



# PointScan/130™



## 8-Channel (12/24 VDC/VAC) Digital Input & 8-Channel (4 to 20 mA) Analog Input Module

### Features

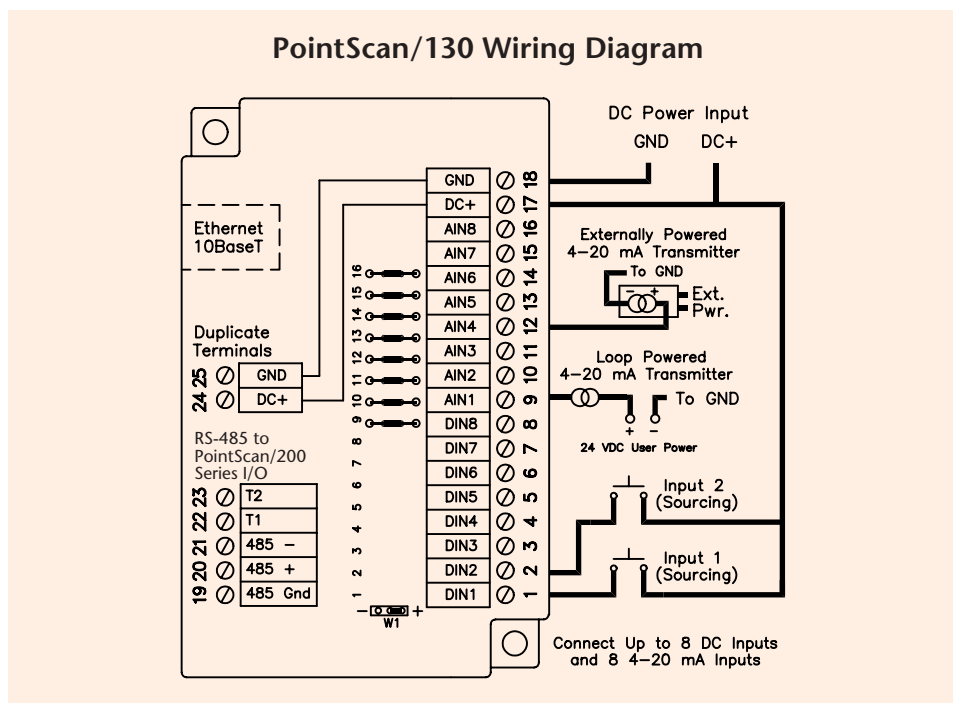
- 8 digital inputs
  - 12/24 VDC/VAC input range
  - DC sinking/sourcing or AC wiring
  - Programmable digital filtering
  - 100-Hz max count rate per channel
  - 2-kHz high-speed counter (channel 1 only)
- 8 single-ended analog inputs
  - 4 to 20 mA current inputs with 14-bit resolution
  - User-configurable filter settings for noise rejection
  - Field replaceable current shunts
- Hot-swap module replacement with plug-and-play start-up
- Self-calibrating for reduced maintenance
- Ethernet (10BaseT @ 10 Mbps) and RS-485 ports with 1200 Vrms isolation



The PointScan/130 reduces cost by providing both analog and digital inputs in a single module

Eight 12/24 VDC/VAC digital inputs are available for monitoring a wide variety of digital devices. They can be user-configured as either sinking or sourcing inputs. Eight 10 to 30 VDC digital outputs are provided for control, and also can be individually configured as time proportioned outputs. Eight 4 to 20 mA inputs provide 14-bit, high-resolution analog measurements, and are typically used to monitor sensors and transmitters. PointScan/130™ features include low-noise inputs with on-board filtering, isolated Ethernet (10BaseT @ 10 Mbps) port, isolated RS-485 port, hot-swap module replacement, plug-and-play operation, and self-calibration.

**Digital Inputs.** The eight digital inputs can be jumper configured as either sinking or sourcing (24 VDC typical). These inputs can also be user-configured for either slow or fast filter response times. In “fast” mode there is minimal filtering, with channels responding to DC input changes in 2 ms. In “slow” mode there is more filtering as channels look for stable inputs for 25 ms (20 Hz counting). Slow mode is typically used for either noisy environments (e.g. mechanical switch closures) or when reading AC inputs. Additional features of the PointScan/130 include the ability to configure channel 1 only as a 2-kHz counter input. Count



mode uses analog input registers to accumulate the positive transitions (OFF to ON) of each input.

**Field Replaceable Current Shunt.** Each of the PointScan/130's eight analog input channels has a 100 Ohm precision shunt on its input, creating a 2V signal when a

full-scale 20 mA is applied. The placement of this shunt in the PointScan/130 terminal base maintains a continuous circuit, even if the analog module is removed. If an excessive voltage is applied to an input, shunts will blow to provide circuit protection, and they are socketed for easy field replacement.



# PointScan/130™

## Specifications & Ordering Information

**Open Loop Detection.** The PointScan/130's diagnostics are capable of detecting open instrumentation loops. On a per-channel basis a unique low limit (below 4 mA) value can be defined that signals a loss of current to PC.

**Programmable Input Update Time.** The PointScan/130's analog inputs are integrated to eliminate the effects of unwanted noise. The slowest scan setting of 100 ms (5 cycles at 50 Hz and 6 cycles at 60 Hz) is used to eliminate power-line generated noise; the fastest scan time for 8 channels is 5 ms.

**Network Isolation.** The PointScan/130 has a single Ethernet (10BaseT) port that is isolated from the PC by 1200 Vrms, and a single RS-485 port that is also isolated by 1200 Vrms. This isolation protects PCs from damage caused by high voltages and protects the system from ground loops. The result is more reliable measurements in high-voltage environments.

**Field I/O connection.** The PointScan/130 module features a high-density, screw-terminal base and only a single input terminal is required for each of the eight analog inputs (see wiring diagram for details).

### Specifications

**Number of Digital Inputs:** 8  
**Nominal Digital Input Range:** 12/24 VDC/VAC  
**Guaranteed ON Voltage:** 9 VDC/VAC  
**Max Input Voltage:** 30 VDC  
**Guaranteed OFF Voltage:** 5.0 VDC  
**Guaranteed OFF Current:** 1.4 mA  
**Input Resistance:** 3.6K Ohms  
**Nominal Input Current @ 24 VDC:** 6.7 mA  
**Filtered Mode ON/OFF Delay:** 25 ms\*  
**Filtered Mode Count Feature:** 10 Hz max  
**Fast Mode Count Feature:** 100 Hz max; 2 kHz on channel 1 only  
**Fastest Scan Rate (8 Channels):** 2 ms\*  
**Number of Analog Inputs:** 8  
**Analog Input Range:** 4 to 20 mA  
**Analog Input Resolution:** 14 bits (0.01%)  
**Full-Scale Accuracy @ 20°C:** ±0.05%  
**Span & Offset Temp. Coefficient:** ±50 ppm per °C typical  
**Input Impedance:** 100 Ohms  
**Input Current Protection:** Fusible shunts  
**Fastest Scan Rate (8 Channels):** 5 ms\*  
**Ethernet Communications**  
**Number of Ethernet I/O Nodes:** 16,000  
**Ethernet Port on Each Module:** 10BaseT@10Mbps  
**Protocols Supported:** TCP/IP, MODBUS ASCII/RTU  
**Number of I/O per Node:** 512  
**Required Supply Voltage:** 10 to 30 VDC (0.75W typical)  
**Operating Temperature Range:** -30° to +70°C  
**Storage Temperature Range:** -40° to +85°C  
**Flammability (Module Plastic):** UL 94V-0 materials  
**Electrical Safety:** UL 508, CSA C22.2/14; EN61010-1 (IEC1010), CE  
**EMI Emissions:** FCC part 15, ICES-003, Class A; EN55022, CE  
**EMC Immunity:** EN50082-1 (IEC801-2, 3, 4) CE  
**Surge Withstand:** IEEE-472 (ANSI C37.90)  
**Vibration:** IEC68-2-6  
**Hazardous locations:** UL1604, CSA C22.2/213-M1987, (Class I, Div 2, Groups A, B, C, D), EN50021 (zone 2)

### Ordering Information

<b>Description</b>	<b>Part No.</b>
8-channel (12/24 VDC/VAC) digital input and 8-channel (4 to 20 mA) analog input module with isolated RS-485	PointScan/130
Optional hardcopy PointScan/100 series user's manual	1085-0901

For complete information on accessories and cables, visit [www.iotech.com/acc](http://www.iotech.com/acc)

### Related Products

<b>Hardware</b>	
PointScan/440	p. 265
PointScan/443	p. 268
<b>Software</b>	
KEPServerEX	p. 271
KEPServerEX Lite	p. 271

\* I/O register update time does not include external communications