ioPAC 8500 Series I/O Modules

16 digital inputs, 24 VDC, sink/source, dry contact type

85M-1602-T: 16 digital inputs, 24 VDC, sink/source, dry contact type

Inputs and Outputs
Digital Inputs: 16 channels
Isolation: 3k VDC or 2k Vrms

Digital Inputs
Sensor Type: Wet contact (NPN or PNP), dry contact
I/O Mode: DI or event counter
Dry Contact:
- On: short to GND
- Off: open

Wet Contact (DI to GND):
NPN (DI to GND):
- On: 0 to 3 VDC
- Off: 10 to 30 VDC

PNP (DI to GND):
- Off: 0 to 3 VDC
- On: 10 to 30 VDC

Common Type: 8 points per COM
Counter Frequency: 5 kHz
Digital Filtering Time Interval: Software selectable (by 0.1 ms)

Physical Characteristics
Wiring: I/O cable, max. 16 AWG
Connector: Spring type terminal block

Environmental Limits
Operating Temperature: -40 to 75°C

Power Requirements
Power Consumption: 1.2 W @ 3.3 VDC

MTBF (mean time between failures)
Time: 1,132,561 hrs
Database: Telcordia (Bellcore)

RoHS EN 50121 CE FC

16 digital outputs, 24 VDC, sink type

85M-2600-T: 16 digital outputs, 24 VDC, sink type

Inputs and Outputs
Digital Outputs: 16 channels
Isolation: 3k VDC or 2k Vrms

Digital Outputs
Type: Sink
I/O Mode: DO or pulse output
Pulse Output Frequency: 5 kHz
Over-voltage Protection: 45 VDC
Over-current Protection: 2.6 A (4 channels @ 650 mA)
Over-temperature Shutdown: 175°C (typical), 150°C (min.)
Current Rating: 200 mA per channel

Physical Characteristics
Wiring: I/O cable, max. 16 AWG
Connector: Spring type terminal block

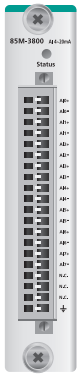
Environmental Limits
Operating Temperature: -40 to 75°C

Power Requirements
Power Consumption: 0.85 W @ 3.3 VDC

MTBF (mean time between failures)
Time: 792,571 hrs
Database: Telcordia (Bellcore)

RoHS EN 50121 CE FC

8 analog inputs, 4 to 20 mA



85M-3800-T: 8 analog inputs, 4 to 20 mA

Inputs and Outputs
Analog Inputs: 8 channels
Isolation: 3k VDC or 2k Vrms

Analog Inputs
Type: Differential
Resolution: 16 bits
I/O Mode: 4 to 20 mA (wire off)
Accuracy:
±0.1% FSR @ 25°C
±0.3% FSR @ -40 and 75°C
Sampling Rate:
- All channels: 100 samples/sec
- Per channel: 12.5 samples/sec

Input Impedance: 125 ohms (min.)

Physical Characteristics
Wiring: I/O cable, max. 16 AWG
Connector: Spring type terminal block

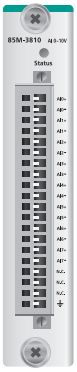
Environmental Limits
Operating Temperature: -40 to 75°C

Power Requirements
Power Consumption: 1.05 W @ 3.3 VDC

MTBF (mean time between failures)
Time: 1,512,906 hrs
Database: Telcordia (Bellcore)

RoHS EN 50121 CE FC

8 analog inputs, 0 to 10 VDC



85M-3810-T: 8 analog inputs, 0 to 10 VDC

Inputs and Outputs
Analog Inputs: 8 channels
Isolation: 3k VDC or 2k Vrms

Analog Inputs
Type: Differential
Resolution: 16 bits
I/O Mode: 0 to 10 VDC
Accuracy:
±0.1% FSR @ 25°C
±0.3% FSR @ -40 and 75°C
Sampling Rate:
• All channels: 100 samples/sec
• Per channel: 12.5 samples/sec
Input Impedance: 200 k-ohms (min.)

Physical Characteristics
Wiring: I/O cable, max. 16 AWG
Connector: Spring type terminal block

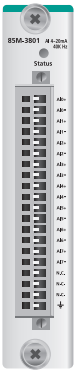
Environmental Limits
Operating Temperature: -40 to 75°C

Power Requirements
Power Consumption: 1.04 W @ 3.3 VDC

MTBF (mean time between failures)
Time: 1,530,690 hrs
Database: Telcordia (Bellcore)

RoHS EN 50121 CE FC

8 analog inputs, 4 to 20 mA, 40 kHz



85M-3801-T: 8 analog inputs, 4 to 20 mA, 40 kHz

Inputs and Outputs
Analog Inputs: 8 channels
Isolation: 3k VDC or 2k Vrms

Analog Inputs
Type: Differential
Resolution: 16 bits
I/O Mode: 4 to 20 mA (wire off)
Historical Data Buffering: 60KB per channel, 6 seconds data buffer at 5KHz
Accuracy:
±0.1% FSR @ 25°C
±0.3% FSR @ -40 and 75°C
Sampling Rate:
• All channels: 40k samples/sec
• Per channel: 5k samples/sec
Input Impedance: 125 ohms (min.)

Physical Characteristics
Wiring: I/O cable, max. 16 AWG
Connector: Spring type terminal block

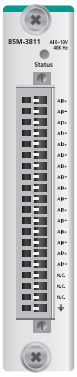
Environmental Limits
Operating Temperature: -40 to 75°C

Power Requirements
Power Consumption: 1.25 W @ 3.3 VDC

MTBF (mean time between failures)
Time: 1,410,655 hrs
Database: Telcordia (Bellcore)

RoHS EN 50121 CE FC

8 analog inputs, 0 to 10 VDC, 40 kHz



85M-3811-T: 8 analog inputs, 0 to 10 VDC, 40 kHz

Inputs and Outputs
Analog Inputs: 8 channels
Isolation: 3k VDC or 2k Vrms

Analog Inputs
Type: Differential
Resolution: 16 bits
I/O Mode: 0 to 10 VDC
Historical Data Buffering: 60 KB per channel, 6 seconds data buffer at 5 kHz
Accuracy:
±0.1% FSR @ 25°C
±0.3% FSR @ -40 and 75°C
Sampling Rate:
• All channels: 40k samples/sec
• Per channel: 5k samples/sec
Input Impedance: 20 M-ohms (min.)

Physical Characteristics
Wiring: I/O cable, max. 16 AWG
Connector: Spring type terminal block

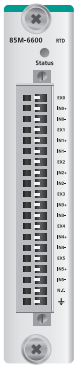
Environmental Limits
Operating Temperature: -40 to 75°C

Power Requirements
Power Consumption: 1.25 W @ 3.3 VDC

MTBF (mean time between failures)
Time: 1,426,112 hrs
Database: Telcordia (Bellcore)

RoHS EN 50121 CE FC

6 RTD input



85M-6600-T: 6 RTD inputs

Inputs and Outputs
RTD Inputs: 6 channels
Isolation: 3K VDC or 2K Vrms

RTD Inputs
Input Type:
- PT50, PT100, PT200, PT500 (-200 to 850°C)
- PT1000 (-200 to 350°C)
- JPT100, JPT200, JPT500 (-200 to 640°C)
- JPT1000 (-200 to 350°C)
- NI100, NI200, NI500 (-60 to 250°C)
- NI1000 (-60 to 150°C)
- NI120 (-80 to 260°C)
- Resistance of 310, 620, 1250, and 2200

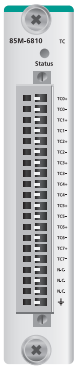
Sampling Rate (single channel):
- All channels: 12 samples/sec
- Per channel: 2 samples/sec

Resolution: 0.1°C or 0.1 ohm
Accuracy: ±0.1% FSR @ 25°C
±0.3% FSR @ -40 and 75°C
Input Impedance: 625 kohms (min.)
Physical Characteristics
Wiring: I/O cable, max. 16 AWG
Connector: Spring type terminal block

Environmental Limits
Operating Temperature: -40 to 75°C

EN 50121

8 Thermocouple input



85M-6810-T: 8 thermocouple inputs

Inputs and Outputs
Analog Inputs: 8 channels
Isolation: 3K VDC or 2K Vrms

Thermocouple Inputs
Sensor Type: J (0 to 750°C), K (-200 to 1250°C), T (-200 to 350°C), E (-200 to 900°C), R (-50 to 1600°C), S (-50 to 1760°C), B (600 to 1700°C), N (-200 to 1300°C)
Millivolt Type:
- Mode: ±78.126 mV, ±39.062 mV, ±19.532 mV
- Fault and over-voltage protection: -35 to +35 VDC (power off); -25 to +30 VDC (power on)

Sampling Rate (single channel):
- All channels: 12 samples/sec
- Per channel: 1.5 samples/sec

Resolution: 16 bits
Accuracy: ±0.1% FSR @ 25°C
±0.3% FSR @ -40 and 75°C
Input Impedance: 1 Mohms (min.)
Physical Characteristics
Wiring: I/O cable, max. 16 AWG
Connector: Spring type terminal block

Environmental Limits
Operating Temperature: -40 to 75°C

EN 50121

4 serial ports

85M-5401-T: 4 serial ports

Serial Communication
Interface: 4 RS-232/422/485 ports, software selectable (DB44 male)
Isolation: 3K VDC or 2K Vrms
Note: DB44 to 4-port DB9 cable included in the package.

Serial Communication Parameters
Parity: None, Even, Odd
Data Bits: 7, 8
Stop Bits: 1, 2
Flow Control: RTS/CTS, XON/XOFF
Baudrate: 300 bps to 921.6 kbps

Serial Signals
RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-422: Tx+, Tx-, Rx+, Rx-, GND
RS-485-4w: Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w: Data+, Data-, GND

Physical Characteristics
Connector: DB44 male

Environmental Limits
Operating Temperature: -40 to 75°C

Power Requirements
Power Consumption: 1.24 W @ 3.3 VDC

MTBF (mean time between failures)
Time: 596,611 hrs
Database: Telcordia (Bellcore)

EN 50121

Common Specifications

Environmental Limits
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)

Standards and Certifications
Safety: UL 508
EMI: EN 55022, EN 61000-3-2, EN 61000-3-3, FCC Part 15 Subpart B Class A
EMS: EN 55024, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11
Shock: IEC 60068-2-27
Freefall: IEC 60068-2-32
Vibration: IEC 60068-2-6
Rail Traffic: EN 50155, EN 50121-3-2, EN 50121-4
Note: Please check Moxa's website for the most up-to-date certification status.

Warranty
Warranty Period: 5 years
Details: See www.moxa.com/warranty