

SmartRail Modular I/O

The Newest I/O Family for OCS

SmartRail I/O is a new highly expandable, modular I/O system for the Operator Control Station (OCS). It can be used to expand the I/O capacity of just about any OCS by merely a few points - or potentially thousands of points.

Modular

SmartRail I/O is modular – starting with your choice of three bases (Ethernet, CsCAN, and Profibus). Then add up to 8 I/O modules per base – with a wide variety of digital and analog I/O to choose from. Digital I/O includes DC inputs, DC outputs, and Relay outputs. Analog I/O includes 4-20mA/0-10V inputs and outputs, Thermocouple Inputs and RTD Inputs. Modules are available with inputs only, inputs and outputs, and outputs only.

Compact

SmartRail is very compact, with a flexible footprint that only grows as you add modules. The SmartRail I/O Base is 3.5"H x 2.375"W – with a depth of only 1.75". Each I/O module adds only about ¾" of width. Using 16 point modules, the SmartRail can support 128 I/O points in a footprint of less than 3.5"H x 8.75"W.

Highly Expandable

With digital I/O densities ranging from 8 points to 32 points per module, and an analog density of 4 channels per module – SmartRail can support as many as 256 digital I/O points and 32 analog I/O points per base. Adding multiple bases to a single OCS control system is very easy. This can allow the number of I/O to grow to literally the limits of the OCS I/O memory space (2048 digital inputs, 2048 digital outputs, 512 analog inputs, 512 analog outputs). Multiple bases can also be used to distribute the I/O to locations closer to the sensors and actuators, saving wiring costs.

Easy to Setup and Configure

Unlike many I/O systems that are complex and difficult to use, SmartRail I/O is simply configured using Cscape programming software. SmartRail Ethernet and CsCAN bases utilize Cscape's Hardware Configuration menu and a "plug and play" approach. The SmartRail Profibus base uses Cscape's HSycon configuration tool, for a more fieldbus-centric approach.

Convenient Features

SmartRail I/O has all the features you need. The Ethernet Base has a built-in 10-100 switch, to make cabling and expansion simple and less expensive. All SmartRail I/O modules have removable terminals strips. Digital I/O modules have ON/OFF state LED indication. Analog I/O modules have fault LEDs to indicate sensor errors.



Modular I/O System

Highly Expandable

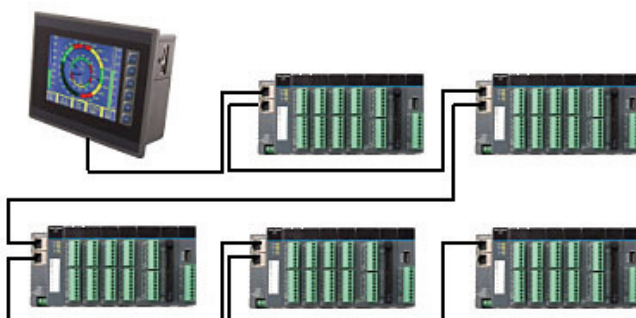
Compact Flexible Footprint

Plug and Play with Cscape™ Software

3 Bases to Choose From

- Ethernet Base
- CsCAN Base
- Profibus Base

Up to 8 Modules per Base



I/O Expansion Using Multiple Bases (Ethernet Shown)

You can easily daisy-chain as many additional SmartRail bases that are needed to complete your application – up to a total of 4096 digital and 1024 analog I/O.

Item	SmartRail I/O Specification		
Bus Interfaces Available	Ethernet	CsCAN	Profibus DP
OCS Compatibility	XL6e, NX, RCX, RX, QX (not compatible with HE-XEC)	All OCS with CsCAN port	NX, RCX, RX, QX with PBM650 Master SmartStack module
Bus Connector(s)	Dual RJ45 (8P8C)	5-pin Terminals	9-pin Dsub
Maximum Modules per Base		8	
Maximum I/O per Base Digital Analog	256 total 32 total	256 total 32 total	128 in + 128 out 16 in + 16 out
Maximum Bases	unlimited*	253**	127**
*Limited only by OCS memory and application **Rotary switch limits SmartRail bases to 99			
Input Voltage range	19.2V to 28.8V (11V to 28.8V CsCAN)		
Input Current	0.55A @ 24Vdc		
Output Voltage/Current	5V (1.5A)		
Operating Temperature	0 to +55°C		
Storage Temperature	-25 to +70°C		
Relative Humidity	5% to 95%, non-condensing		
Vibration & Shock	Per IEC 61131-2		
Noise Immunity	Per CE standards & IEC61131-2		
Approvals	CE, UL & C-UL		



SmartLink Terminal Strip and Expansion Cable
(for 32 pt. I/O)

Part Numbers

Ethernet Base & Accessories

HE599ETX200
HE599CBEnnn

CsCAN Base & Accessories

HE599CNX100
HE200CBL500
HE200CBL100

Profibus Base

HE599PBX100

Digital I/O Modules & Accessories

HE599DIM510
HE599DIM610
HE599DIM710
HE599DIQ512
HE599DQM502
HE599DQM602
HE599DQM506
HE599DQM606
HE599DQM706
HE599TRM040
HE599RLY037
HE599TRMnnn

Analog I/O Modules

HE599ADC170
HE599MIX116
HE599DAC101
HE599DAC106
HE599RTD100
HE599THM100

Description

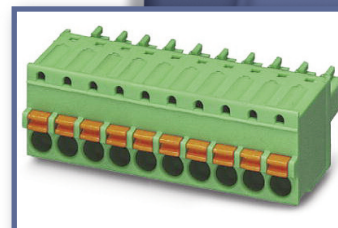
Ethernet Base with Built-in Switch
Ethernet Expansion Cables (nnn=length in feet)

CsCAN Base
CsCAN Thick Cable (per foot) – 500m max
CsCAN Thin Cable (per foot) – 100m max

Profibus DP Base (Termination Kit included)

8pt DC Input (pos/neg logic)
16pt DC Input (pos/neg logic)
32pt DC Input (pos/neg logic)
8pt DC Input (pos/neg) + 8pt Relay Output, 2A
8pt Relay Output, 2A
16pt Relay Output, 2A
8pt DC Output (pos logic), 0.5A
16pt DC Output (pos logic), 0.5A
32pt DC Output (pos logic), 0.2A
Terminal Strip for 32pt Modules
Relay Output Strip for 32pt Output Module
Spring-clamp Plugs (nnn=number of terminals)

4ch 4-20mA, 0-10V Analog Inputs (12-bit)
2ch In + 2ch Out 4-20mA, 0-10V Analog (12-bit)
4ch 0-10V Analog Outputs (12-bit)
4ch 4-20mA Analog Outputs (12-bit)
4ch RTD Inputs (0.1° resolution)
4ch Thermocouple Inputs (0.1°C resolution)



Spring-clamp Plugs
available as accessories
(screw-type standard)



High Quality, Shielded Cables
available in lengths from 1 foot
to 30 feet

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