

Product Overview

The Vykon HVAC 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.

The Vykon HVAC MULTI I/O module provides a mixture of 4 digital inputs, 6 digital outputs, 6 analogue 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 modules on standard TS35 DIN rail or direct mounting; the cascable 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.

Connectivity

The MULTI I/O module has one 2-wire RS485 port supporting a Modbus communications network connection to the JACE® controller.

Engineering

Configuration and engineering of the MULTI I/O module is performed using Vykon HVAC.

Typical applications

Typical applications include building automation control systems.

Vykon HVAC Multiple I/O module MULTI I/O DATA SHEET



Features

- 4 digital inputs 24v ac or dc
- 6 analogue inputs 0 to 10v / 4 to 20ma / RTD
- 2 analogue outputs 0 to 10vdc
- 6 digital output relays with 8A contacts
- Hand-auto override switches and setting potentiometer on each analogue output
- DIN rail or direct mounting
- 24V ac or dc power operation
- Supports RS485 2-wire Modbus Open Communication network
- Easy address setting using rotary switches
- Bi-colour LED for module status information
- Yellow LED indication per output
- Bi-colour LED status indication per digital input

Vykon HVAC Multiple I/O module 4-DI 6-AI 2-AO 6-DO

Ordering information: VY- MULTI-I/O

Analogue output data:

number of outputs / output range
load resistance per channel / max load
resolution / conversion error

2 / 0v to 10v dc
>1,000 Ω / <10ma
10mv / \pm (30mv + 0.5%)

Digital output data:

number of outputs / rated switching voltage
rated / inrush current (resistive load)
max power rating / max total module current
electrical life expectancy at rated / 2A load
mechanical life expectancy
maximum switching frequency
contact matl. / isolation test v (coil- contact)
output relay contact configuration

6 / 240v ac
8A / 12A
2,000VA / 24A
>1 x 10⁵ cycles / > 4 x 10⁵ cycles
> 5 x 10⁶ cycles
6 min⁻¹ at rated current; 1,200 min⁻¹ at no load
AgNi / 4 kV
channels 1,2 & 3: change over contacts; channels 4,5 & 6: normally open contacts

Digital input data:

number of inputs / rated input voltage
input impedance / logic '0'
maximum frequency / nominal sample time
minimum pulse width

ac:
4 / 24v (12v to 28v)
15,000 Ω / <2v
10Hz / 20ms
50ms

dc:
4 / 24v (10v to 30v)
15,000 Ω / <3v
50Hz / 8ms
10ms

Analogue input data:

number of inputs / range (v / i / RTD)
module supported sensor types
A-D resolution (v / i / RTD)
resolution (v / i / RTD)
input resistance (0v to 10v dc)
input resistance (0ma to 20ma dc)
input resistance (RTD)
accuracy (v / i)
accuracy (Ni1000, NTC) / (Pt1000)

6 / 0v to 10v dc / 0ma to 20ma dc / -40°C to +120°C
Pt1000 / Ni1000 (Siemens) / Ni1000 (Std) / NTC1 / NTC1(Lin) / NTC3
10 / 10 / 14 bit
10mV / 20ua / \pm 0.1°C
resistance type: fixed: 200,000 Ω
resistance type: plug-in resistor: 250 Ω \pm 0.1% (not provided)
resistance type: plug-in resistor: 5,110 Ω \pm 0.1%
 \pm (10mv + 0.3% of measured value) / \pm (20ua + 0.4% of measured value)
 \pm 0.4°C (over full range) / \pm 0.6°C (over full range)

LED status indication:

per analogue output
per digital output
per digital input
module status

yellow: intensity relative to output voltage; V<1.5v=off
yellow: on or off
bi-colour: red; green or off. status: normal or inverted
bi-colour: green-normal operation; blinking red-communications error

Bus data:

bus protocol / bus interface
bus topology / max bus length
bus nodes maximum / bus speed
bus line termination
bus protection
bus connector
bus split connector (not included)
bus cabling

Modbus RTU / RS485, half duplex, non isolated
multidrop / 500m
64 / 19,200 bps
integrated termination resistors, activate via jumper (default: off)
built-in transient protection
pluggable male & female integrated connectors (modules mounted with zero spacing)
pluggable male or female screw connector. 0.2mm² to 1.0mm² insulation stripping length 7mm
twisted pair (use STP in industrial environments)

General data:

module power supply / module current
protection circuit
operating temperature range
storage temperature range
DIN-VDE regulations
assembly / module size (l x w x h)
conductor cross section /
isolating material / flammability class
mounting / installation position
insulation stripping length
electromagnetic compatibility
protection degree (DIN 40050)

20v to 28v ac or dc / 75ma ac or 30ma dc
reverse power supply voltage protection
0°C to +50°C
-20°C to +70°C
DIN-EN 50178: 1997 / DIN-VDE 0110 pollution degree 2, over voltage category III
up to 15 in a row with zero spacing / 88mm x 95mm x 60mm
0.2mm² to 1.5mm² screw clamp connection
Housing: Noryl. Terminals: Polyamid 6.6 V0 / UL94-V0
DIN-rail TS35 (35mm x 7.5mm) or direct mounting by M3 fixing / any position
6mm
CE in compliance
IP 20

