



S800 I/O is a comprehensive, distributed and modular process I/O system that communicates with parent controllers over industry-standard field buses. Thanks to its broad connectivity it fits a wide range of process controllers from ABB and others.

By permitting installation in the field, close to sensors and actuators, S800 I/O reduces the installation cost by reducing the cost of cabling. And thanks to features such as “hot swap” of modules, “on-line” reconfiguration and redundancy options, it contributes to keeping production – and thereby profits – up.

### General specifications

<b>Power supply:</b>	24V d.c. (19.2 - 30V)
<b>Temperature range:</b>	0...55°C
<b>Protection class:</b>	IP20
<b>Standards complied with:</b>	
<b>Electrical safety:</b>	EN 3810, EN 5017-8, IEC 61131-2, UL508, CSA 22.2 No. 142-M1987
<b>Hazardous locations (Class 1, Div. 2):</b>	CSA 22.2 No. 213-M1987, FM 3600, FM 3611, UL 60079-15
<b>Corrosive gases:</b>	ISA Class G2 or G3
<b>Isolation test voltage:</b>	500/2000V a.c.

### Communication media

<b>Advant Fieldbus 100.</b>	Twisted pair screened/coaxial/fiber-optic cable. Up to 79 stations per bus. Up to 32 per twisted-pair segment. Bus length: Up to 750m (2 460ft.) per twisted-pair segment overall up to: 15km (9.3 miles).
<b>Profibus DP.</b>	Twisted pair screened/fiber-optic cable. Up to 99 stations per bus. Up to 32 per twisted-pair segment. Bus length: Up to 1200m (3937ft.) per twisted-pair segment.

### Communication interfaces

<b>CI810</b>	For Advant Fieldbus 100. Supports dual bus-cable redundancy.
<b>CI801</b>	For PROFIBUS-DP/V1. Hot Configuration in Run & HART® pass-through. GSD-file provided.
<b>TB820 / 825 / 810 / 811 / 842.</b>	Optical cluster modem/ports for ModuleBus/drives integration.
<b>Redundant interface</b>	
<b>CI820</b>	For redundant Advant Fieldbus 100 in combination with Advant Controller 400 series controllers.
<b>TB815 Interconnection Unit.</b>	An electrical and optical ModuleBus interface for coordination of the two parallel CI820 needed.
<b>CI840A</b>	For redundant PROFIBUS-DP/V1. Hot Configuration in Run & HART® pass-through. GSD file provided.

**TB840** Optical cluster modem for redundant Modulebus. Installed on TU840/TU841/TU848/TU849. Used with AC 800M.

### Module Termination Units (MTU:s)

#### Compact, 50V applications

- TU810** With screw terminals.
- TU812** With 25 pin D-sub connector.
- TU814** With 3 crimp snap-in connectors.

#### Compact, 250V applications

- TU811** With screw terminals.
- TU813** With 3 crimp snap-in connectors.

#### Compact for intrinsic safety

- TU89X** With screw terminals & isolated power supply.

#### Extended, 50V applications

- TU830 / TU835 / TU838**  
With screw terminals, pwr. distribution & fuse.
- TU833** With spring-cage term., pwr. distribution & fuse.
- TU834** With screw terminals for shunt sticks.

#### Extended, 250V applications

- TU831 / TU836 / TU837**  
With screw terminals, pwr. distribution & fuse.

#### Redundancy, 50V applications

- TU842 / 843** (horiz./vert. mounting) w. screw terminals.
- TU844 / 845** (horiz./vert. mounting)  
With screw terminals and shunt sticks, TY80X.
- TU805** For DI801 & DO801. With field power distribution screw terminals.

### Station layouts

- No. of I/O modules:**  
Up to 24 per I/O station.
- Extension cable:**  
Plug-in, lengths: 0.3, 0.6 and 1.2m (1, 2 & 4ft).
- Optical ModuleBus:** Up to 7 I/O clusters and/or 24 I/O modules. Max length: 15m (49ft), 1000m (3280ft) w modem TB825.

(continued overleaf)

## S800 I/O modules

### Digital input modules

<b>DI810</b>	16 channels, 2 groups of 8 ch., 24V d.c., current sink.
<b>DI811</b>	16 ch., 2 groups of 8 ch., 48V d.c., current sink.
<b>DI814</b>	16 ch., 2 groups of 8 ch., 24V d.c., current source.
<b>DI820</b>	8 ch., separate returns, 110V d.c., 120V a.c.
<b>DI821</b>	8 ch., separate returns, 220V d.c., 230V a.c.
<b>DI825</b>	<b>With time tagging</b> , 8 ch., sep. returns, 125V d.c.
<b>DI830</b>	<b>With time tagging</b> , 16 ch., 2 groups of 8 ch., 24V d.c., current sink. Resolution: <0.5ms.
<b>DI831</b>	<b>With time tagging</b> , 16 ch., 2 groups of 8 ch., 48V d.c., current sink. Resolution: <0.5ms.
<b>DI885</b>	<b>With time tagging &amp; wire-fault detection</b> . 8 ch., common return, 24-48V d.c., current sink. Time tagging resolution: 1ms.

### Pulse input module

<b>DP820</b>	2 channels, separate returns, 0.25Hz - 1.5MHz, signal voltage: 5 / 24V d.c.
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### Digital output modules

<b>DO810</b>	16 channels, 2 groups of 8 ch., 24V, max 0.5A d.c., transistor, current source, short-circuit-proof.
<b>DO814</b>	16 ch., 2 groups of 8 ch., 24V d.c., max 0.5A, transistor, current sink, short-circuit-proof.
<b>DO815</b>	8 ch., 2 groups of 4 ch., 24V d.c., max 2A, transistor, current source, short-circuit-proof.
<b>DO820</b>	8 ch., separate returns, 5-250V, max 3A a.c./d.c., relay (N.O.).
<b>DO821</b>	8 ch., separate returns, 5-250V, max 3A a.c./d.c., relay (N.C.).

### Analog input modules

<b>AI810</b>	8 channels, single-ended, 0(4)-20mA, 0(2)-10V, 12 bits.
<b>AI820</b>	<b>Differential inputs</b> , 4 ch., 0(1)-5V, $\pm 0(2)$ -10V, $\pm 0(4)$ -20mA, 14 bits + sign.
<b>AI825</b>	<b>Galvanically isolated</b> , 4 ch., $\pm 0(2)$ -10V, $\pm 0(4)$ -20mA, 14 bits + sign.
<b>AI830A</b>	<b>RTD inputs</b> , 8 ch., Pt100, Ni100, Ni120, Cu10, resistor 0-400 $\Omega$ , 14 bits, 3-wire.
<b>AI835</b>	<b>TC inputs</b> , 8 ch., (7+ ref. junction), separate returns. TC types B, C, E, J, K, N, R, S, T, -30...75mV, 15 bits.

### Analog output modules

<b>AO810V2</b>	8 channels, common return, 0(4)-20mA, 14 bits, load: 850 $\Omega$ (short-circuit-proof).
<b>AO820</b>	<b>Isolated output</b> . 4 ch., separate returns, measuring range: $\pm 0(2)$ -10V, $\pm 0(4)$ -20mA, resolution: 12 bits + sign, load: $\leq 500\Omega$ (current) / $\geq 2k\Omega$ (voltage), short-circuit-proof.

## I/O modules with intrinsic-safety interface

- **DI890 digital inputs with wire-fault detection**  
8 ch., separate returns, 24V d.c., current sink.
- **DO890 digital outputs with wire-fault detection**  
4 ch., separate returns, load 150-5000 $\Omega$ , 11V @ 40mA, current source, short circuit-proof.
- **AI890 Analog inputs**. 8 ch., single-ended, 0(4)-20mA, 12 bits, transmitter power supply
- **AI893 TC/RTD inputs**. 8 ch., TC: 7 + ref. junction, sep. returns. TC types B, C, E, J, K, L, N, R, S, T, U, -10...80mV. RTD: Pt50-1000, Ni100-500, Cu10-100, resistor 0-4000 $\Omega$ , 3-wire. 15 bits + sign.
- **AI895 with intrinsic safety & HART interface**  
8 ch., single-ended, 4-20mA, 12 bits, transmitter power supply.
- **AO890 with intrinsic safety & wire-fault detection**  
8 ch., common return, 0(4)-20mA, 12 bits, load: 750 $\Omega$  (short-circuit-proof).
- **AO895 with intrinsic safety, HART interface & wire-fault detection**. 8 ch., common return, 4-20mA, 12 bits, load: 750 $\Omega$  (short-circuit-proof).

## S800L I/O modules

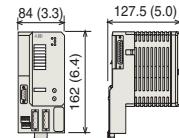
<b>DI801</b>	16 channels, 1 group, 24V d.c., current sink.
<b>DI802</b>	8 ch., 110V d.c., 120V a.c.
<b>DI803</b>	8 ch., 220V d.c., 230V a.c.
<b>DO801</b>	16 ch., common return, 24V, max 0.5A d.c., transistor, current source, short-circuit-proof.
<b>DO802</b>	8 ch., 5-250V, max 2A a.c./d.c., relay (N.O.).
<b>AI801</b>	8 ch., single-ended, 0(4)-20mA, 12 bits.
<b>AO801</b>	8 ch., common return, 0(4)-20mA, 12 bits, load: <750 $\Omega$ .

## S800 I/O modules for redundancy & SIL3

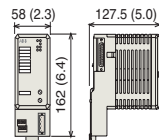
<b>DI840</b>	16 channels, common return, 24V d.c., current sink, extended diagnostics.
<b>DI880</b>	16 ch., 24V d.c., current sink, SIL3, extended diagnostics.
<b>DP840</b>	8 ch., sep. returns, freq. measurement or pulse counting, 0.5-20 kHz, 12/24V d.c or NAMUR.
<b>DO840</b>	16 ch., common return, 24V d.c., max. 0.5A, current source, short-circuit-proof, extended diagnostics.
<b>DO880</b>	16 ch., 24V d.c., max. 0.5A, current source, SIL3, short-circuit-proof, extended diagnostics.
<b>AI843</b>	TC input, 8 ch. + ref. junction. TC types: B, C, E, J, K, L, N, R, S, T, U, -30...75mV, 16 bits, extended diagnostics.
<b>AI845</b>	8 ch., common return, 0(4)-20mA 0(1)-5V, extended diagnostics, HART support.
<b>AI880A</b>	8 ch., common return, 0(4)-20mA, SIL3, extended diagnostics, HART support.
<b>AO845</b>	8 ch., common return, 4-20mA, extended diagnostics, HART support.

Dimensions in mm (in.)

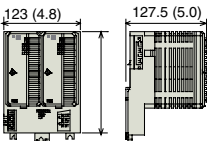
### CI810



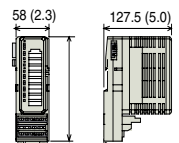
### CI820, TB815



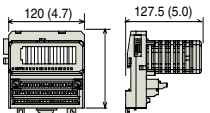
### Redundant Comm. Modules



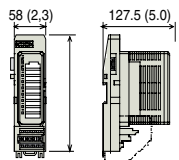
### Compact I/O



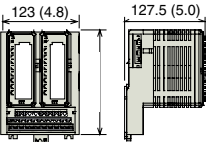
### Extended I/O



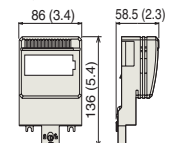
### Intrinsic safety I/O



### Redundant I/O



### CI801, S800L I/O



### ABB

Process Automation Division  
Västerås, Sweden  
Phone: +46 (0) 21 32 50 00  
Fax: +46 (0) 21 13 78 45  
[www.abb.com/controlsystems](http://www.abb.com/controlsystems)  
e-mail: [processautomation@se.abb.com](mailto:processautomation@se.abb.com)

### ABB

Process Automation Division  
Singapore  
Phone: +65 6776 5711  
Fax: +65 6778 0222  
[www.abb.com/controlsystems](http://www.abb.com/controlsystems)  
e-mail: [processautomation@sg.abb.com](mailto:processautomation@sg.abb.com)

### ABB

Process Automation Division  
Wickliffe, Ohio, USA  
Phone: +1 440 585 8500  
Fax: +1 440 585 8756  
[www.abb.com/controlsystems](http://www.abb.com/controlsystems)  
e-mail: [industrialitsolutions@us.abb.com](mailto:industrialitsolutions@us.abb.com)

### ABB

Process Automation Division  
Mannheim, Germany  
Phone: +49 (0) 1805 26 67 76  
Fax: +49 (0) 1805 77 63 29  
[www.abb.de/controlsystems](http://www.abb.de/controlsystems)  
e-mail: [marketing.control-products@de.abb.com](mailto:marketing.control-products@de.abb.com)

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