SmartRail Modular I/0

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.
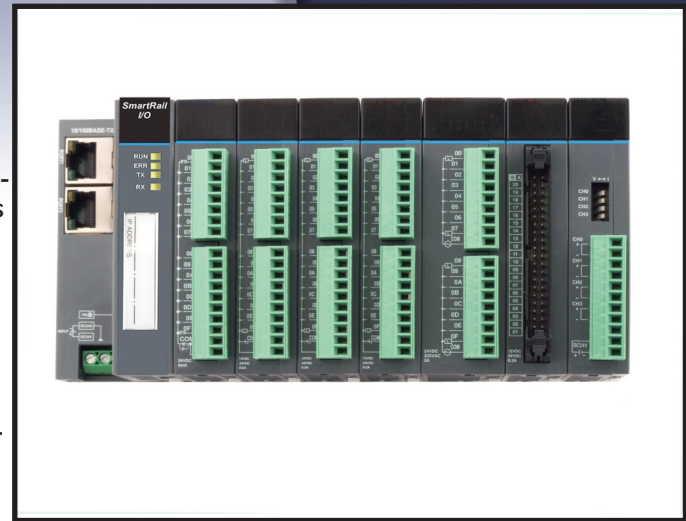
Highly Expandable

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.

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.

Modular I/O System
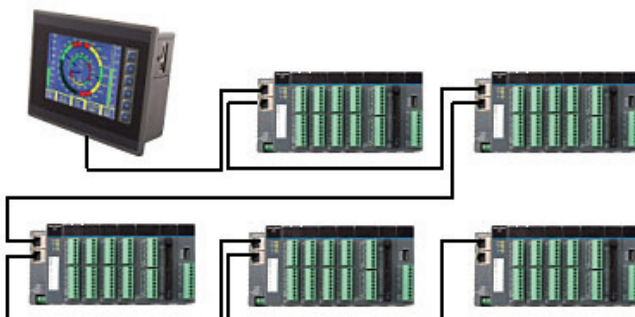
Highly Expandable

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

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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		

Part Numbers
Description

Ethernet Base & Accessories
HE599ETX200   Ethernet Base with Built-in Switch
HE599CBEnnn   Ethernet Expansion Cables (nnn=length in feet)

CsCAN Base & Accessories
HE599CNX100   CsCAN Base
HE200CBL500   CsCAN Thick Cable (per foot) – 500m max
HE200CBL100   CsCAN Thin Cable (per foot) – 100m max

Profibus Base
HE599PBX100   Profibus DP Base (Termination Kit included)

Digital I/O Modules & Accessories
HE599DIM510   8pt DC Input (pos/neg logic)
HE599DIM610   16pt DC Input (pos/neg logic)
HE599DIM710   32pt DC Input (pos/neg logic)
HE599DIQ512   8pt DC Input (pos/neg) + 8pt Relay Output, 2A
HE599DQM502   8pt Relay Output, 2A
HE599DQM602   16pt Relay Output, 2A
HE599DQM506   8pt DC Output (pos logic), 0.5A
HE599DQM606   16pt DC Output (pos logic), 0.5A
HE599DQM706   32pt DC Output (pos logic), 0.2A
HE599TRM040   Terminal Strip for 32pt Modules

Analog I/O Modules
HE599ADC170   4ch 4-20mA, 0-10V Analog Inputs (12-bit)
HE599MIX116   2ch In + 2ch Out 4-20mA, 0-10V Analog (12-bit)
HE599DAC101   4ch 0-10V Analog Outputs (12-bit)
HE599DAC106   4ch 4-20mA Analog Outputs (12-bit)
HE599RTD100   4ch RTD Inputs (0.1° resolution)
HE599THM100   4ch Thermocouple Inputs (0.1°C resolution)

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

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