

Control<sup>IT</sup>



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 1604
<b>Corrosive gases:</b>	ISA Class G2 (G3 pending)
<b>Isolation test voltage:</b>	500/2000V a.c.

### Communication media

- Advant Fieldbus 100.** 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).
- Profibus DP.** 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

- CI810** For Advant Fieldbus 100. Supports dual bus-cable redundancy.
- CI801** For PROFIBUS-DP/V1. Hot Configuration in Run & HART® pass-through. GSD-file provided.
- TB820 / 825 / 810 / 811 / 842.** Optical cluster modem/ports for ModuleBus/drives integration.

### Redundant interface

- CI820** For redundant Advant Fieldbus 100 in combination with Advant Controller 400 series controllers.
- TB815 Interconnection Unit.** An electrical and optical ModuleBus interface for coordination of the two parallel CI820 needed.

- CI840** 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. 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.

#### 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).

(continued overleaf)

**Optical ModuleBus:** Up to 7 I/O clusters and/or 24 I/O modules. Max length: 15 or 200m (49 or 656ft).

## 800 I/O modules

### Digital input modules

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

### Pulse input module

- DP 820** 2 channels, separate returns, 0.25Hz - 1.5MHz, signal voltage: 5 / 24V d.c.

### Digital output modules

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

### Analog input modules

- AI810** 8 channels, single-ended, 0(4)-20mA, 0(2)-10V, 12 bits.
- AI820** **Differential inputs**, 4 ch., 0(1)-5V,  $\pm 0(2)$ -10V,  $\pm 0(4)$ -20mA, 14 bits + sign.
- AI825** **Galvanically isolated**, 4 ch.,  $\pm 0(2)$ -10V,  $\pm 0(4)$ -20mA, 14 bits + sign.
- AI830** **RTD inputs**, 8 ch., Pt100, Ni100, Ni120, Cu10, resistor 0-400 $\Omega$ , 14 bits, 3-wire.
- AI835** **TC inputs**, 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

- AO810** 8 channels, common return, 0(4)-20mA, 14 bits, load: 850 $\Omega$  (short-circuit-proof).
- AO820** **Isolated output**. 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).

### 800L I/O modules

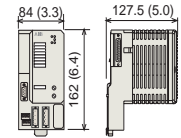
- DI801** 16 channels, 1 group, 24V d.c., current sink.
- DI802** 8 ch., 110V d.c., 120V a.c.
- DI803** 8 ch., 220V d.c., 230V a.c.
- DO801** 16 ch., common return, 24V, max 0.5A d.c., transistor, current source, short-circuit-proof.
- DO802** 8 ch., 5-250V, max 2A a.c./d.c., relay (N.O.).
- AI801**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

### 800 I/O modules for redundancy & SIL3

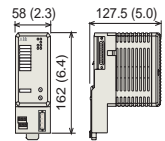
- DI840** 16 channels, common return, 24V d.c., current sink, extended diagnostics.
- DI880** 16 ch., 24V d.c., current sink, SIL3, extended diagnostics.
- DP840** 8 ch., sep. returns, freq. measurement or pulse counting, 0.5-20 kHz, 12/24V d.c or NAMUR.
- DO840** 16 ch., common return, 24V d.c., max. 0,5A, current source, short-circuit-proof, extended diagnostics.
- DO880** 16 ch., 24V d.c., max. 0.5A, current source, SIL3, short-circuit-proof, extended diagnostics.
- AI843** 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.
- AI845** 8 ch., common return, 0(4)-20mA 0(1)-5V, extended diagnostics, HART support.
- AI880A** 8 ch., common return, 0(4)-20mA, SIL3, extended diagnostics, HART support.
- AO845** 8 ch., common return, 4-20mA, extended diagnostics, HART support.

Dimensions in mm (in.)

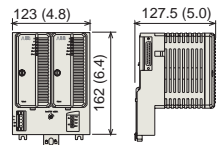
#### CI810



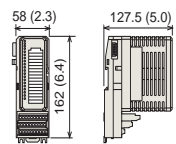
#### CI820, TB815



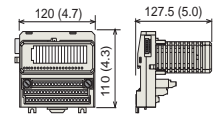
#### Redundant Comm. Modules



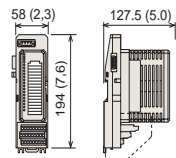
#### Compact I/O



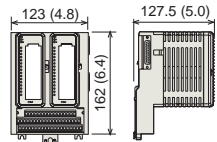
#### Extended I/O



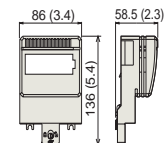
#### Intrinsic safety I/O



#### Redundant I/O



#### CI801, S800L I/O



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