Optidrive Applications Support Library

Application Note	**AN-ODP-2-010**
Title	**Additional relay output option modules**
Related Products	**Optidrive P2**
Level **1**	1 – Fundamental - No previous experience necessary 2 – Basic – Some Basic drives knowledge recommended 3 – Advanced – Some Basic drives knowledge required 4 – Expert – Good experience in topic of subject matter recommended

Overview

The Optidrive P2 is designed with two standard user relay outputs. Where additional relays are required, the Optidrive P2 can be fitted with an option to extend the drives relay count. The part numbers for options modules with extended relay functionality that are designed for the Optidrive P2 are given below:

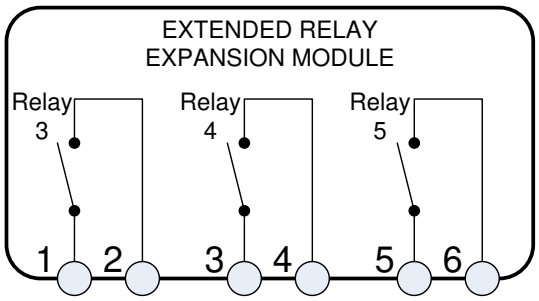
Option Part Number	Additional Relays Provided	Notes
82-OPT-2-CASCD-IN	3	Fitted to Optidrive P2 option module slot
82-OPT-2-EXTIO-IN	1	Additional Digital Inputs (3) also provided Fitted to Optidrive P2 option module slot
82-OPT-2-CANIO-IN	3	Additional Digital Inputs (3) also provided Fitted to Optidrive P2 RJ45 Communications Port

This application note details the use and configuration of the additional relays for each of the option module mentioned above. If additional I/O is provided in the same option module then this is detailed in the option module user guide.

Extended Relay Option (82-OPT-2-CASCD-IN)

Pin Out Configuration

Terminal	Short Name	Long Name	Contact Rating
1	RL3-C	Relay 3 Output Common	Relay contacts, 250V AC, 30V DC, 5A
2	RL3-NO	Relay 3 Output NO	Relay contacts, 250V AC, 30V DC, 5A
3	RL4-C	Relay 4 Output Common	Relay contacts, 250V AC, 30V DC, 5A
4	RL4-NO	Relay 4 Output NO	Relay contacts, 250V AC, 30V DC, 5A
5	RL5-C	Relay 5 Output Common	Relay contacts, 250V AC, 30V DC, 5A
6	RL5-NO	Relay 5 Output NO	Relay contacts, 250V AC, 30V DC, 5A



The Option module is slotted into the option module slot on the Optidrive P2.

Parameter Configuration

For Optidrive P2 the extended relay module can be configured to run with some default settings applied to the relay functionality, or they can be programmed via the (Optional) drive PLC programming functionality and the drive programming software.
Parameter P9-41 (Relay 3, 4, 5 function select) is used to configure the operation of the relays. The table below shows the relay configuration summary for P9-41.

P9-41	Function Selected
0	Default Operation
1	PLC logic defined operation

When P9-41 is set to 0 (default) the relay functionality is pre-defined by the drive with the following functions.

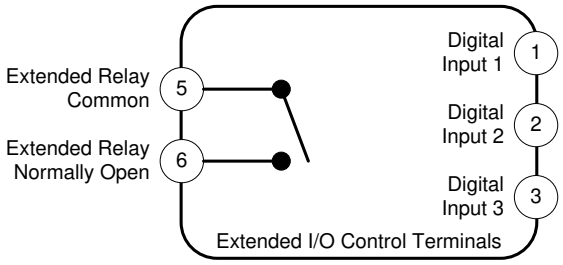
Relay No.	Function
Relay 3	Drive Healthy Indication (close on Healthy)
Relay 4	Drive Fault Indication (close on fault)
Relay 5	Drive Running Indication (close on enable)

Note that the drive standard relays (relays 1 and 2) are still fully configurable via parameters P2-15 and P2-18 for additional flexibility / functionality.

Extended Input / Output Option (82-OPT-2-EXTIO-IN)

Pin Out Configuration

Terminal	Short Name	Long Name	Terminal Rating
1	DI6	Digital Input 6	Refer to User Guide
2	DI7	Digital Input 7	Refer to User Guide
3	DI8	Digital Input 8	Refer to User Guide
4	-	NC	Relay contacts, 250V AC, 30V DC, 5A
5	RL3-C	Relay 3 Output Common	Relay contacts, 250V AC, 30V DC, 5A
6	RL3-NO	Relay 3 Output NO	Relay contacts, 250V AC, 30V DC, 5A



The Option module is slotted into the option module slot on the Optidrive P2.

Parameter Configuration

For Optidrive P2 the extended I/O module can be configured to run with a default 'Drive Healthy' settings applied to the relay functionality or it can be programmed via the (Optional) drive PLC programming functionality and the drive programming software.

Parameter P9-41 (Relay 3 function select) is used to configure the operation of the relay. The table below shows the relay configuration summary for P9-41.

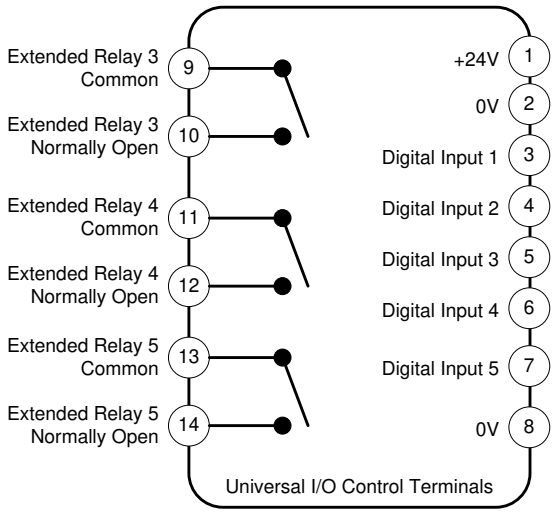
P9-41	Function Selected
0	Default Operation
1	PLC logic defined operation

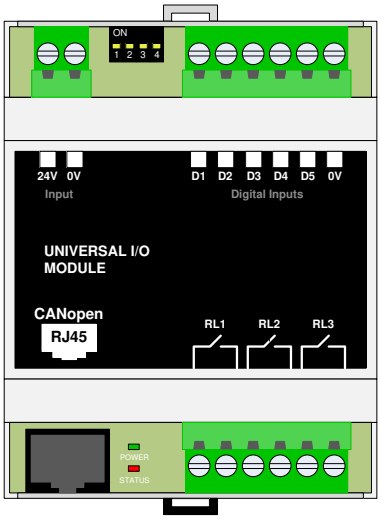
When P9-41 is set to 0 (default) the relay functionality is pre-defined as the Drive Healthy Indication (close on Healthy).
Note that the drive standard relays (relays 1 and 2) are still fully configurable via parameters P2-15 and P2-18 for additional flexibility / functionality.

Universal I/O Module (82-OPT-2-CANIO-IN)

Pin Out Configuration

Terminal	Short Name	Long Name	Terminal Rating
1	+24V	+24V Input	Refer to User Guide
2	0V	0V Input	Refer to User Guide
3	DI1	Extended Digital Input 1	Refer to User Guide
4	DI2	Extended Digital Input 2	Refer to User Guide
5	DI3	Extended Digital Input 3	Refer to User Guide
6	DI4	Extended Digital Input 4	Refer to User Guide
7	DI5	Extended Digital Input 5	Refer to User Guide
8	0V	0V Input	Refer to User Guide
9	RL3-C	Relay 3 Output Common	Relay contacts, 250V AC, 30V DC, 5A
10	RL3-NO	Relay 3 Output NO	Relay contacts, 250V AC, 30V DC, 5A
11	RL4-C	Relay 4 Output Common	Relay contacts, 250V AC, 30V DC, 5A
12	RL4-NO	Relay 4 Output NO	Relay contacts, 250V AC, 30V DC, 5A
13	RL5-C	Relay 5 Output Common	Relay contacts, 250V AC, 30V DC, 5A
14	RL5-NO	Relay 5 Output NO	Relay contacts, 250V AC, 30V DC, 5A





The Option module is connected to the RJ45 communication port on the drive. The option module interfaces with the CanOpen communication pins on the drive such that the option module and CanOpen communication to other devices cannot be used simultaneously. The drive Modbus communication Pins on the RJ45 connector can still be used to interface to a Modbus master.

Parameter Configuration

For Optidrive P2 the universal I/O module can be configured to run with some default settings applied to the relay functionality, or they can be programmed via the (Optional) drive PLC programming functionality and the drive programming software.

Parameter P9-41 (Relay 3, 4, 5 function select) is used to configure the operation of the relays. The table below shows the relay configuration summary for P9-41.

P9-41	Function Selected
0	Default Operation
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When P9-41 is set to 0 (default) the relay functionality is pre-defined by the drive with the following functions.

Relay No.	Function
Relay 3	Drive Healthy Indication (close on Healthy)
Relay 4	Drive Fault Indication (close on fault)
Relay 5	Drive Running Indication (close on enable)

Note that the drive standard relays (relays 1 and 2) are still fully configurable via parameters P2-15 and P2-18 for additional flexibility / functionality.

Appendix:

Revision History			
Version	Comments	Author	Date
1.00	Document Creation	JP	08/02/12