SPECTRUM CONTROLS

An **Allied Motion** *Company*

Enhancing Your Rockwell Automation Control System

RA Technology Partner
A ROCKWELL AUTOMATION PARTNER

SPECTRUM
C O N T R O L S

An Allied Motion Company

Est. 1983

Spectrum Controls is the first company to build licensed, core-technology, I/O modules for Rockwell Automation. We offer a full *Spectrum* of industrial controls products!

As a leader in I/O, our modules lower your costs and enhance your system capabilities. Whether it's mixing different signal types on a single *Universal Analog* input card or putting more in your I/O rack with our *High-Density* modules, we help you win. If process is your game, our *Isolated Analog* and *Analog with HART* modules are just the ticket! These are just a few of the advantages of using I/O from Spectrum Controls.

Universal Industrial Gateway, with 12 built-in protocols provides communications between Rockwell Automation products and other devices.

The full line of *InView* industrial LED message displays allows you to communicate critical production and alarm information to the factory floor in real time from up to 450 feet away.

Spectrum Controls, Inc. is a subsidiary of Allied Motion Technologies Inc.

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A ROCKWELL AUTOMATION PARTNER

Spectrum Controls
1705 132nd Ave NE
Bellevue, WA 98005
United States

+1.425.746.9481

spectrum@spectrumcontrols.com

spectrumcontrols.com

Inside Sales
Spectrum Controls
+1.425.746.9481
spectrum@spectrumcontrols.com

Western Regional Sales Manager
Rebecca DeVaney
+1.206.618.0637
rdevaney@spectrumcontrols.com

Northeast Regional Sales Manager
Elliot Fixler
+1.603.770.1197
efixler@spectrumcontrols.com

Southeast Regional Sales Manager
Michael Kerrigan
+1.678.575.1556
mkerrigan@spectrumcontrols.com

Midwest Regional Sales Manager
Brittney Lee
+1.630.776.9637
blee@spectrumcontrols.com

International Regional Sales Manager
Spectrum Controls
+1.425.746.9481
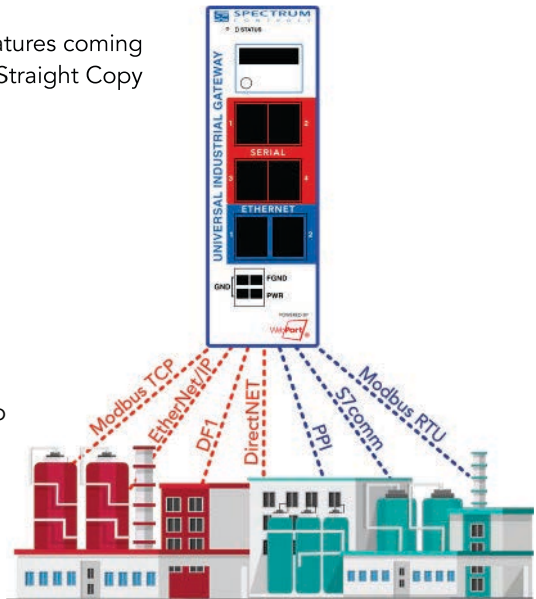spectrum@spectrumcontrols.com

Universal Industrial Gateway

Read & Write Data Between Multiple Devices with Different Protocols

- Not just a one-to-one device:
  - Any port to any port <u>and</u> any protocol to any protocol - all at the same time!
- No programming software to install:
  - Built-in browser-based configuration
- Built-in, context-sensitive Help, with step-by-step instructions:
  - No searching for a lost manual
- Field Upgradeable: more protocols and features coming
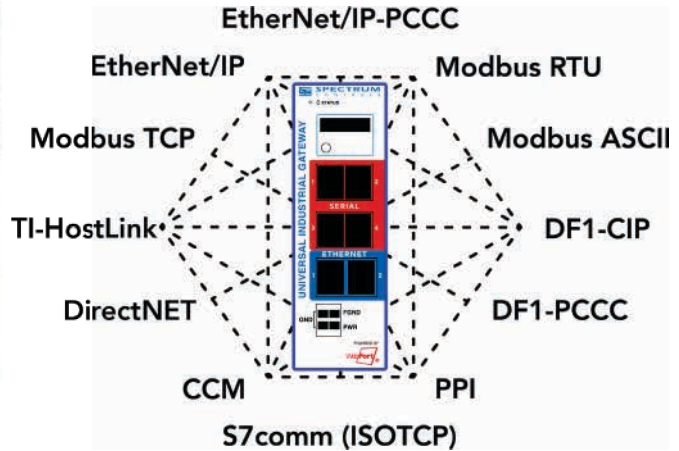- Data Formatting: Byte-Swap, Word-Swap, Straight Copy

Specifications

- 2 Ethernet Ports
- 2 or 4 Isolated Serial Ports:
  - Configurable for RS-485 & RS-232
  - Baud Rates up to 115.2 Kbps
- 8 or 12 Protocols
- 66 Protocol Combinations
- 5,000 Tag Pairs (max):
  - 50 Tag Maps with 100 Tag Pairs Per Map
- Dimensions: 3.07" x 1.89" x 4.72"
- Input Voltage: 10-24 VDC
- RoHS-compliant, UL/cUL Listed ANSI ISA
  12.12.01 (Class I, Div 2, Groups ABCD),
  CE EMC, ATEX, CCC, UKCA, FCC

Coming Soon
- Modbus support as **both** Client (Master) and Server (Slave)
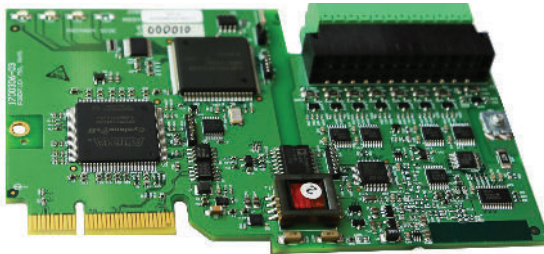- Dual subnet support - communicate with equipment on different subnets

EtherNet/IP-PCCC
EtherNet/IP
Modbus TCP
Modbus RTU
Modbus ASCII
TI-HostLink
DF1-CIP
DirectNET
DF1-PCCC
CCM
PPI
S7comm (ISOTCP)

The Universal Industrial Gateway bridges communication gaps between Rockwell Automation & other Control Systems!

Catalog Number	Serial Ports	Ethernet Ports	Protocols
WP-G-222-P1	2	2	EtherNet/IP, EtherNet/IP-PCCC, Modbus TCP, Modbus RTU, Modbus ASCII, TI HostLink, DirectNET, CCM
WP-G-242-P1	4	2	EtherNet/IP, EtherNet/IP-PCCC, Modbus TCP, Modbus RTU, Modbus ASCII, TI HostLink, DirectNET, CCM
WP-G-222-P2	2	2	EtherNet/IP, EtherNet/IP-PCCC, Modbus TCP, Modbus RTU, Modbus ASCII, DF1-PCCC, DF1-CIP, PPI, S7comm, TI-HostLink, DirectNET,
WP-G-242-P2	4	2	EtherNet/IP, EtherNet/IP-PCCC, Modbus TCP, Modbus RTU, Modbus ASCII, DF1 PCCC, DF1 CIP, PPI, S7comm, TI HostLink, DirectNET, CCM
WP-G-UPG-P2	-	-	Firmware Upgrade: Converts the -P1 into a -P2

spectrumcontrols.com/gateway

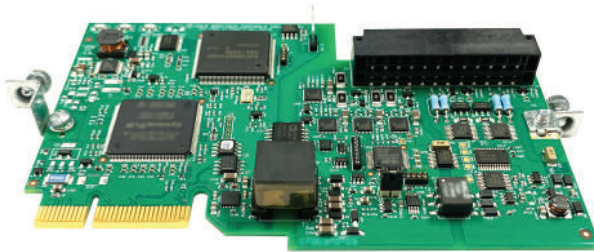# PowerFlex® Cards for 753 & 755 Drives

8-Ch Universal Analog Input

20-750sc-8U

Combine up to 8 Different Analog Input Types & Reduce System Cost

- Each input channel individually selectable to any range:
  - **-** Voltage: ±50 mV, ±100 mV, 0-5 V, 0-10 V, ±10 V
  - **-** Current: 0-20 mA, 4-20 mA
  - **-** Resistance: 0-150Ω, 0-500Ω, 0-1000Ω, 0-3000Ω
  - **-** RTD (3- or 4-wire): Pt 385/3916, Ni618/672, NiFe518, Cu427 (RTD uses channel pairs)
- 5 filter frequencies (channel-selectable) for fastest analog update times
- Full auto-calibration; on-board error checking
- Open circuit detection for most input types
- 250 VAC channel-to-chassis ground isolation; 10 VDC channel-to channel isolation
- Conformal coated

4-Ch Analog Input + 4-Ch Analog Output

20-750-IF4XOF4-SC

4 Analog Inputs & 4 Analog Outputs, Saves Card Slots & Cost

- Each input or output channel individually selectable to any range:
  - Voltage: 0-5 V, 0-10 V, ±10 V
  - Current: 0-20 mA, 4-20 mA
- High accuracy, 16-bit resolution increases your productivity!
- 6 filter frequencies (channel-selectable) for fastest analog update times
- Full auto-calibration; on-board error checking
- Open circuit detection for most input types
- 250 VAC channel-to-chassis ground isolation; 10 VDC channel-to channel isolation
- Conformal coated

POWERFLEX® CARDS

spectrumcontrols.com/powerflex

1734 Point I/O™

4-Ch Universal Analog Input

1734sc-IF4U
*1734sc-IF4UK**

4 Universal Inputs Saves Cost

- 4 Analog, 3 thermocouples, or 2 RTDs; individually selectable:
  - Voltage: ±50 mV, ±100 mV, 0-5 V, 1-5 V, 0-10 V, ±10 V
  - Current: 0-20 mA, 4-20 mA
  - Resistance: 0-3000Ω
  - Thermocouple: J, K, T, E
  - RTD: 0-1000Ω Pt 385/3916
- High accuracy, 18-bit resolution
- Channel-selectable filtering
- *Conformal coated

2-Ch Isolated Analog Output + HART

1734sc-OE2CIH
*1734sc-OE2CIHK**

HART Data to Drive Productivity!

- 2 isolated 4-20 mA with HART or...
- 2 isolated 0-20 mA without HART
- 16-bit resolution, 2-/4-wire support
- Auto-scanning of HART variables (PV, SV, TV, FV)
- HART modem per-channel for maximum speed
- HART pass-through messaging
- Open circuit detect, fault reporting, 24 V fault protection & 50 VDC channel-channel Isolation
- DTM (Device Type Manager) enables your asset management software
- *Conformal coated

2-Ch Analog Input + HART

1734sc-IE2CH
1734sc-IE2CHK*

4-Ch Analog Input + HART

1734sc-IE4CH
1734sc-IE4CHK*

Maximize System Performance by Combining Real-Time HART Data Acquisition With Standard Analog Control at a Fraction of the Cost!

- 2 or 4 channels of 4-20 mA analog + HART
- High accuracy, 16-bit resolution
- Acts as a HART master, allowing communication with HART field devices
- HART pass-through messaging
- Channel-selectable filtering for fastest analog update time and noise rejection
- User calibration and scaling if desired
- Fault reporting capability
- DTMs (Device Type Manager) enables your asset management software
- *Conformal coated

spectrumcontrols.com/1734

1756 ControlLogix™

8-Ch Universal Analog Input

1756sc-IF8U
*1756sc-IF8UK**

8 Universal Analog Inputs On a Single Card Saves Rack Space & Cost!

- Each input channel individually selectable to:
  - Voltage: ±50 mV, ±150 mV, 0-5 V, 1-5 V, 0-10 V, ±10 V
  - Current: 0-20 mA, 4-20 mA
  - Resistance: 250, 500, 1000, 2000, 3000, 4000Ω
  - RTD: Pt 385/3916, Ni618/672, NiFe518, Cu426
  - Thermocouple: J, K, T, B, E, R, S, N, C
- High accuracy: 16 to 21 bits (filter-dependent)
- User-scaling, time-stamping, and alarms
- *Conformal coated

8-Ch AC Power Monitoring Input

1756-RMS-SC

Monitor Power Usage to Reduce Energy Costs and Waste!

- 8 High accuracy, (16-bit) power inputs:
  - 1 current (CT), 1 voltage (PT)
- Provides: real power, apparent power, reactive power, power factor, RMS voltage and RMS current
- 250 VAC: channel-pair-to-channel-pair isolation, channel-to-chassis ground
- Non-typical AC waveforms supported
- Monitor motor performance

8-Ch Counter/Flowmeter Input

1756sc-CTR8
*1756sc-CTR8K**

High Density Counting = Lower Cost

- 8 incremental, 24-bit, single-ended counters, or 4 pairs of up/down or quadrature counters
- Configure each input group as: 5, 12, or 24 VDC, or 50, 200 mVpp counters, or as turbine flow
- K factor scaling for turbine flowmeters
- Use for flowmeter proving requirements
- Count direction flags; start, stop, reset, & preset control
- 4 external counter enable lines for faster counter control
- *Conformal coated

32-Ch 48VDC Discrete Input

1756sc-IC32

The Only High Density 48 VDC Solution

- 32 channels of 48 VDC input
- 8 input channels per group
- Off/On selectable filtering for 0, 1, & 2 ms
- On/Off selectable filtering for 0, 1, 2, 9, & 18 ms
- Off/On Change-of-State Enable option per input point
- 250 Volts AC RMS continuous isolation from any channel to the backplane & channel to frame ground

1756 CONTROLLOGIX™

8-Ch Universal <u>Isolated</u> Analog Input

1794sc-IF8IU

8 Universal Analog Inputs Lowers Your System Cost

- Each <u>isolated</u> input channel individually selectable to:
    - **-** Voltage: ±50 mV, ±100 mV, 0-5 V, 1-5 V, 0-10 V, ±10 V
    - **-** Current: 0-20 mA, 4-20 mA
    - **-** Resistance: 0-150Ω, 0-1000Ω, 0-3000Ω
    - **-** Thermocouple: J, K, T, B, E, R, S, N, C (Cold-junction compensation included)
    - **-** RTD (2-, 3-, or 4-wire): Pt 385/3916, Ni618/672, NiFe518, Cu426 (2 channels for 3- & 4-wire)
- 120 VAC channel-to-channel isolation
- High accuracy, 16-bit resolution
- Each channel provides open circuit detection, and high-range and low-range alarms
- 6 channel-selectable filtering for fastest analog update time and noise rejection
- Easy to configure using ladder register settings or Studio 5000® programming software

8-Ch <u>Isolated</u> Thermocouple/RTD Input

1794sc-IRT8I

8 Temperature Sensing Inputs for High Accuracy Applications

- Each <u>isolated</u> input channel individually selectable to:
    - **-** Resistance: 0-150Ω, 0-1000Ω, 0-3000Ω
    - **-** Thermocouple: J, K, T, B, E, R, S, N, C (Cold-junction compensation included)
    - **-** RTD (2-, 3-, or 4-wire): Pt 385/3916, Ni618/672, NiFe518, Cu426 (2 channels for 3- & 4-wire)
- 120 VAC channel-to-channel isolation
- High accuracy, 16-bit resolution
- Each channel provides open circuit detection, and high and low range alarms
- 6 channel-selectable filtering for fastest analog update time and noise rejection
- Easy to configure using ladder register settings or Studio 5000® programming software

1762 MicroLogix™ I/O

4-Ch Analog Input + 4-Ch Analog Output

The Highest Density Analog Inputs & Outputs for MicroLogix Controllers

1762sc-IF4OF4

4 Analog Inputs & 4 Analog Outputs, Saves Slots & Cost

- 2 current only (0-20 mA, 4-20 mA) analog inputs ***AND***
- 2 Universal analog inputs individually selectable to:
    - **-** Voltage: 0-5 V, 1-5 V, 0-10 V, ±10 V
    - **-** Current: 0-20 mA, 4-20 mA
    - **-** Thermocouple: J, K, E, T (with cold-junction compensation)
- 4 analog outputs individually selectable to:
    - **-** Current: 0-20 mA, 4-20 mA
    - **-** Voltage: 0-5 V, 1-5 V, 0-10 V, ±10 V
- High accuracy, 16-bit resolution
- Channel-selectable filtering for maximum speed with minimum noise
- For Allen-Bradley MicroLogix 1100 and 1200 systems
- Easy to configure using ladder register settings or RSLogix programming software

8-Ch Universal Analog Input

1762sc-IF8U

8 Universal Inputs Lowers System Cost

- Each input channel individually selectable to:
  - Voltage: ±50 mV, ±100 mV, 0-5 V, 1-5 V, 0-10 V, ±10 V
  - Current: 0-20 mA, 4-20 mA
  - Resistance: 0-150Ω, 0-1000Ω, 0-3000Ω
  - Thermocouple: J, K, T, B, E, R, S, N, C (cold-junction compensation uses 1 channel)
  - RTD (2-, 3-, or 4-wire): Pt 385/3916, Ni618/672, NiFe518, Cu426 (2 channels for 3- & 4-wire)
- High accuracy, 16-bit resolution
- Channel-selectable filtering
- Easy to configure using ladder register settings or RSLogix programming software

8-Ch Analog Output

1762sc-OF8

THE High Density Analog Output Solution!

- *Lowest cost per analog output*
- Each output individually selectable to:
  - Voltage: 0-5 V, 1-5 V, 0-10 V, ±10 V
  - Current: 0-20 mA, 4-20 mA
- High accuracy, 16-bit resolution
- Perfect fit for high I/O count analog output applications
- Easy to configure using ladder register settings or RSLogix programming software

1762 MICROLOGIX™ I/O

spectrumcontrols.com/1762

1769 Compact I/O™

4-Ch Analog Input + HART   **4-Ch Analog Output + HART**   **8-Ch Universal Analog Input**

1769sc-IF4IH
*1769sc-IF4IH-K**

1769sc-OF4IH
*1769sc-OF4IH-K**

1769sc-IF8U
*1769sc-IF8U-K**

The Only HART Solutions for CompactLogix®

Common specifications...

- **Isolated analog inputs/outputs**
- Each channel selectable to:
  - 4-20 mA with HART
  - 0-20 mA without HART
  - Voltage: 0-5 V, 1-5 V, 0-10 V, ±10 V without HART
- HART PV, SV, TV, FV
- Acts as a HART master, allowing communication with HART field devices
- HART modem per-channel for maximum speed
- HART pass-through messaging
- 710 VDC isolation channel-to-channel
- *Conformal coated

8 Universal Inputs for Lowest Cost

- Each channel individually selectable to:
  - Voltage: ±50 mV, ±100 mV, 0-5 V, 1-5 V, 0-10 V, ±10 V
  - Current: 0-20 mA, 4-20 mA
  - Resistance: 0-150, 0-1000, 0-3000Ω
  - RTD: Pt 385/3916, Ni618/672, NiFe518, Cu426 (2 channels pairs for 3- or 4-wire)
  - Thermocouple: J, K, T, B, E, R, S, N, C
  - Channel-selectable filtering
- *Conformal coated

6-Ch Isolated RTD/Resistance Input

1769sc-IR6I
1769sc-IR6I-K*

6-Ch Isolated Thermocouple Input

1769sc-IT6I
1769sc-IT6I-K*

The Only Isolated RTD or Thermocouple Solutions for CompactLogix®

- 6 **Isolated** inputs individually selectable to:
  - Resistance: 0-150Ω, 0-500Ω, 0-1000Ω, 0-3000Ω
  - RTD (2-, 3-, or 4-wire): 100Ω, 200Ω, 500Ω & 1000Ω, Pt 385/3916, 100Ω Ni618, 120Ω Ni672, 604Ω NiFe518, 10Ω Cu426
- 6 filter frequencies (individually selectable by channel) for fastest update times and noise rejection
- Open circuit detect & individually programmable high and low alarms for each channel
- High accuracy, 16-bit resolution
- *Conformal coated

- 6 **Isolated** inputs individually selectable to:
  - Voltage: ±50 mV, ±100 mV
  - Thermocouple: J, K, T, E, R, B, S, N, C, L
- Built-in cold-junction thermocouple compensation
- 6 filter frequencies (individually selectable by channel) for fastest update times and noise rejection
- Open circuit detection & individually programmable high and low alarms for each channel
- High accuracy, 16-bit resolution
- 125 VAC isolation: channel-to-channel, field-wiring-to-backplane & field-wiring-to-chassis-ground
- *Conformal coated

16-Ch High-Speed Discrete Inputs (Sourcing)

5069-IV16F-SC
*5069-IV16FK-SC**

16-Point 24-Volt Discrete Sourcing Input Module

- Sixteen configurable 24-VDC sourcing input points
- Sourcing inputs
- Features 250 VAC RMS, basic insulation type channel-to-backplane isolation
- Includes Add-on Profile to allow full configuration using Studio 5000® software
- Provides low power consumption
- Applicable for voltages from 10 VDC to 32 VDC
- Timestamp of input at an accuracy of ±10 µS
- Inputs allow event recording and pattern matching
- *Conformal coated

16-Ch High Speed Discrete Outputs (Sinking)

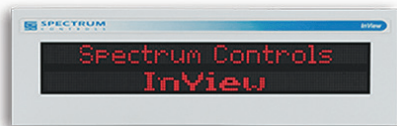*5069-OV16F-SC*
*5069-OV16FK-SC**

16-Point 24-Volt Discrete Sinking Output Module

- Sixteen Configurable 24-VDC sinking output points
- Provides configuration of individual output points to specific states when the module is in Program mode or Communications Fault mode
- Features 250 VAC RMS, basic insulation type channel-to-backplane isolation
- Includes Add-on Profile to allow full configuration using Studio 5000® software
- Provides low power consumption
- Applicable for voltages from 10 VDC to 32 VDC
- Scheduled outputs at an accuracy of ±10 µS
- Delay time for outputs (backplane to screw) a fast ±10 µS
- *Conformal coated

spectrumcontrols.com/5069

5069 COMPACT 5000™

InView™ Industrial LED Displays
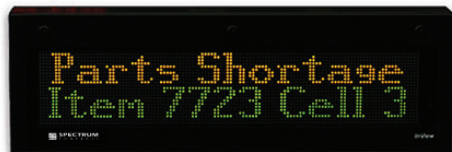
2-Inch High Display

2706-P22R-SC (12" wide)

4-Inch High Display

2706-P42R-SC (36" wide)   *2706-P44R-SC (72" wide)*
2706-P42C2-SC (36" wide) *2706-P44C2-SC (72" wide)*

7-Inch High Display

2706-P72CN2-SC (36" wide)
2706-P72CN1-SC (36" wide)*
2706-P74CN2-SC (60" wide)
2706-P74CN1-SC (60" wide)*

10-Inch High Display

2706-P92C2-SC (40" wide)
2706-P92C2X-SC (40" wide)*
2706-P94C2-SC (69" wide)
2706-P94C2X-SC (69" wide)*

Message Visibility From Up To 450 Feet Away!

- Vastly superior viewing angle than LCD & most LED displays
- Dynamic messaging, with the use of variables, for real-time information
- NEMA-rated enclosures, purpose-built for the industrial environment
- Fully licensed Rockwell Automation technology

*NEMA 4X Stainless Steel Enclosures Available

spectrumcontrols.com/catalog

InView™ Communication Modules

Preferred Compatibility with Rockwell Automation Controllers!

Insanely Easy to Program!

- No programming software to install or lose:
    - Built-in, easy & intuitive browser-based programing
- No searching for a lost programming manual:
    - Built-in context-sensitive Help with step-by-step instructions
- Upgrade your old InView comms module!
- Supports: EtherNet/IP, EtherNet TCP/IP & Modbus TCP/IP

InView Communications Module Selection Guide

	2706-PENETP2-SC	2706-PENETM2-SC	2706-PENETM2C2-SC	2706-PENETK2-SC
P2 displays	✓	•	•	•
P4 displays	•	✓	•	•
P4xC2 displays	•	•	✓	•
P7 displays	•	•	•	✓
P9 displays	•	•	•	✓
EtherNet/IP	✓	✓	✓	✓
EtherNet TCP/IP	✓	✓	✓	✓
Modbus TCP/IP	✓	✓	✓	✓

spectrumcontrols.com/inview

1746 SLC™ 500

4-Ch Isolated Analog Output (C)	4-Ch Isolated Analog Output (V/C)	4/8-Ch Counter/Flowmeter

1746sc-INO4I

1746sc-INO4VI

1746sc-CTR4
1746sc-CTR8

- 4 isolated analog inputs individually selectable to:
  - Current: 0-20 mA, 0-21 mA, 4-20 mA
- Use any combination of input types at one time
- High accuracy, 16-bit resolution
- Easy to configure using ladder register settings or RSLogix programming software

- 4 isolated analog inputs individually selectable to:
  - Voltage: 0-5 V, 1-5 V, 0-10 V, ±10 V
  - Current: 0-20 mA, 0-21 mA, 4-20 mA
- High accuracy, 16-bit resolution
- Easy to configure using ladder register settings or RSLogix programming software

- 4 or 8 incremental, single-ended counters or up to four pairs for up/down or quadrature counters
- Configure each input group as 5, 12, or 24 VDC counters, or as turbine flow (Variable Reluctance Coil) AC inputs
- Counter Speed: 0 Hz to 50 kHz
- Includes scaling K factor for turbine flowmeters
- Use for flowmeter proving requirements

4-Ch Isolated Analog Input (C)

1746sc-INI4I

- 4 isolated analog inputs individually selectable to:
  - Current: 0-20 mA, 4-20 mA
- High accuracy, 16-bit resolution
- Easy to configure using ladder register settings or RSLogix programming software

4-Ch Isolated Analog Input (V/C)

1746sc-INI4VI

- 4 isolated analog inputs individually selectable to:
  - Voltage: 0-5 V, 1-5 V, 0-10 V, ±10 V
  - Current: 0-20 mA, 4-20 mA
- High accuracy, 16-bit resolution
- Easy to configure using ladder register settings or RSLogix programming software

8-Ch Universal Analog Input

1746sc-NI8U

- Selectable ranges:
  - Voltage: ±50 mV, ±100 mV, ±0.5 V ±2.0 V, 0-5 V, 1-5 V, 0-10 V, ±10 V
  - Current: 0-20 mA, 4-20 mA
  - Resistance: 0-3000Ω
  - Thermocouple: J, K, T, B, E, R, S, N, C
  - RTD: Pt 385/3916, Ni618/672, Cu426

1746 SLC™ 500

MicroSD Memory with Real-Time Clock

2080-SDMEMRTC-SC

- Real-time clock functionality
- MicroSD memory card sizes 4, 8, 16, and 32 GB
- Data logging up to 10 MB of data per day
- Firmware update of the controller no longer requires carrying around a PC as the MicroSD card will complete this function:
  - Commissioning new machines / replacing the controller is quick & easy
- Store up to 10 Recipe sets with 128 variables each, max. of 50 Recipes per set

BACNet Communications (Serial & Ethernet)

2080sc-BAC

- 1 Ethernet communications channel
- 1 serial communications channel:
  - RS-485 or RS-232 configurable
- 5 standard BACnet objects supported
- Reduce system cost
- Improve energy efficiency
- Automate lighting control
- Add your machine into your building automaton system

4-Ch Universal Analog Inputs

2080sc-IF4U

- Each input channel selectable to:
  - Current: 0-20 mA, 4-20 mA,
  - Voltage: ±50 mV, ±100 mV, 0-5 V, 0-10 V, ±10 V
  - Resistance: 0-100Ω, 0-1000Ω, 0-3000Ω
  - Thermocouple: J, K, T, E (cold-junction compensated)
  - RTD (2-, 3-, or 4-wire): Pt 385/3916 100Ω/1000Ω (1 input pair per 4 wire RTD)
- Channel-selectable filtering

4-Ch Thermistor Analog Inputs

2080sc-NTC

- Four channels of thermistor/resistance (2-wire resistance) inputs
- NTC thermistor support
- Fully linearized sensor data
- High accuracy, 16-bit resolution
- Channel-selectable filtering for fastest analog update time and noise rejection

2-Ch High Current Relay Outputs

2080sc-OW2IHC

- 2-form A, normally open relays
- 10 A at 0-30 VDC
- 10 A at 120 VAC or 250 VAC
- Channel-to-channel isolated
- LED indicators show visual status of the relay state
- Use for high current loads without the need for interposing relays!

2085 Expansion I/O for Micro850®/870®

8-Ch Universal Analog Input	4-Ch Analog Input & 4-Ch Analog Output Combo	16-Ch High-Density Analog Input	8-Ch High Density Analog Output

2085-sc-IF8U

2085-IF4XOF4-SC

2085sc-IF16C
2085sc-IF16V

2085-sc-OF8

- Current: 0-20 mA, 4-20 mA
- Voltage: ±50 mV, ±100 mV, 0-5 V, 0-10 V, ±10 V
- Resistance: 150Ω, 500Ω, 1000Ω, & 3000Ω
- Thermocouple: Type J, N, T, K, E, S, R, C, B
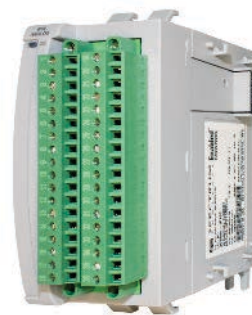- RTD: Pt 385/3916, Ni618, Ni672, Cu426 & NiFe518
- Open-circuit detection

- 4 inputs & 4 outputs all configurable to:
  - Current: 0-20 mA, 4-20 mA
  - Voltage: 0-5 V, 0-10 V, ±10 V
- Configurable open circuit/ output fault detection
- Supports range alarms with latches
- High accuracy, 16-bit
- Great for PID loops

- IF16C: 0-20 mA, 4-20 mA
- IF16V: 0-5 V, 0-10 V, ±10 V
- High accuracy, 16-bit resolution
- Supports range alarms with latches
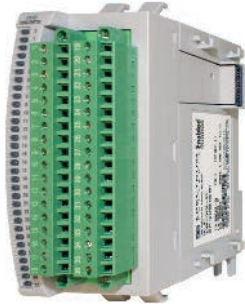- Open-circuit detection,
- Range scaling of input data in module

- 8 configurable outputs:
  - Current: 0-20 mA, 4-20 mA
  - Voltage: 0-5 V, 0-10 V, ±10 V
- Supports range alarms with latches
- Open circuit detection,
- Range scaling of input data in module

The Highest Density Analog Inputs & Outputs for Micro800™ Controllers

32-Ch 24 V Source/Sink Discrete Outputs

2085-OB32-SC (source)
2085-OV32-SC (sink)

• 0.5 Amps per output
• Report module status including brownout detection
• One LED indicator per point
• Highest density discrete outputs for Micro800™ controllers

8-/16-Ch Thermocouple Analog Input

2085-IT8-SC
2085-IT16-SC

• 8 or 16 channels of input:
  - Voltage: ±50 mV, ±100 mV
  - Thermocouple: J, N, T, K, E, S, R, C, B
• High accuracy, 16-bit resolution
• Configurable open-circuit detection
• Differential inputs provide 10 VDC of channel-to-channel isolation

8-Ch RTD Analog Input

2085-IR8-SC

• 16 channels of input:
  - RTD: 100, 200, 500, and 1000Ω, Pt 385/3916, 100Ω Ni618, 120 Ni672, 10Ω Cu426, 604Ω NiFe 518
  - Resistance: 0-150Ω, 0-500Ω, 0-1000Ω & 0-3000Ω
• Open-circuit detection

Coming Soon: 6-Ch Isolated Analog Inputs (2085-IF6I-SC)
4-Ch Isolated Analog Outputs (2085-OF4I-SC)
6-Ch Isolated Thermocouple Inputs (2085-IT6I-SC)

2085 MICRO800™ I/O

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SPECTRUM CONTROLS

C O N T R O L S

An Allied Motion Company

+1.425.746.9481
spectrum@spectrumcontrols.com
spectrumcontrols.com

Distributor:

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