

OC 6000e* Distributed Control System – I/O Modules



OC 6000e* Distributed Control System (DCS) – I/O Modules

The OC 6000e I/O provides a comprehensive and cost-effective process interface solution. Reliability and flexibility are built into all aspects of the DCS I/O subsystem to help keep the process on-line and profitable.

Full Line of Industrial I/O Types

Most requirements are met using just five flexible module types (DI, DO, AI, AO, TC/RTD). This simplifies I/O design and implementation, and minimizes the cost for spare parts. The modular design accommodates virtually any size application and is easily expandable.

Distributed I/O with Rugged Design and Flexible Packaging

Modules can be distributed wherever field devices are located, including indoor and outdoor installations. They can be mounted individually, or in small or large clusters as needed. By locating I/O field modules close to operating devices, field wire runs can be shortened, which represents a large portion of installation expense.

The modules are manufactured using surface-mounting technology, which makes them resistant to shake and vibration conditions. DIN-rail mounting supports wall-mounted or floor-standing installations. Industrial-hardened enclosures further protect the modules from dust and corrosive elements.

Fault-tolerance for Maximum Availability

The redundant Process IONET Network establishes a high-speed data transmission between DCS and Remote I/O stations over a distance of up to two kilometers. It uses 100MB Ethernet and is compatible with standard Ethernet devices per IEEE802.3, and supports IEEE1588 Precision Time Protocol. The media can be fiber or twisted pair per your requirements.

Power supplies can be implemented with 1:1 redundancy.

To further ensure continued operation, fail-safe modes can be programmed for the I/O. For example, modules can be programmed to hold a predetermined signal value, or to hold the last good value on loss of communication with the Distributed Processing Units.

Reduce Maintenance Costs

Hot-swap capability and comprehensive diagnostics facilitate maintenance and reduce downtime. I/O modules can be replaced under power so other modules are not disturbed. Modules are keyed to help ensure an accurate replacement.

All modules are equipped with diagnostic LED displays. Intuitive diagnostic displays on operator stations support monitoring I/O status at the module and channel level.

General Specifications

Environment

Operating Temperature: -30°C to 65°C

Humidity: 10%-90% non-condensing

Vibration:

- Overall System: 5 Hz –200 Hz with an accelerating speed of not greater than 5 m/S²
- Components and assemblies: 10 Hz –500 Hz and acceleration of not greater than 10 m/S²

Elevation: up to 2500 m

Contaminants: Dust particle size larger than 0.5 uis with fewer than 18,000 particles/L

Packaging

Cabinet Protection Class: NEMA 1 (IP30)

Cabinet Dimensions: 800 x 600 x 2000 mm (31.5 x 23.62 x 78.75 in)

Capacity: 28 modules per enclosure

Mounting: DIN Rail, or screw-mounted

Module Mounting Dimensions: 175 x 127 x 154 mm
(6.89 x 5 x 6.06 in)

Communications

Redundant 100 MB Ethernet with IEEE1588, twisted pair or fiber optic, up to 2 kilometers

Power Requirements

Power Supply Voltage Range: 90-240 VAC, 50/60 Hz or 110/220 VDC

Redundancy: 1:1 redundancy optional

Power Consumption and Heat Dissipation

I/O Type	Power Consumption (W)	Heat Dissipation (W)
AI mAV	17.65	4.47
AI RTDTC	6.45	2.5
AO	9.65	3.06
DI 16 channel (24 V)	3.57	3.57
DO relay (220 VAC)	11.25	11.25

Codes and Standards

Safety: IEC61508, UL508

Communications: IONET EGD

EMC:

IEC61000-4-2	IEC61000-4-5	IEC61000-4-9
IEC61000-4-3	IEC61000-4-6	IEC61000-4-10
IEC61000-4-4	IEC61000-4-8	IEC61000-4-12

Analog Input

A/D Converter: One per point

Channels: 16

Resolution: 24-bit

Current and Voltage: 0-20 mA, 0-5 V/1-5 V/±5 V/±10 V, 0.1% accuracy over full operating temperature range.

Thermocouple: 0.2% accuracy over full operating temperature range.

TC Type	Range Voltage mV	Range °C
T	-5.603 to 17.818	-200 to 350
J	-7.890 to 69.553	-200 to 1200
E	-8.825 to 76.373	-200 to 1000
K	-5.891 to 52.410	-200 to 1300
N	-3.990 to 47.513	-200 to 1300
B	0.787 to 11.263	400 to 1600
R	0 to 18.884	0 to 1600
S	0 to 17.947	0 to 1700

RTD: Pt100/Cu50, 0.2% accuracy over full operating temp. range (2- or 3-wire)

Isolation: Point, 500 VAC between any two channels, and between input and ground

Analog Output

D/A Converter: One per point

Channels: 8

Resolution: 12 bit

Signal: 0-20 mA, 0-10 V, 0.2% accuracy over full operating temp. range.

Isolation: Point, 500 VAC between any two channels, and between output and ground

Digital Input

Channels: 16

Signal: 24 V, positive/negative (sink/source) logic, 1 ms SOE

Isolation: Group, 1000 VAC between groups, 500 VAC between input and field grounds

Digital Output

Channels: 16

Signal: AC Relay

Rating: 250 VAC/10 A

Isolation: Point, 5000 VAC between contact and coil

Type: relay

Configuration: 1 NO

Response Time

Trip Time:	15 ms
Release Time (AC):	10 ms
Release Time (DC):	5 ms

Contact Material: Silver – chrome oxide

Contact Life

Mechanical:	20,000,000 operations @ no load
Electric:	100,000 operations @ rated resistive load

Replacement: Pluggable, Sealed

Terminations

Type: 24-pin (dual row) and 16-pin (single row) connectors

Wire Gauge: 2.5 mm², two-wire

Isolation Voltage: 2.21 kV

Density: 5.08 mm between pins

Length: 24-pin: 62.8 mm (2.47 in), 16-pin: 83.1 mm (3.27 in)



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