Twin Link

Point-to-Point Paired Wireless I/O Units

When it's just too far or too expensive to lay cable for signal communications, turn to Define Instruments Twin Link units. These sophisticated wireless Point-to-Point nodes combine powerful control and communication capabilities with simple, no-fuss PC setup.

They transmit data up to 1.5km (0.9mi) line of sight (with default antenna), and if your line of sight is obscured or you need to reach further, the P2P Repeater provides the perfect solution.

Everything you need:

- **Input Node (P2P-I)**
  2x universal isolated analogue input channels accepting T/C, RTD, Process inputs (current & voltage), NPN/PNP open collectors, Potentiometer input up to 20kΩ, and AC current sensors
- **Output Node (P2P-O)**
  2x 4-20mA isolated analogue outputs that are easy to scale to your desired range
- **Flexible IO**
  Each of the Twin Link units also offers 4 digital inputs, 2 digital outputs, and 2 relay outputs, which are simple to program for a range of setpoint functions

Simple setup using your PC

Setting up your wireless Point-to-Point system is fast and easy with Define ToolBox (see p63).

Simply connect the Twin Link Input Node (P2P-I) to your PC via USB (Bridge Key required, see p34), and you'll be up and running in no time.

Select from a wide range of pre-calibrated input types, easily scale your analogue outputs, and configure your IOs for mimicking, alarms, and sophisticated remote control of other equipment.

FC 2ACTT-1409 CE R-NZ E2180

Power

Power supply 9–36V DC, 2.5VA max

Isolation 1500V AC between power supply and input or output channels

Transmission

RF data rate 250Kb/s

RF frequency range 2405-2475MHz

RF transmission power +20dBm
(10dBm selectable in soft ware for regions with transmission power restrictions)

Transmission range Up to 1.5km (0.9mi) LOS with supplied antenna (WG-3DBI). All nodes must be set to full power (+20dBm) for max range.

RF receiver sensitivity -110dBm

Number of RF channels 15

Number of wireless nodes Up to 17 nodes per mesh (1x P2P-I, 1x P2P-O, 15x P2P-R)

Spreading method Direct sequence

Modulation O-QPSK

USB programming

Simple programming using Define ToolBox (p63). Requires Bridge Key (sold separately, p34).

Protocols Modbus RTU

Serial data rate 9600 baud, 8-N-1

Construction

35mm DIN rail mount casing IP20 rated - Install in a protective enclosure. Installation Category II; Pollution Degree 2; Flame resistant

Dimensions (H x W x D) 101 x 23 x 120mm (3.98 x 0.91 x 4.72")

Dimensions (H x W x D, with included antenna) 150 x 23 x 146mm (5.91 x 0.91 x 5.75")

Single unit weight 156g (5.5oz), with included antenna and plugs

Universal inputs

2x Input channels Universal input

Available on P2P-I (Input)

Thermocouple input

K Type	-200 to 1260°C	(-328 to 2300°F)
B Type	400 to 1800°C	(752 to 3272°F)
E Type	-200 to 700°C	(-328 to 1292°F)
J Type	-200 to 1000°C	(-328 to 1832°F)
R Type	0 to 1700°C	(32 to 3092°F)
S Type	0 to 1700°C	(32 to 3092°F)
T Type	-200 to 400°C	(-328 to 752°F)
N Type	-200 to 1300°C	(-328 to 2372°F)

RTD input

PT100 3-wire RTD DIN 43760:1980
PT1000 3-wire RTD standard
-200 to 300°C (-328 to 572°F), 0.01°C res
-200 to 800°C (-328 to 1472°F), 0.1°C res

Current input 0/4–20mA

Voltage input ±200mV, -200mV to 1V, 0-10V, 0-18V

Potentiometer input 3-Wire; Low range (<2KΩ) or High range (>2KΩ)

Digital pulse Open collector (NPN, PNP sensors), 0–2500Hz. General frequency, flow rate or RPM

AC current sensor input Current transformer (Define ACCS-420/010) 0-10V or 4-20mA output

Analogue outputs

Available on P2P-O (Output)

2x Analogue outputs Isolated 4–20/20–4mA DC

Power supply Loop powered

Resolution 15 bits, 16000 steps

Loop drop 10V max

Linearity & repeatability 0.1% FSO max

Accuracy 0.1% FSO max

Ambient drift 50ppm/°C FSO max

Isolation to Digital IO GND 1400Vrms for 1min. Working voltage 125V DC

Digital IO's

Available on P2P-I (Input) & P2P-O (Output)

4x Digital inputs Max rate 1Hz. Selectable sink/source. Suitable for clean contacts, NPN, PNP and voltage inputs (low input <1.4V DC, high input 1.4–30V DC)

Max continuous input 20V DC

Not isolated to power supply common

2x Digital outputs Open drain (1A, 30V DC max)

Relay outputs

Available on P2P-I (Input) & P2P-O (Output)

2x Form A relays 5A 250V AC / 5A 30V DC

Isolation to sensor and user input commons 2300Vrms for 1min. Working voltage 250V AC

Life expectancy 100K cycles min at full load rating

Environmental conditions

Operating temperature -20 to 55°C (-4 to 131°F)

Storage temperature -20 to 65°C (-4 to 149°F)

Operating humidity 0–85% non-condensing

Altitude 2000m (6561ft)

Compliances

IP20 enclosure rating

FCC ID: 2ACTT-1409 47 Code of Federal Regulations; Part 15 - Radio Frequency Devices; Subpart C - Intentional Radiators, including Section 15.247 - Operation in the band 2400 –2483.5MHz

AS/ANS 4268:2012 Radio equipment and systems - Short range devices - Limits and methods of measurement

ETSI EN 300 440-2, V1.4.1, 2010 Electromagnetic compatibility and Radio spectrum matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 1GHz to 40GHz frequency range; Part 2: Harmonised EN under article 3.23 of the R&TTE Directive

EN 301 489-3, V1.6.1, 2013 Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short Range Devices (SRD) operating on frequencies between 9kHz and 40GHz

Order Code **TWIN-LINK**

(See p15 for accessories)