MULTI I/O IOM module

Multiple 4 DI, 6 DO, 6 UI & 2 AO for local or remote serial connection to a JACE® controller

Overview

The IOM range of I/O modules are designed for use as local I/O within motor control cabinets or as remote I/O connected via RS485 Modbus. Typical applications include building automation control systems.

The MULTI I/O module provides a mixture of 4 digital inputs, 6 digital outputs, 6 universal inputs and 2 analogue outputs. The analogue outputs and 2 digital output channels have appropriate hand-auto override switches and setting potentiometers. Each output has a yellow LED and each digital input has a bi-colour LED which indicates the current status of the connected device.

The IP20 rated module may be plugged together with other IOM modules and fitted onto standard TS35 DIN rail or fitted directly onto a backplate using screw fixings. The cascadable design allows power and 2-wire RS485 Modbus communications to connect through without any extra wiring.

Modbus address setting is by rotary switches which are easily accessible underneath the top cover. A bi-colour LED indicates the communications status. The MULTI I/O module has one 2-wire RS485 port supporting a Modbus communications network connection to a JACE® controller.

Key features

- DIN rail or direct mounting
- 24v ac or dc power operation
- 4 digital inputs 24v ac or dc
- 6 digital output relays with 8A contacts
- 6 universal inputs 0-10v / 0(4)-20ma / RTD / 24v dc
- 2 analogue outputs 0 to 10v dc
- RS485 2-wire Modbus open communications
- Easy address setting using rotary switches
- Bi-colour LED for module status information
- Monitored Hand-Auto override switches and setting potentiometer on each analogue output
- Analogue output channel overload monitor
- Configurable bi-colour LED DI status indication
- Pulse counting up to 20Hz
- Yellow LED DO status indication
- Scaled temperature values
- Sensor wire-break detection
- Presettable cable resistance offset

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Specifications

Analogue output data:

number of outputs / output range	2 / 0v to 10v dc
load resistance / max load per channel	>1,000Ω / <10ma
resolution / conversion error	10mv / ± (30mv + 0.5% of measured value)

Digital output data:

number of outputs / rated switching voltage	6 / 250v ac
rated / inrush current (resistive load)	8A / 12A
max power rating / max total module current	2,000VA / 32A
electrical life expectancy at rated / 2A load	1 x 10^5 cycles / 4 x 10^5 cycles @ 23°C & resistive load
mechanical life expectancy	30 x 10^6 cycles
maximum switching frequency	6 min^{-1} at rated current; 1,200 min^{-1} at no load
contact matl. / isolation test v (coil-contact)	AgNi 0.15 / 4 kV
output relay contact configuration	channels 1,2 & 3: change over contacts; channels 4,5 & 6: normally open contacts

Universal input data:

number of inputs / range (v / i / RTD / digital)	6 / 0v to 10v dc / 0(4)ma to 20ma dc / -40°C to +120°C / 24v dc
resolution (v / i / RTD(Ni1000 & Pt1000))	10mV / 20ua / 0.1°C
accuracy (v / i / RTD(Ni1000, Pt1000))	±(10mv + 0.3% of measured value) / ±(20ua + 0.4% of measured value) / ±0.4°C, ±0.6°C
input resistance (0v to 10v dc)	resistance type: fixed: 200,000Ω
input resistance (0(4)ma to 20ma dc)	resistance type: plug-in resistor: 250Ω ±0.1% (provided bagged in carton)
current loop input arrangement	not a source of current for the loop
reference resistance (RTD)	resistance type: plug-in resistor: sensor dependent ±0.1% (default fitted: 40,000Ω for RTD -40 to +120°C) optional plug-in resistor for RTD(Ni1000 & Pt1000): 5,110Ω ±0.1% (provided bagged in carton)
input current (digital input (10 to 30v dc))	minimum @10v: 50ua / typical @24v: 2.6ma / maximum @30v: 3.9ma

Digital input data:

	ac :	dc
number of inputs / rated input voltage	4 / 24v (18v to 28v)	4 / 24v (10v to 30v)
input resistance / logic '0'	60,000Ω / <2v	60,000Ω / <3v
maximum pulse frequency / minimum width	10Hz / 50ms	20Hz / 15ms

LED status indication:

per analogue output	yellow: intensity relative to output voltage; V<1.5v=off
per digital output	yellow: on or off
per digital input	bi-colour (software configurable): red, green or off
module status	bi-colour: red / green

Bus data:

bus protocol / bus interface	Modbus RTU / RS485, half duplex, non isolated
bus topology / max bus length	multidrop / 500m
bus speed	19,200 bps
bus line termination	integrated termination resistor (220Ω); activate via jumper (default: off)
bus protection	built-in transient protection
bus connector	pluggable male & female integrated connectors (modules mounted with zero spacing)
bus cabling	Shielded Twisted Pair (STP)

General data:

module power supply / module current	20v to 28v ac or dc / 310ma ac or 125ma dc
operating / storage temperature range	0°C to +50°C / -20°C to +70°C
CE marking	Low voltage directive (LVD) 2006/95/EC according requirements of EN 50178 EMC directive 2004/108/EC according requirements of EN 55011 and EN 61326-1
conductor cross section / strip length	0.2mm^2 to 2.5mm^2 screw clamp connection / 6mm
mounting / installation position	DIN-rail TS35 (35mm x 7.5mm) or direct mounting by M3 fixing / any
assembly/module size (l x w x h-TS35/direct)	up to 15 in a row with zero spacing / 88mm x 95mm x 60mm / 58mm
insulating material / flammability class	Housing: Noryl. Terminals: Polyamid 6.6 V0 / UL94-V0
protection degree (DIN 40050)	IP 20
installation guide	for mounting and I/O wiring details; please refer to the IOM Installation guide
communications guide	for Modbus communications details; please refer to the IOM Module Communications guide

How to Order

Product Code	Description
IOMMUL	4 DI, 6 UI, 2 AO and 6 DO with override + indication.

TRIDIUM

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