

# 2085 Micro800™ Expansion I/O

High Density | Universal Analog



## Catalog numbers:

- 2085sc-IF8U
- 2085sc-OF8
- 2085sc-IF16V
- 2085sc-IF16C
- 2085-IF4XOF4-SC
- 2085-OB32-SC
- 2085-OV32-SC
- 2085-IR8-SC
- 2085-IT8-SC
- 2085-IT16-SC

[www.spectrumcontrols.com](http://www.spectrumcontrols.com)

P/N 0100384-01



**SPECTRUM**  
C O N T R O L S  
*An Allient Company*



**SPECTRUM**  
C O N T R O L S  
*An Allient Company*

## About Us

Spectrum Controls is the first company to build licensed, core-technology I/O modules for the Rockwell Automation product line. Our innovative designs incorporate state-of-the-art features with dependable performance. In addition to being a Rockwell Automation Technology Partner, technical support is offered for every I/O module through the Rockwell TechConnect Support program at no additional cost to the customer.



**Technology Partner**

A ROCKWELL AUTOMATION PARTNER

As a leader in I/O for the industrial controls marketplace, our market-driven I/O modules provide a cost-effective solution to complex applications. Universal analog, high-density, analog+HART, and other versatile configuration options are just a few of the advantages of using I/O from Spectrum Controls.



*Fully licensed  
Rockwell Automation  
technology; Rockwell  
TechConnect phone  
support included with  
your purchase.*

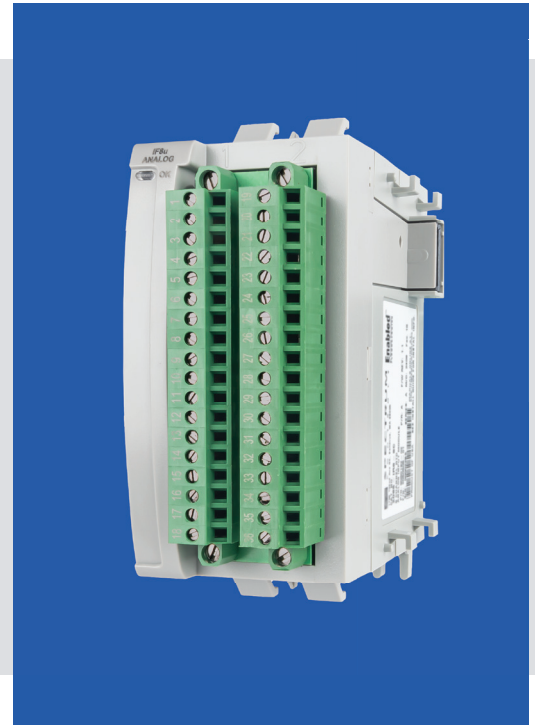
## 2085 Micro800™ EXPANSION I/O

- p.04 **8-Channel Universal Analog Input**  
*2085sc-IF8U*
- p.05 **8-Channel High-Density Analog Output**  
*2085sc-OF8*
- p.06 **16-Channel High-Density Analog Input**  
*2085sc-IF16V, 2085sc-IF16C*
- p.07 **4-Channel Combo Analog Input & Output**  
*2085-IF4XOF4-SC*
- p.08 **32-Channel 24 V Sink/Source Discrete Output**  
*2085-OV32-SC, 2085-OB32-SC*
- p.09 **8-Channel RTD Analog Input**  
*2085-IR8-SC*
- p.10 **8/16-Channel Thermocouple Analog Input**  
*2085-IT8-SC, 2085-IT16-SC*

# 8-Channel Universal Analog Input

## 2085sc-IF8U

- Minimize your price per point with our cost-effective universal analog module.
- Flexible universal analog module with best-in-class performance.
- Save rack space for future applications.
- Simplify your installation and lower your total system costs by standardizing on our price-competitive universal I/O.
- Configure via Rockwell Automation Connected Components Workbench (CCW) Software.



## Key Specifications

- Supports up to 8 voltage, current, thermocouple, or RTD/resistance inputs.
- Differential inputs provide 10 VDC, channel-to-channel isolation.
- Configurable open-circuit detection, CJC's, and 4 data formats.

Specification	Description
Number of Inputs	8 Differential Inputs
Input ranges	Current: 0 - 20 mA, 4 - 20 mA
	Voltage: $\pm 50$ mV, $\pm 100$ mV, 0 - 5 V, 0 - 10 V, $\pm 10$ V
	RTD: 100 $\Omega$ , 200 $\Omega$ , 500 $\Omega$ , and 1000 $\Omega$ Pt385 & Pt3916, 100 $\Omega$ Ni618 & 120 Ni672, 10 $\Omega$ Cu 426, 604 $\Omega$ NiFe 518
	Resistance: 0-150 $\Omega$ , 0-500 $\Omega$ , 0-1000 $\Omega$ , 0-3000 $\Omega$
	Thermocouple: Type J, N, T, K, E, S, R, C, B
Resolution	16-bit
Input filters	4 Hz*, 17 Hz*, 62 Hz, 470 Hz (* feature 50/60/Hz rejection)
Update Rate	139 ms per channel, 17 Hz filter
Power Consumption	94 mA at 5 V, 15 mA at 24 V
Operating Temp. Range	-20 $^{\circ}$ C to +65 $^{\circ}$ C



# 8-Channel High-Density Analog Output

## 2085sc-OF8

- The highest density analog output available for Micro800™ controllers.
- Minimize your cost per I/O point with our affordable output analog module.
- Save money with a single high-density analog module instead of multiple low-density I/O modules.
- Lower your overall system costs by standardizing on the highest density analog output available for Micro800™ Controllers.



## Key Specifications

- 8-Channel selectable voltage and current output ranges.
- Configurable open circuit detection, output fault detection, and range scaling of output data.
- Supports range alarms with latches.

Specification	Description		
Number of Outputs	8 Outputs		
Output Types	<table><tr><td>0 mA - 20 mA, 4 mA - 20 mA</td></tr><tr><td>0 V to +5 V, 0 V to +10 V, ±10 V</td></tr></table>	0 mA - 20 mA, 4 mA - 20 mA	0 V to +5 V, 0 V to +10 V, ±10 V
0 mA - 20 mA, 4 mA - 20 mA			
0 V to +5 V, 0 V to +10 V, ±10 V			
Resolution	16-bit		
Output Load	50 to 500 Ohm		
Output Impedance	Current Mode: > 1MOhm, Voltage Mode: < 1 Ohm		
Power Consumption	85 mA at 5 V, 10 mA at 24 V, 195 mA at 24 V Field Power		
Operating Temp. Range	-20 °C to +65 °C		

# 16-Channel High-Density Analog Input

## 2085sc-IF16V, 2085sc-IF16C

- Choose between a current or voltage version for high-performance analog inputs with up to 16-bit resolution.
- Best price per point value on the Micro800™ platform.
- Designed to expand the local I/O communication capability of the Micro800™ platform.
- Simplify your installation by standardizing on a common I/O.



## Key Specifications

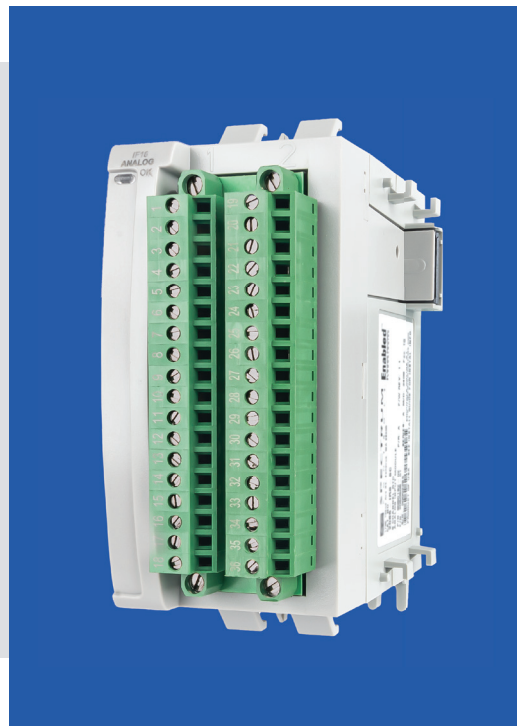
- The highest density analog input available for Micro800™ controllers.
- Configurable open circuit detection, range scaling of input data in module not in the PLC code.
- Supports process alarms with latches.

Specification	Description
Number of Inputs	16 Differential Inputs
Input Types	2085sc-IF16C: 0 mA - 20 mA, 4 mA - 20 mA
	2085sc-IF16V: 0 V to +5 V, 0 V to +10 V, ±10 V
Resolution	16-bit
Input filters	4.17 Hz*, 16.7 Hz*, 62 Hz, 470 Hz (* feature 50/60Hz rejection)
Update Rate	138 ms per channel, 16.7 Hz filter
Power Consumption	100 mA at 5 V, 20 mA at 24 V
Operating Temp. Range	-20 °C to +65 °C

# 4-Channel Combo Analog Input & Output

## 2085-IF4XOF4-SC

- Minimize your cost per I/O point with our affordable combination analog module.
- Ideal for applications requiring combination analog inputs and outputs.
- Great for PID closed loop control applications.
- Save money with a single combination analog module, instead of multiple dedicated analog I/O modules.



## Key Specifications

- Save rack space with this high-performance input/output module.
- Configurable open circuit/output fault detection.
- Supports range alarms with latches.

Specification	Description
No. of Inputs/Outputs	4 Inputs/4 Outputs
Input/Output Types	0 mA - 20 mA, 4 mA - 20 mA, 0 V to +5 V, 0 V to +10 V, $\pm 10$ V
Resolution	16-bit
Input Filters	4 Hz*, 17 Hz*, 62 Hz, 470 Hz (* feature 50/60Hz rejection)
Input Update Rate	131 ms per channel, 17 Hz filter
Power Consumption	110 mA at 5 V, 125 mA at 24 V
Operating Temp. Range	-20 °C to +65 °C

# 32-POINT 24 V Sink/Source Discrete Output

## 2085-OV32-SC (Sinking), 2085-OB32-SC (Sourcing)

- The highest density discrete outputs for Micro800™ controllers.
- Save space on the Micro800™ expansion bus by consuming only 1 slot.
- Connect up to 8 modules on the eight expansion bus slots of Micro870 controller and 4 on Micro850 controller.
- Choose either sink or source output modules to minimize cost per point.



## Key Specifications

- Available in sink or source operation
- One LED indicator per point
- Report module status including brownout detection
- Group-to-group Isolation

Specification	Description
Number of Outputs	32 Points (2 isolated groups of 16)
On-State Current	0.5 A maximum steady state (8 A per channel group)
Working Voltage	12/24 VDC (10.5 VDC to 30 VDC)
Output Delay	3 ms
On state voltage drop	Less than 0.5 VDC maximum
Thermal Dissipation	5.5 Watt, maximum (OB32), 4.0 Watt, maximum (OV32)
Power Consumption	Bus Supply: 70 mA at 5 V, 55 mA at 24 V
Operating Temp. Range	-20 °C to +65 °C



# 8-Channel RTD Analog Input

## 2085-IR8-SC

- Minimize your cost per I/O point with our affordable RTD analog module.
- High-resolution temperature sensing with best-in-class performance.
- Save rack space for future applications.
- Simplify your installation, and lower your total system costs by standardizing on our price competitive RTD I/O.



## Key Specifications

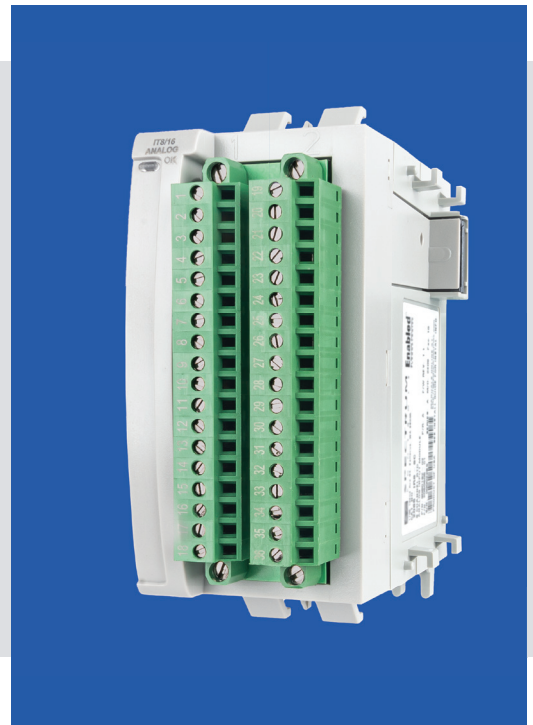
- Supports up to 8 RTD/resistance inputs of 2-, 3-, or 4-wire.
- Dedicated Res/RTD module provides improved performance with lower long-term drift.
- Configurable open circuit detection.

Specification	Description
Number of Inputs	8
Input ranges	<div>12 RTD Types: 100 <math>\Omega</math>, 200 <math>\Omega</math>, 500 <math>\Omega</math>, and 1000 <math>\Omega</math> Pt385 and Pt3916, 100 <math>\Omega</math> Ni618 and 120 Ni672, 10 <math>\Omega</math> Cu 426, 604 <math>\Omega</math> NiFe 518</div> <div>4 Resistance Ranges: 0-150 <math>\Omega</math>, 0-500 <math>\Omega</math>, 0-1000 <math>\Omega</math>, 0-3000 <math>\Omega</math></div>
Resolution	16-bit
Input filters	4 Hz*, 17 Hz*, 60 Hz, 470 Hz (* feature 50/60Hz rejection)
Update Rate	139 ms* per channel, 17 Hz filter, 2- and 4-wire mode. (* periodically 2x this in 3-wire mode)
Power Consumption	94 mA at 5 V, 15 mA at 24 V
Operating Temp. Range	-20 $^{\circ}$ C to +65 $^{\circ}$ C
RTD Configurations	2-, 3- or 4-wire

# 8/16-Channel Thermocouple Analog Input

## 2085-IT8-SC, 2085-IT16-SC

- Minimize your cost per I/O point with our affordable thermocouple analog module.
- High-resolution temperature sensing with best-in-class performance.
- Save rack space for future applications.
- Simplify your installation, and lower your total system costs by standardizing on our price-competitive thermocouple I/O.



## Key Specifications

- Supports up to 8 or 16 thermocouple inputs.
- Differential inputs provide 10 V of channel-to-channel isolation.
- Configurable open-circuit detection.

Specification	Description
Number of Inputs	8 or 16 thermocouple
Input ranges	Voltage: $\pm 50$ mV, $\pm 100$ mV
	Thermocouple: Type J, N, T, K, E, S, R, C, B
Resolution	16-bit
Input filters	4 Hz*, 17 Hz*, 60 Hz, 470 Hz (* feature 50/60Hz rejection)
Update Rate	139 ms per channel, 17 Hz filter
Power Consumption	100 mA at 5 V, 20 mA at 24 V
Operating Temp. Range	-20 °C to +65 °C

# Agency Certifications

## UL/cUL Certifications

UL/cUL Listed ANSI ISA 12.12.01 (Class I, Div 2, Groups ABCD).

UL/cUL Listed UL 61010-2-201

FCC Part 15 Class A compliance

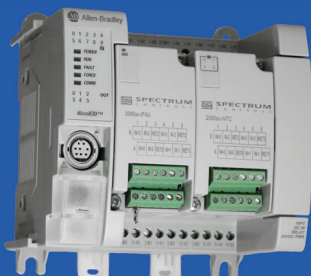
## CE Compliant to LV and EMC directives

EN 61010-2-201

EN 61131-2, Programmable Controllers (Clause 8, Zone A & B)

IEC 61000-6-4 (emission) and IEC 61000-6-2 (immunity)

RoHS, REACH



## Also available: Class 2080 Micro800™ Plug-in Modules

We have plug-ins for BACNet communication, analog inputs for Thermistors, Universal (voltage, current, thermocouple and RTD/resistance) analog input, a real-time clock module with MicroSD™ memory slot, and a High Current Relay Output module.

Visit [www.spectrumcontrols.com](http://www.spectrumcontrols.com) for more information

## Spectrum Controls

1705 132nd Ave NE  
Bellevue, WA 98005

+1 (425) 746-9481

[www.SpectrumControls.com](http://www.SpectrumControls.com)

[Spectrum@SpectrumControls.com](mailto:Spectrum@SpectrumControls.com)



**SPECTRUM**  
C O N T R O L S

An **Allient** Company

Copyright ©2025 Spectrum Controls, Inc., All rights reserved.  
Printed in USA. Specifications subject to change without notice.

P/N 0100384-01



**Technology Partner**

A ROCKWELL AUTOMATION PARTNER