linearization with on-board cold-junction compensation

greater than 1°C

three relay contact outputs, 260V 1A

0-20mA

12 bit

0.10%

Internal status based on configurable time-out value. Comms-fail status can be configured to a local output.

On "comms-fail", outputs user-configurable as retained (last correct value) or reset (fail-safe)

9-30 VDC

Receiver 100mA, Transmitter 40mA quiescent, during radio transmission (50 msec) 300mA

24VDC 30mA

may be transmitted as an "input" (Transmitter unit only)

RS232 RJ45 female DCE, used for configuration and diagnostics

-40 to 60°C (-40 to 140°F)

0 - 99% RH

FCC Part 15.247, RS210, CSA Class 1 Div 2

DIN-rail mounting

Power/OK, Radio TX , DIN1, DIN2, Analog Setpoint status

Power/OK, Radio RX, DO1, DO2, DO3, Communications Fail.

902-928MHz, sub-bands available

1W

20 miles (4W ERP), 15km (1W ERP); 3000 ft / 1000 m in obstructed industrial environments. Radio distances can be increased by up to 5 intermediate repeater units.

Each transmission may be configured to be sent 1 to 5 times.

SMA connector for antenna or coaxial cable connection.

100 x 22 x 120 (3.9 x 0.9 x 4.7)

Factory configuration transmitter/receiver matched pair, AI to AO, 2DI to 2DO, SP status to DO3. User configuration via serial port. Unidirectional units can be configured to network with Multi-I/O and Gateway units.

Diagnostics features - read input values, write output values, radio signal strength, monitor communication messages.

**Type**

WI-I/O 9-L-P1

**Part No.**  
**6720005007**

- 2 Whip antennas (6720005086), WI-ANT-DPL-2-6-54
- 2 3ft. antenna connecting cables/brackets
- 1 configuration cable

two inputs, suitable for voltage free contacts / NPN, or voltage input 0-1 VDC on / >3 VDC off

max rate 10 Hz, 50 msec on time. Pulse counted as 16 bit register. 0-20 mA (4-20mA, 0-10mA)

16 bit

< 0.1 %

Millivolt (-100mV to +100mV), J, K or T type linearization with on-board cold-junction compensation

greater than 1°C

three relay contact outputs, 260V 1A

0-20mA

12 bit

0.10%

Internal status based on configurable time-out value. Comms-fail status can be configured to a local output.

On "comms-fail", outputs user-configurable as retained (last correct value) or reset (fail-safe)

9-30 VDC

Receiver 100mA, Transmitter 40mA quiescent, during radio transmission (50 msec) 300mA

24VDC 30mA

may be transmitted as an "input" (Transmitter unit only)

RS232 RJ45 female DCE, used for configuration and diagnostics

-40 to 60°C (-40 to 140°F)

0 - 99% RH

FCC Part 15.247, RS210, CSA Class 1 Div 2

DIN-rail mounting

Power/OK, Radio TX , DIN1, DIN2, Analog Setpoint status

Power/OK, Radio RX, DO1, DO2, DO3, Communications Fail.

LEDs also used to provide radio signal strength indication

902-928MHz, sub-bands available

1W

20 miles (4W ERP), 15km (1W ERP); 3000 ft / 1000 m in obstructed industrial environments. Radio distances can be increased by up to 5 intermediate repeater units.

Each transmission may be configured to be sent 1 to 5 times.

SMA connector for antenna or coaxial cable connection.

100 x 22 x 120 (3.9 x 0.9 x 4.7)

Factory configuration transmitter/receiver matched pair, AI to AO, 2DI to 2DO, SP status to DO3. User configuration via serial port. Unidirectional units can be configured to network with Multi-I/O and Gateway units.

Diagnostics features - read input values, write output values, radio signal strength, monitor communication messages.

**Type**

WI-I/O 9-L-P2

**Part No.**  
**6720005008**

- 2 Dipole antennas (6720005080), WI-ANT-DPL-0-16
- 2 15ft. antenna connecting cables/brackets
- 1 configuration cable