AIA-DO-5

16 channels - Wiring Adapter for Alspa CE2000™ migration toward a new system

Description :

The wiring adapter **AIA-DO-5** allows to migrate up to 16 Digital Outputs previously connected to an Alspa CE2000™ Digital Output module to a Distributed Control System (DCS), or a Programmable Logic Controller (PLC).

It is easy to install the **AIA-DO-5** in the existing I/O card file, at the place occupied by the Alspa CE2000 Digital Output module. It's directly connected on the RA150 module allowing to protect the existing wiring investment.

The connection to the new Digital Output card is done using a shielded cable, with a D-Sub 37 sockets female connector at one end, and labeled flying wires or a suitable connector matching with the new system or controller used at the other end.

The power supply status is displayed by a green LED in the front of the adapter.
An additional monitoring contact is also available between terminals 3 (2d) and 48 (32d) of the RA150 module. This contact is used to trigger an alarm if the power supply voltage is no longer present (or less than 2,5Vdc) between terminals 1 (2z) **+** and 2 (2b) **-** of the RA150.

The command status of each channel is displayed by a yellow LED in the front of the adapter.

It is particularly suitable for migrating an ASLPA CE2000™ I/O card with reference :

- LC105A-2: Discrete output module with polarized contacts
  - Max. current / Rated voltage: 0.5A@24Vdc

Product options :

Option **VSH** : Conformal coating (Tropicalization)

Technical specifications :

Dimensions :
Length : 252 mm
Width : 26 mm
Height : 261 mm
Weight :
330 g
Temperature range :
Operating : 0°C à 50°C
Storage : -10°C à 50°C
Humidity :
Up to 90% (no condensation)
Mounting :
In the existing CE2000 I/O card file
Insulation voltage :
1500 Vac between input (control signal) and output (contacts)

Channel characteristics :
Each output controls a 24Vdc relay (1 contact)
(See relay specifications page 2)
Short circuit and overcurrent : Resettable fuse 1.8A@20°C
(Reset by disconnecting the load))
Overvoltage protection : 39Vdc transil diode
Relay contact protection : Snubber RC
Residual current after short circuit detection : 38,5mA
Voltage drop at 0.5A : <1V
Power supply specifications :
A monitoring contact is available between terminals 3 (2d) and 48 (32d) of the RA150 module. (ZVPE et ZVPS not wired)
Power supply range (between 1 (2z) and 2 (2b) of the RA150) : 20 to 28 Vdc
Power loss indication threshold : < 2,5 Vdc
Protection by a 5X20 10A 250V time delay fuse.

Connection to the process signals :
1 x DIN male connector.
Connection to the DCS or to the PLC :
1 x D-Sub 37 pin male connector with UNC 4-40 female lock.

TYPE	**ELECTROMECHANICAL RELAY**

REFERENCE	**945155**

General characteristics	
Mechanical expected life :	20.000.000 cycle
Expected life at max load :	300000 cycle (2A, 250Vca or 30Vcc)
Operate time / release time :	10 ms / 5 ms
Coil / contacts insulation :	1500 Vac limited to 1000Vac by product specifications
Dielectric strength between open contacts :	750 Vac
Ambient temperature	-20°C to 60°C
Initial insulation resistance	1000 MΩ (At 500Vdc)
Dimensions	L : 17.5mm / W : 6.5mm / H : 12.5mm

Coil characteristics :	
Rated voltage	24Vcc
Max voltage	31,2Vcc
Must operate voltage	16,8Vdc
Must release voltage	2,4Vdc
Nominal operating current	8,3 mA
Coil resistance	2880 ohms
Nominal power	0,2W at 24Vdc

Contacts characteristics :	
Max permanent current :	2 A at 250 Vac or 30 Vdc
Max. switching voltage :	250 Vac, 30 Vdc
Max. switching current :	5 A
Max. switching capacity :	1,250 VA, 150 W
Min. permissible load :	10 mA at 5 Vdc
Max frequency	5Hz (2A/250Vca/30Vcc)

Process connector and terminal block :

Pinout of the DIN 41612 type F 48-pin male connector :

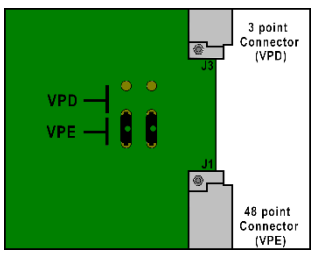
	d	b	z
2	o 24Vdc Monitoring	o ZVPE	o PVPE
4	o	o	o
6	o E01	o CS	o E00
8	o E02	o	o CS
10	o CS	o E03	o CS
12	o CS	o E04	o
14	o	o CS	o E05
16	o E07	o CS	o E06
18	o	o	o CS
20	o E09	o CS	o E08
22	o E10	o	o CS
24	o CS	o E11	o CS
26	o CS	o E12	o
28	o	o CS	o E13
30	o E15	o CS	o E14
32	o 24Vdc Monitoring	o	o CS

RA150 Terminal Block :
PVPS and ZVPS should not be wired to allow monitoring.

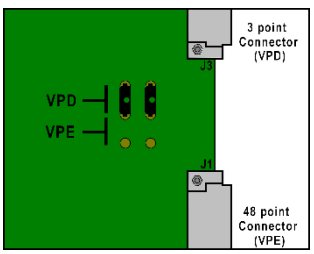
1	**PVPE**
2	**ZVPE**
3	24V Monitoring
4	
5	
6	
7	S00
8	CS(0VP)
9	S01
10	CS(0VP)
11	
12	S02
13	CS(0VP)
14	S03
15	CS(0VP)
16	
17	S04
18	CS(0VP)
19	S05
20	CS(0VP)
21	
22	S06
23	CS(0VP)
24	S07
25	CS(0VP)
26	
27	
28	S08
29	CS(0VP)
30	S09
31	CS(0VP)
32	
33	S10
34	CS(0VP)
35	S11
36	CS(0VP)
37	
38	S12
39	CS(0VP)
40	S13
41	CS(0VP)
42	
43	S14
44	CS(0VP)
45	S15
46	CS(0VP)
47	
48	24V Monitoring

Connecting the supply voltage :

It is imperative to check the position of the ST1 and ST2 jumpers before powering up the card.
Make sure that the applied voltage is the one that corresponds to the AIA card installed. (24Vdc for the AIA-DO-5)
The change of position of the ST1 and ST2 jumpers must be done with the power off.



Lower Position:
The power supply comes from an external voltage VPE connected between terminals 1 (2z)+ and 2 (2b) of the RA150 and available via the 48-pin connector J1 of the AIA-DO-5.



Upper Position:
The power supply comes from a VPD voltage distributed by the bottom of the file and available via the 3-point connector J3 of the AIA-DO-5.