

Diagnostic Controller

Main Features

- Can be used with Normally Open or Normally Closed solenoid valves
- Option for dual/triple power supply

Compatibility

- 1oo1, 1oo2, 2oo2, and HIPPS
- Hydraulic and pneumatic actuators
- Spring return and double acting actuators

Functions

- Manual control of actuated valve for testing
- Indication LED for controller status

Communication

- 4-20mA with HART v. 7 – (IDC24-AF-1100xx)
 - o Device status according to NAMUR NE 107
- Modbus RTU – (IDC24-AF-2100xx)
- Foundation Fieldbus – H1 – (IDC24-AF-3000xx)

Control

- Via display on the device
- Configuration via USB connection to laptop
 - o [ValConnect](#)

Ordering information



Digital input function (Signals, buttons and selector)

- Start Partial stroke
- Local open/close
- Remote/local

Digital output functions (Signals and lamps)

- Common OK and Error
- Valve Open and Closed

Accessories

Part no.	Description
See separate datasheet	Pressure sensor
See separate datasheet	Sensor box – IDC24-SB (Position and pressure)

Part no.	Communication	System description
IDC24-A-110011	4-20 mA – HART	One separate SIS power supply
IDC24-A-210011	Modbus	
IDC24-A-300011	Foundation Fieldbus	
IDC24-A-110021	4-20 mA – HART	One separate SIS power supply and a main power supply for EST
IDC24-A-210021	Modbus	
IDC24-A-300021	Foundation Fieldbus	
IDC24-A-110034	4-20 mA – HART	1oo1 system with separate SOV's for SOT and PST
IDC24-A-210034	Modbus	
IDC24-A-300034	Foundation Fieldbus	
IDC24-A-110032	4-20 mA – HART	1oo2/2oo2 system with two SIS power supplies
IDC24-A-210032	Modbus	
IDC24-A-300032	Foundation Fieldbus	
IDC24-A-110042	4-20 mA – HART	1oo2/2oo2 system with two SIS power supplies and a power supply for EST
IDC24-A-210042	Modbus	
IDC24-A-300042	Foundation Fieldbus	

IDC24-A



Environmental

Protection degree:IP20
Operating temperature:..... -30 to 80 °C
Storage temperature: -30 to 80 °C
Relative Humidity:< 95% (No condensation)
PCB coating: According to G3, ISA-71.04-2013

Mechanical

Mounting: 35mm DIN rail
Dimensions:157x116x57mm
Weight: 0.5kg

Terminals:

Screw torque:.....0.4Nm (3.6Lb. in)
Wire diameter: AWG14-22 (0.5mm² to 2.5mm²)

Approvals and standards

EMC according to IEC 61000

Connections

Power supply 1

Input range:..... 20.4 – 27.6 VDC
Power dissipation (no auxiliary connections):..... <2W

Power supply 2

(IDC24-AF-xx0021/IDC24-AF-xx0042)

Input range:..... 20.4 – 27.6 VDC
Power dissipation (no auxiliary connections):..... <2W

Power supply 3

(IDC24-AF-xx0032/IDC24-AF-xx0034/IDC24-AF-xx0042)

Input range:..... 20.4 – 27.6 VDC
Power dissipation (no auxiliary connections):..... <2W

Analog input 0

(IDC24-A-1100xx/IDC24-A-1100xx)

Impedance:< 470 Ohm at 20mA and 9.4VDC
Linearity:< 0.1%
Temperature coefficient:0.025% / 1°C
Warm-up:.....10 min
Isolation: Galvanic

Analog output (Retransmitted position)

(IDC24-A-1100xx/IDC24-A-1100xx)

- HART v. 7
 - FSK, 1200Hz / 2200Hz 400-800mVpp

Signal: 4-20mA
Impedance: < 470 Ohm at 20mA and 9.4VDC
Linearity:< 0.1%
Temperature coefficient: 0.015% / 1°C
Warm-up:..... 10 min
Isolation: Galvanic

Modbus

(IDC24-A-2100xx/IDC24-A-2100xx)

Interface: RS485
Modbus mode:..... RTU with CRC16
Isolation:.....Galvanic

Foundation Fieldbus (Command and position)

(IDC24-A-3000xx/ IDC24-A-3000xx)

Device class:..... H1
ITK rev.:..... 5.00
Power Requirements:.....9-32 V
Current Consumption:.....< 5mA

Analog input (Position)

4-20mA position:..... 2-wire or 4-wire
R_{load}:..... Max 820 Ohm at 20mA
Operating area: 4 – 20mA
Minimum span:12mA
Cable length:.....Max 1000 meters
Linearity:..... < 0.1%
Temperature coefficient:.....0.01% / 1°C
Warm-up: 10 min
R_{in}: < 100 Ohm

Potentiometer input

3-wire potentiometer:.....5 kΩ to 20 kΩ
Cable length:.....Max 1.5 meters
Linearity:..... < 0.1%
Temperature coefficient:.....0.01% / 1°C
Warm-up: 10 min

Digital Input

Number of inputs:4
Cable length:.....Max 20 meters
Cable resistance Max 100 Ohm
Sensor supply voltage..... 8 VDC
Input type: Wet

Digital outputs

(IDC24-A-xx0011/IDC24-A-xx0032/IDC24-A-xx0034)

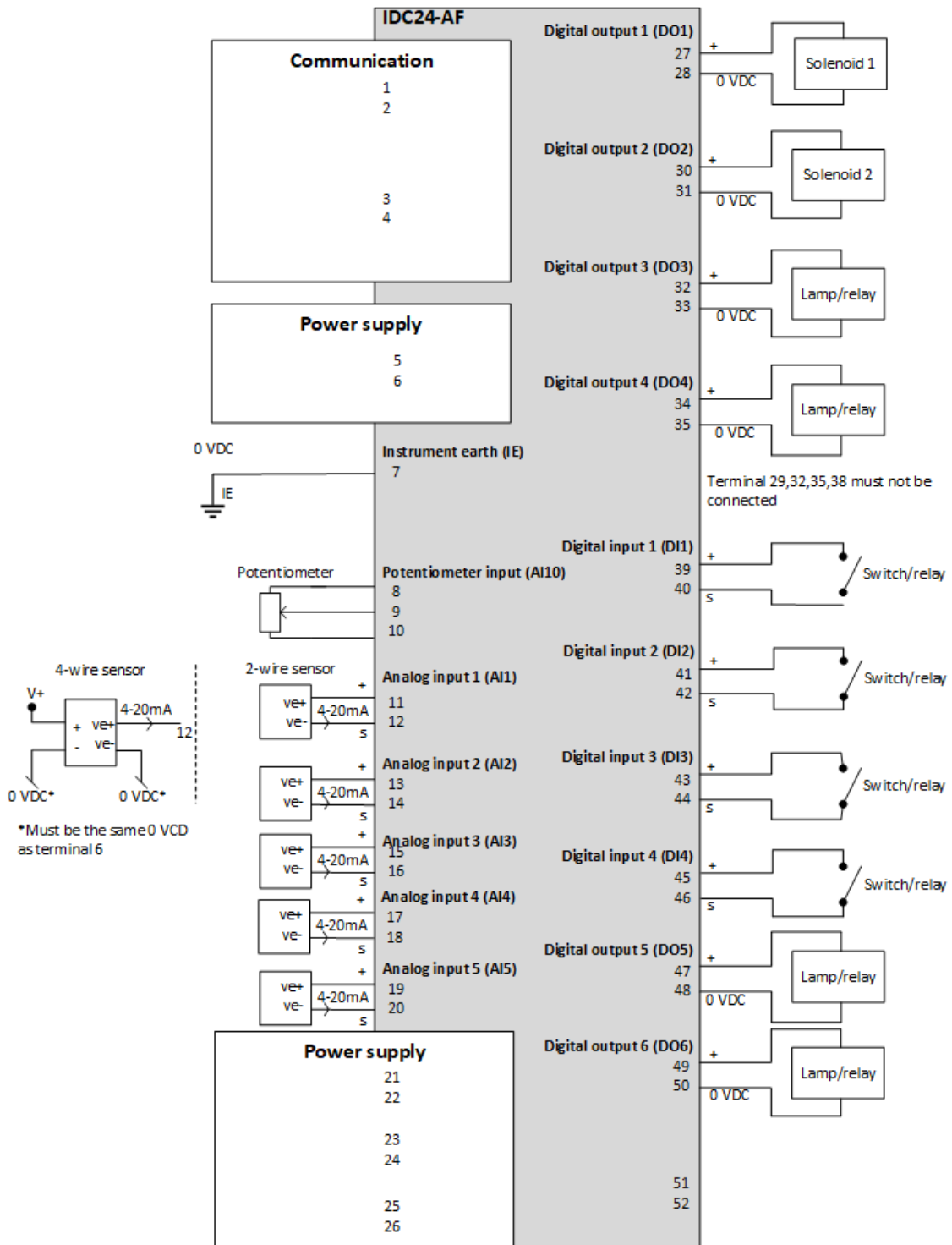
Outputs for lamps/relays:.....6
Total load: Max 2W at 24 VDC

Digital outputs

(IDC24-A-xx0021/IDC24-A-300042)

Outputs for lamps/relays:.....6
Load per digital output: Max 48W at 24 VDC
Total load:..... Max 192 at 24VDC

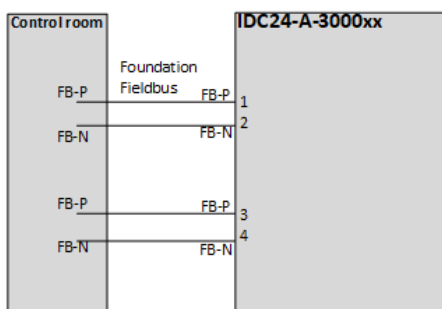
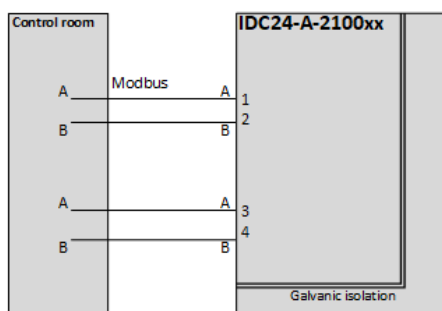
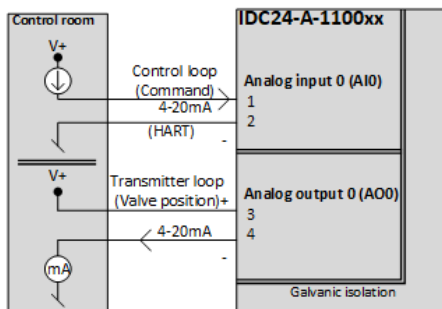
Connections



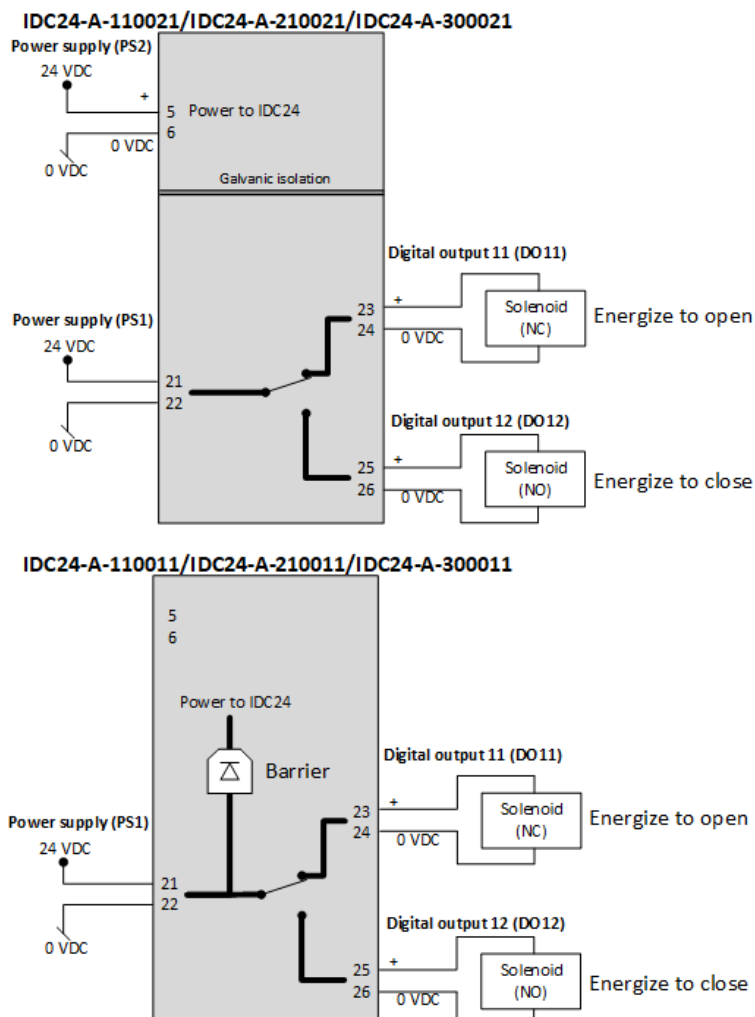
On the PCB are the following terminals shared:

- 0V: 6, 28, 31, 34, 37, 48, 50
- 8V out: 39, 41, 43, 45
- 24V out (fused): 11, 13, 15, 17, 18

Communication

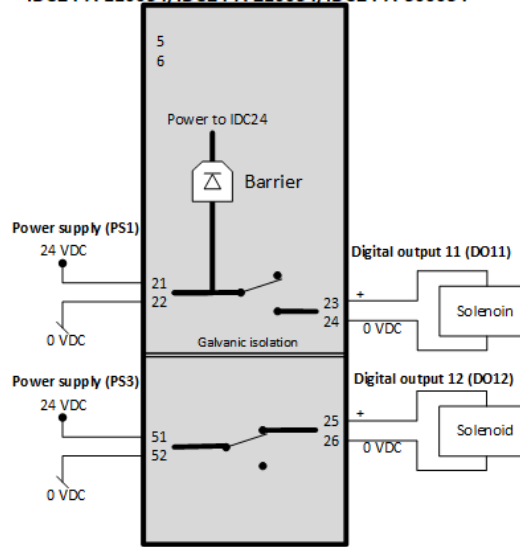


Power supply

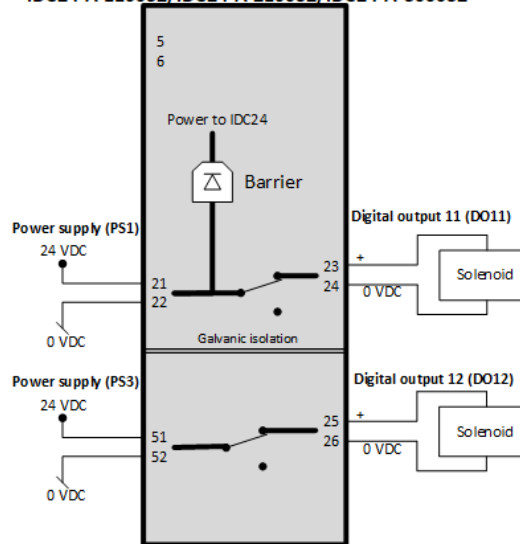


The relay breaks the 0V line. Terminals 21, 23 and 25 are common.

IDC24-A-110034/IDC24-A-210034/IDC24-A-300034



IDC24-A-110032/IDC24-A-210032/IDC24-A-300032



IDC24-A-110042/IDC24-A-210042/IDC24-A-300042

