



# PointScan/108™



## 8-Channel (4 to 20 mA) Analog Input & 4-Channel (4 to 20 mA) Analog Output Module

### Features

- Eight single-ended 4 to 20 mA current inputs with 14-bit resolution
- Four single-ended 4 to 20 mA current outputs with 16-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 and RS-485 ports with 1200 Vrms isolation



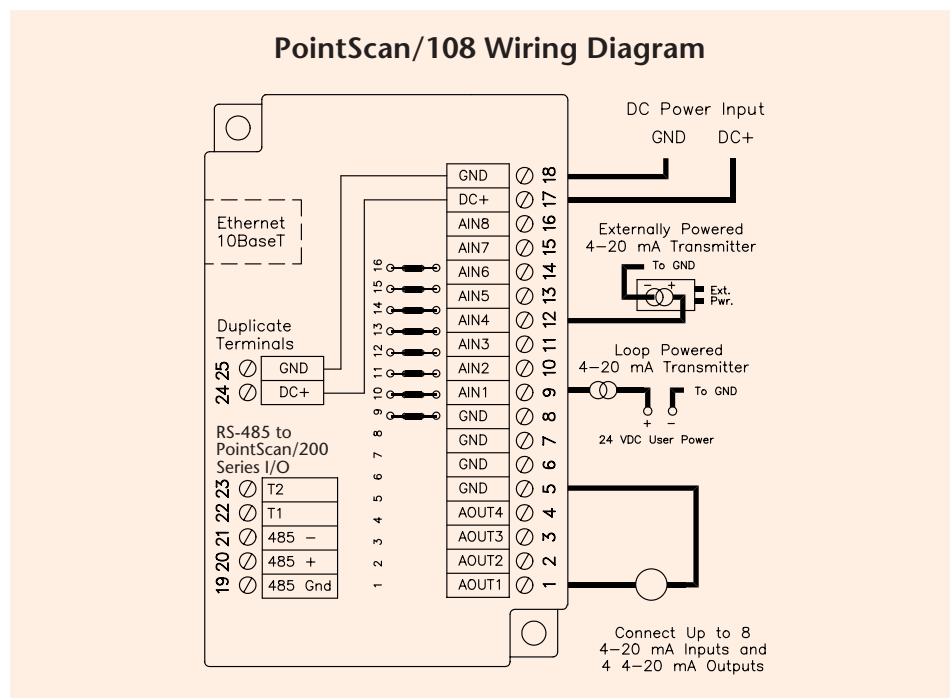
Eight 4 to 20 mA inputs provide analog measurements with 14-bit resolution, and feature on-board filtering. These low-noise inputs are typically used to monitor sensors and transmitters. Four 4 to 20 mA outputs feature 16-bit resolution providing “stepless” outputs for critical control applications. PointScan/108™ features include an isolated Ethernet (10BaseT @ 10 Mbps) port, an isolated RS-485 port, hot-swap module replacement, plug-and-play operation, and self-calibration.

Select a PointScan/108 for control applications where a cost-effective combination of high resolution analog inputs and outputs are required

**Field Replaceable Current Shunt.** Each of the PointScan/108's eight 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/108's 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. Shunts are socketed for easy field replacement.

**Open Loop Detection.** The PointScan/108'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 (to PC) a loss of current.

**Programmable Integration Period.** The PointScan/108's analog inputs are integrated to eliminate the effects of unwanted noise. The slowest 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 16 channels is 5 ms.



**Current Loop Power.** The four analog outputs are internally powered from the DC power (10 to 30V) supplied to the screw terminals on the base.

**Network Isolation.** The PointScan/108 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.** A high-density, screw-terminal base and only a single input terminal is required for each of the 16 analog inputs (see wiring diagram for details).



# PointScan/108™

## Specifications

### Specifications

**Number of Analog Inputs:** 8  
**Analog Input Range:** 4 to 20 mA  
**A/D Resolution:** 14 bits (0.01%)  
**Span & Offset Temp. Coefficient:** ±50 ppm per °C typical  
**Input Impedance:** 100 Ohms  
**Input Current Protection:** Fusible shunts  
**Fastest Scan Rate (16 Channels):** 5 ms\*  
**Number of Analog Outputs:** 4  
**Output Range:** 4 to 20 mA  
**D/A Resolution:** 16 bits (less than 1 mA)  
**Full-Scale Accuracy @ 20°C:** ±0.02%  
**Span & Offset Temp. Coefficient:** ±50 ppm per °C typical  
**Max Output Settling Time:** 5 ms (to 0.05%)  
**Required User Supplied Voltage:** 10 to 30 VDC  
**Load Resistance Range:** 0 to 750 Ohms (@ +24 VDC supply)  
**Short Circuit Protection:** Current limiting  
**Fastest Scan Rate (all channels):** 5 ms\*

### Ethernet Communications

**Number of Ethernet I/O Nodes:** 16,000  
**Ethernet Port on Each Module:** 10BaseT@10 Mbps  
**Protocols Supported:** TCP/IP, MODBUS ASCII/RTU  
**Number of I/O per Node:** 384  
**Isolation (from Ethernet Port):** 1200 Vrms 1 minute  
**Required Supply Voltage:** 0 to 30 VDC (0.75W typical)  
**Operating Temperature Range:** -30° to +70°C  
**Storage Temperature Range:** -40° to +85°C  
**Humidity (Non-Condensing):** 5 to 95%  
**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:** UL 1604, CSA C22.2/213-M1987, (Class I, Div 2, Groups A, B, C, D), EN50021 (zone 2)

### Ordering Information

Description	Part No.
8-channel (4 to 20 mA) analog input and 4-channel (4 to 20 mA) analog output module	PointScan/108
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

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

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