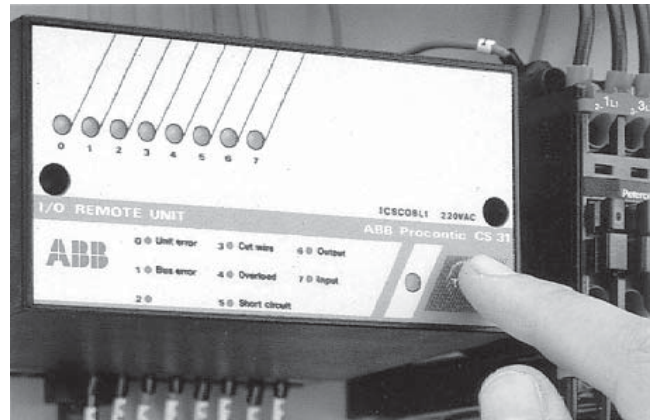


Extended Digital I/O for MODCELL™ Multiloop Processors and MOD 30ML Multiloop Controllers

- Low Cost Digital I/O Modules of 8 or 16 I/O Points
- One Interface Module on MODCELL or MOD 30ML
- Expand Digital I/O to 100 Points
- Useful for Interlocking, Sequencing or Discrete Control
- Configured using Visual Application Designer Software for MOD 30ML and MODCELL.



Extended Digital I/O for MODCELL™ Multiloop Processors & MOD 30ML Multiloop Controller

FUNCTIONALITY

Extended digital I/O modules expand the digital I/O capability of MODCELL Multiloop Processors and MOD 30ML Multiloop Controllers to a total of 100 discrete points. The modules communicate to the base unit over the Extended Digital I/O Network, an RS485 communication bus which connects to the base unit via a plug-in module. This module is not required to reside in a communications slot, leaving the communications channels on the unit open for host or peer-to-peer communications.

Extended digital I/O modules may be combined with the local I/O modules to provide the optimum configuration for a given application. Process measurements requiring a higher degree of resolution, or critical control loops, can be implemented using the single-point isolated local I/O modules.

EXTENDED DIGITAL I/O MODULES

Each module is mounted on a Module Carrier, a plug-in base which contains signal terminations, address switch and mounting plate. The module carrier can be DIN or surface mounted. Extended digital I/O modules provide status and error LEDs and diagnostic test button, and are available for 24VDC, 120VAC or 220VAC power supply.

Discrete input modules are available in isolated and non-isolated versions, for 24VDC, 230VAC and 120VAC inputs. Isolated versions provide optoisolation to 1500VAC. Discrete output modules provide eight relay or transistor outputs.

Combination discrete input/output modules have twelve 24V DC inputs and eight 2A relay outputs, while a configurable version of the combination module allows a total of eight points to be individually selected as 24VDC inputs or 24VDC (.5A) transistor outputs.

EXTENDED DIGITAL I/O NETWORK

The Extended Digital I/O Network is an RS-485 bus up to 500 meters (1600 feet) in length. It connects to the terminations on the base unit and is multidropped to the Extended Digital I/O modules. Two wires plus shield are used for the network (shield is required over 50m). CRC checking is provided by the network protocol.

One Extended Digital I/O Interface Module is required for each network to be connected to the base unit (maximum of two networks). It may be placed in any slot on the base unit. The Extended Digital I/O modules are scanned every 50ms.

CONFIGURATION

Extended Digital I/O modules are configured as part of the database using the Visual Application Designer (ViZapp). Wiring descriptions may be entered and printed for each input and output point.

GENERAL SPECIFICATIONS

Operating Range

AC Versions

110/120VAC: 112.8 - 127.2V 50/60Hz

220/230VAC: 195.5 - 253V 50/60Hz

DC Version

19.2 - 20VDC

Operating Temperature

0 to 55°C (32 to 131°F)

Storage Temperature

-40 to 75°C (-40 to 167°F)

Humidity - non condensing

Average £ 75% yearly

Maximum 95% over 30 days

Extended Digital I/O Network

Maximum Length 500 meters (1600 feet)

Baud rate 187.5K baud

Maximum addresses

32 (31 slaves + 1 Extended Digital I/O Interface module master at address 0)

Cabling (Extended Digital I/O bus)

Indoor use: Belden #9182

Indoor plenum use: Belden #89182

Underground use: Belden #9815 twisted twinax

Outdoor above ground use: NOT recommend.

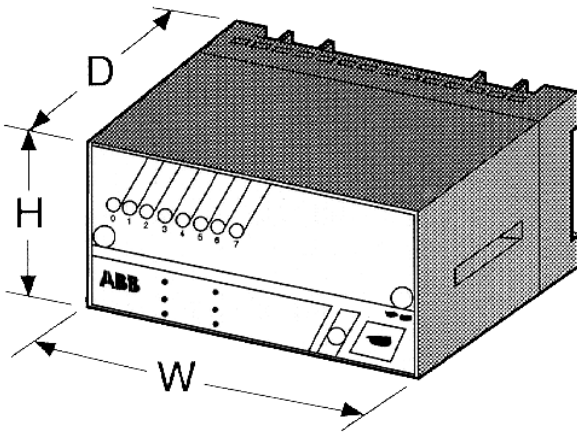
Termination:

120 ohm resistor across two conductors at end of cable (2 shipped with Extended Digital I/O Interface module)

DIMENSIONS

ICS Digital Modules with Plug-in Base

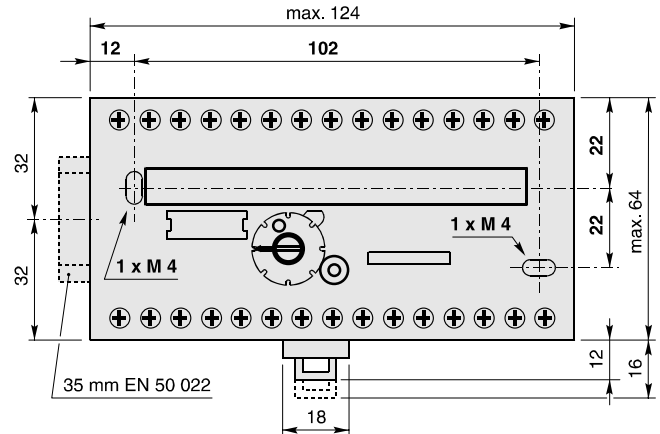
Weight 24Vdc Modules with base: 0.45 kg (1 lb)
 Weight 120/230Vac Modules with base: 0.63 kg (1.39 lbs)



	mm	inches
W	120	4.72
W (with base)	123	4.84
H	60	2.36
H (with base)	64	2.52
D	115	4.53

ECZ Plug-in Base

Weight: 0.20 kg (0.44 lbs)



	mm	inches
W	123	4.84
H	64	2.52
D	30	1.18

Mounting

DIN rail 35 mm
 Screw screws 04 mm (M4)

TECHNICAL CHARACTERISTICS - DIGITAL MODULES

ICSI 08 D1 Digital Input Module	120 / 230 VAC	24 VDC
Number inputs	8	8
Power supply isolation	1500 VAC	no
Inputs opto-isolated	no	no
Supply output regulated 24VDC (± 5%)	100 mA	-
Signal level, nominal	24 VDC	24 VDC
Signal level:		
0 signal	-3 to +5V	-3 to +5V
1 signal	+15 to +30 V	+15 to +30 V
Input current, 24VDC	6 mA	6 mA
Input delay	8 ms	8 ms
Max power consumption	10 VA	0.2 A
Max power dissipation	8 W	4.5 W

ICSI 16 D1 Digital Input Module	120 / 230 VAC	24 VDC
Number inputs	16	16
Power supply isolation	1500 VAC	no
Inputs opto-isolated	no	no
Supply output regulated 24VDC (± 5%)	100 mA	-
Signal level, nominal	24 VDC	24 VDC
Signal level:		
0 signal	-3 to +5V	-3 to +5V
1 signal	+15 to +30 V	+15 to +30 V
Input current, 24VDC	6 mA	6 mA
Input delay	8 ms	8 ms
Max power consumption	10 VA	0.2 A
Max power dissipation	8 W	4.5 W

ICSI 08 E1 Digital Input Module	120 / 230 VAC	24 VDC
Number inputs	8	8
Power supply isolation	1500 VAC	no
Inputs opto-isolated	1500 VAC	1500 VAC
Signal level, nominal	24 VDC	24 VDC
Signal level:		
0 signal	-3 to +5V	-3 to +5V
1 signal	+15 to +30 V	+15 to +30 V
Input current, 24VDC	12 mA	12 mA
Input delay	8 ms	8 ms
Max power consumption	10 VA	0.2 A
Max power dissipation	8 W	4.5 W

ICSI 16 E1 Digital Input Module	120 / 230 VAC	24 VDC
Number inputs	16	16
Power supply isolation	1500 VAC	no
Inputs opto-isolated	1500 VAC	1500 VAC
Signal level, nominal	24 VDC	24 VDC
Signal level:		
0 signal	-3 to +5V	-3 to +5V
1 signal	+15 to +30 V	+15 to +30 V
Input current, 24VDC	6 mA	6 mA
Input delay	8 ms	8 ms
Max power consumption	10 VA	0.2 A
Max power dissipation	8 W	4.5 W

ICSI 08 E3/E4 Digital Input Module	120 VAC	230 VAC
Number inputs	8	8
Power supply isolation	1500 VAC	1500 VAC
Inputs opto-isolated	1500 VAC	1500 VAC
Signal level, nominal	120 VAC	230 VAC
Signal level:		
0 signal	0 to 20 V	0 to 40 V
1 signal	79 to 132 V	159 to 242 V
Input current, 24VDC	3.2 mA	6.5 mA
Input delay	10 ms	10 ms
Max power consumption	5 VA	5 VA
Max power dissipation	6 W	6 W

ICSO 08 R1 Digital Output Module	120 / 230 VAC	24 VDC
Number outputs	8	8
Power supply isolation	1500 VAC	no
Outputs isolated	1500 VAC	1500 VAC
Switching capacity		
120/230 AC	2:00 AM	2:00 AM
DC	60 W (2A)	60 W (2A)
Load current, nominal	2 A AC1	2 A AC1
Minimum values	10 mVDC	10 mVDC
	10 mA	10 mA
Total current for 8 outputs	16 A	16 A
Short circuit shutdown	no	no
Shutdown voltage limiter	Varistor	Varistor
Max power consumption	6 VA	0.2 A
Max power dissipation	5 W	5 W

TECHNICAL CHARACTERISTICS - DIGITAL MODULES (continued)

ICSO 08 Y1 Digital Output Module	120 / 230 VAC	24 VDC
Number outputs	8	8
Power supply isolation	1500 VAC	no
Outputs opto-isolated	1500 VAC	1500 VAC
Maximum current	2 A AC1	2 A AC1
Total current for 8 outputs	8:00 AM	8:00 AM
Short circuit protection	yes	yes
Overload thermal protection	yes	yes
Max power consumption	6 VA	0.2 A
Max power dissipation	8 W	6 W

ICSK 20 F1 Digital Input/Output Module	120 / 230 VAC	24 VDC
Number inputs	12	12
Number outputs	8	8
Power supply isolation	1500 VAC	no
Max power consumption	0.3 A	10 VA
Opto isolated inputs	no	no
Input signal level, nominal	24 VDC	24 VDC
Input signal level		
0 signal	-3 to +5V	-3 to +5V
1 signal	+15 to +30 V	+15 to +30 V
Input current, 24 VDC	5 mA	5 mA
Input delay	8 ms	8 ms
Opto-isolated outputs	yes	yes
Switching capacity		
120/230 VAC 50/60 Hz	2:00 AM	2:00 AM
DC	60 W (2A)	60 W (2A)
Nominal output current	2 A AC1	2 A AC1
Minimum contact power	12 VDC	12 VDC
	10 mA	10 mA
Supply output regulated 24VDC (± 5%)	100 mA	-
Total output current		
Common M-Q		
120/230VAC 50/60 Hz	6:00 AM	6:00 AM
24 VDC	6:00 AM	6:00 AM
Common R-T		
120/230VAC 50/60 Hz	4:00 AM	4:00 AM
24 VDC	4:00 AM	4:00 AM
Short circuit protection	no	no
Over voltage protection	Varistor	Varistor

ICSC 08 L1 Digital Input/Output Module	120 / 230 VAC	24 VDC
Number inputs	8 maximum	8 maximum
Number outputs	8 maximum	8 maximum
Power supply isolation	1500 VAC	no
Max power consumption (with load on outputs)	0.2 A	0.2 A
Max power dissipation	6 W	6 W
Opto isolated inputs	no	no
Input signal level, nominal	24 VDC	24 VDC
Input signal level		
0 signal	-3 to +5V	-3 to +5V
1 signal	+15 to +30 V	+15 to +30 V
Input current (<24 VDC)	6 mA	6 mA
Input delay	8 ms	8 ms
Opto-isolated outputs	no	no
Output process supply	24 VDC	24 VDC
Max voltage drop (under nominal load)	3 V	3 V
Residual current, 0 signal	< 1 mA	< 1 mA
Switching frequency (inductive loads)	max 0.1 Hz	max 0.1 Hz
Maximum current	0.5 A	0.5 A
Lamp loads	5 W	5 W
Total current, 8 outputs	max 2 A	max 2 A
Short circuit protection	I > 2 A	I > 2 A
Overload protection	I > 0.6A, t > 250 ms	I > 0.6A, t > 250 ms

Ordering Information

1. Select Extended Digital I/O modules for appropriate power supply.
2. Select equal number of Extended Digital I/O Module Carrier units (one per Extended Digital I/O Module unless otherwise indicated).
3. Select one Extended Digital I/O Interface Module for each Extended Digital I/O Network to be connected to the base unit.

Extended Digital I/O Modules - for 110/120VAC External Power

Digital Input Modules

8 non-isolated 24VDC input channels	ICSI 08 D1-120
8 isolated 24VDC input channels	ICSI 08 E1-120
8 isolated 120VAC input channels	ICSI 08 E3-120
16 non-isolated 24VDC input channels	ICSI 16 D1-120
16 isolated 24VDC input channels	ICSI 16 E1-120

Digital Output Modules

8 relay output channels 2A	ICSO 08 R1-120
8 transistor output channels 24VDC 2A	ICSO 08 Y1-120

Digital Input/Output Modules

12 non-isolated 24VDC input channels and 8 isolated relay output channels	ICSK 20 F1-120
8 user-configurable channels for 24VDC input or 24VDC 500mA transistor output	ICSI 08 L1-120

Extended Digital I/O Modules - for 220/230VAC External Power

Digital Input Modules

8 non-isolated 24VDC input channels	ICSI 08 D1-230
8 isolated 24VDC input channels	ICSI 08 31-230
8 isolated 230VAC input channels	ICSI 08 E4-230
16 non-isolated 24VDC input channels	ICSI 16 D1-230
16 isolated 24VDC input channels	ICSI 16 E1-230

Digital Output Modules

8 relay output channels 2A	ICSO 08 R1-230
8 transistor output channels 24VDC 2A	ICSO 08 Y1-230

Digital Input/Output Modules

12 non-isolated 24VDC input channels and 8 isolated relay output channels	ICSK 20 F1-230
8 user-configurable channels for 24VDC input or 24VDC 500mA transistor output	ICSC 08 L1-230

Extended Digital I/O Modules - for 24VDC External Power

Digital Input Modules

8 non-isolated 24VDC input channels	ICSI 08 D1-24
8 isolated 24VDC input channels	ICSI 08 E1-24
16 non-isolated 24VDC input channels	ICSI 16 D1-24
16 isolated 24VDC input channels	ICSI 16 E1-24

Digital Output Modules

8 relay output channels 2A	ICSO 08 R1-24
8 transistor output channels 24VDC 2A	ICSO 08 Y1-24

Digital Input/Output Modules

12 non-isolated 24VDC input channels and 8 isolated relay output channels	ICSK 20 F1-24
8 user-configurable channels for 24VDC input or 24VDC 500mA transistor output	ICSC 08 L1-24

Extended Digital I/O Accessories

Extended Digital I/O Module Carrier	ECZ
Extended Digital I/O Interface Module (one per network) Occupies 2 slots on MODCELL Multiloop Processor or MOD 30ML Multiloop Controller	2020NZ10000B

NOTES

NOTES

WWW.TERMOPROCESOS.COM

The Company's policy is one of continuous product improvement and the right is reserved to modify the information contained herein without notice.

Printed in USA (05.5.04)

© MicroMod Automation, Inc. 2004



Application-smart control solutions

TermoProcesos e Instrumentación, SA. de CV.
Filósofos 301-101A Col. Tecnológico
Monterrey, NL. México ventas@termoprocessos.com
www.termoprocessos.com tpisysmx@intercable.net
52 (81) 83 59 61 30 - 52 (81) 83 59 62 29 - Fax 52 (81) 83 58 37 77