



**INVERTEK
DRIVES**
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OPTIDRIVE SECOND RELAY OUTPUT MODULE



SAFETY NOTICES

WARNING is given where there is a hazard that could lead to injury or death of personnel.

CAUTION is given where there is a hazard that could lead to damage to equipment.

It is the responsibility of the installer to ensure that the equipment or system into which the product is incorporated complies with the EMC legislation of the country of use. Within the European Union, equipment into which this product is incorporated must comply with 89/336/EEC, Electromagnetic Compatibility.

WARNING

Within the European Union, all machinery in which this product is used must comply with the Directive 89/392/EEC, Safety of Machinery. In particular, the equipment should comply with EN60204-1.

WARRANTY

Complete Warranty Terms and Conditions are available upon request from your IDL Authorised Distributor.

CAUTION

- Store the Option in its box until required. It should be stored in a clean and dry environment. Temperature range -40°C to $+60^{\circ}\text{C}$.

- Install the Option onto the Optidrive by inserting the row of 11 pins into the terminal connector of the Optidrive, ensuring that the terminals are tightened.

- If the Option is being used with Size#1 Optidrive, care should be taken to support the Option when the terminal screws of the Option are being tightened or loosened.

WARNING

- Optidrives and the Options should be installed only by qualified electrical persons and in accordance with local and national regulations and codes of practice.

- **Electric shock hazard!** Disconnect and **ISOLATE** the Optidrive before attempting any work on it. High voltages are present at the terminals and within the drive for up to 10 minutes after disconnection of the electrical supply.

- Where the electrical supply to the drive is through a plug and socket connector, do not disconnect until 10 minutes have elapsed after turning off the supply.

User Guide

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The manufacturer accepts no liability for any consequences resulting from inappropriate, negligent or incorrect installation.

The contents of this User Guide are believed to be correct at the time of printing. In the interests of a commitment to a policy of continuous improvement, the manufacturer reserves the right to change the specification of the product or its performance or the contents of the User Guide without notice.

SAFETY

This option is specifically designed to be used with the Optidrive variable speed drive product and is intended for professional incorporation into complete equipment or systems. If installed incorrectly it may present a safety hazard. The Optidrive uses high voltages and currents, carries a high level of stored electrical energy, and is used to control mechanical plant that may cause injury. Close attention is required to system design and electrical installation to avoid hazards in either normal operation or in the event of equipment malfunction.

System design, installation, commissioning and maintenance must be carried out only by personnel who have the necessary training and experience. They must read carefully this safety information and the instructions in this Guide and follow all information regarding transport, storage, installation and use of the Option module, including the specified environmental limitations.

Please read the IMPORTANT SAFETY INFORMATION below, and all Warning and Caution boxes elsewhere.

STANDARDS CONFORMITY

An Optidrive fitted with this Option complies with the following standards:

- CE-marked for Low Voltage Directive.
- IEC 664-1 Insulation Coordination within Low Voltage Systems.
- UL 840 Insulation Coordination for electrical equipment.
- EN50081-2 EMC Generic Emissions Standard, Industrial Level.
- EN50082-2 EMC Generic Immunity Standard, Industrial Level.
- Enclosure ingress protection, EN60529 IP00, NEMA 250.
- Flammability rating according to UL 94.

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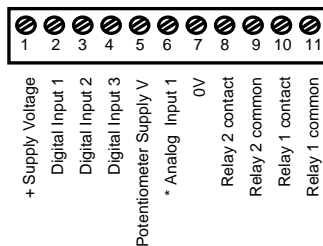
EXPLANATION

The Second Relay Output Module can be used in applications where the analog/digital output from the drive is converted to a relay output.

Typical applications are where two relay outputs are required. The functions of the relays are programmable in the drive and can be any of the following:

- Drive enabled
- Drive healthy
- Drive at set speed
- Drive at zero speed
- Drive at max speed
- Motor in overload

OPTION MODULE CONTROL TERMINALS – Common to all Drives



* Analog inputs should be connected to terminals 6 & 7.

Note :

The second relay output contacts are available on terminals 8 and 9. This relay utilises the drive's analog/digital output for operation - therefore the analog output is not available when this module is fitted.

This Option is available in 2 versions – one suitable for the ODE range and the other for the ODE-2/ODP range of drives.

Part No. - ODE-2ROUT-xx	-	Optidrive E
ODP-2ROUT-xx	-	Optidrive E2
	-	Optidrive Plus
	-	Optidrive VTC

SPECIFICATIONS

Max Relay switching voltage:	250V AC / 220V DC
Max Relay switching current:	1A
Max input voltage :	+/- 50V DC
Environmental :	-10°C ... +50°C
Conformity :	IP00, UL94V-0

OPERATION – ODP-2ROUT-xx (ODE-2 Range only)

Programming the first relay output

Since the first relay output (fitted within the Optidrive) is programmed using P-18 in the Optidrive, two completely independent relay outputs are available. The following options are supported for relay 1 :

P-18	Relay 1 output function select
0 : Drive enabled	Defines the function of the user relay 1, when the operating conditions are met. Disabled : Contacts open Enabled : Contacts closed Options 4 to 7: the Relay output is enabled using the level set in P-19
1 : Drive healthy	
2 : Motor at target speed	
3 : Drive tripped	
4 : Motor speed >= limit	
5 : Motor current >= limit	
6 : Motor speed < limit	
7 : Motor current < limit	

Programming the second relay output

The second relay output is controlled using Optidrive parameter P-25. This can be set to any of the choices 0-7 as described below:

P-25	Relay 2 output function select
0 : Drive enabled	Defines the function of the user relay 2, when the operating conditions are met. Disabled : Contacts open Enabled : Contacts closed Options 4 to 7 : the Digital output is enabled using the level set in P-19
1 : Drive healthy	
2 : Motor at target speed	
3 : Drive tripped	
4 : Motor speed >= limit	
5 : Motor current >= limit	
6 : Motor speed < limit	
7 : Motor current < limit	

OPERATION – ODE-2ROUT-xx (Optidrive E only)

Programming the first relay output

Since the first relay output (fitted within the Optidrive) is programmed using P-18 in the Optidrive, two completely independent relay outputs are available. The following options are supported for relay 1 :

P-18	Relay 1 output function select
0 : Drive enabled	Defines the function of the user relay 1, when the operating conditions are met. Disabled : Contacts open Enabled : Contacts closed
1 : Drive healthy	
2 : Motor at target speed	
3 : Motor speed at zero	
4 : Motor speed at maximum (P-01)	
5 : Motor overload (current >P-08)	

Programming the second relay output

The second relay output is controlled using Optidrive parameter P-25. This should be set to either 2 or 3 as described below:

P-25	Relay 2 output function select
1 : Drive enabled	Defines the function of the user relay 2, when the operating conditions are met. Disabled : Contacts open Enabled : Contacts closed
2 : Motor at target speed	

OPERATION – ODP-2ROUT-xx (Optidrive Plus and VTC only)

Programming the first relay output

Since the first relay output (fitted within the Optidrive Plus) is programmed using P2-13 in the Optidrive plus, two completely independent relay outputs are available. The following options are supported for relay 1:

P2-13	Relay 1 output function select
0: Drive Enabled	If P2-15 = 0 (Normally Open), the relay contacts are closed when the selected condition is fulfilled. If P2-15 = 1 (Normally Closed), the relay contacts are open when the selected condition is fulfilled.
1: Drive healthy	
2: Motor at target speed	
3: Motor speed > 0	
4: Motor speed > limit	
6: 2 nd Analog in > limit	

Programming the second relay output

The second relay output is controlled using Optidrive Plus parameter P2-11. This can be set to any of the choices 0-6 as described below:

P2-11	Relay 2 output function select
0: Drive enabled	Defines the function of the user relay 2, when the operating conditions are met. Disabled : Contacts open Enabled : Contacts closed The control limit used for settings 4, 5 and 6 is defined in P2-12.
1: Drive healthy	
2: Motor at target speed	
3: Motor speed > 0	
4: Motor speed > limit	
6: 2 nd Analog in > limit	