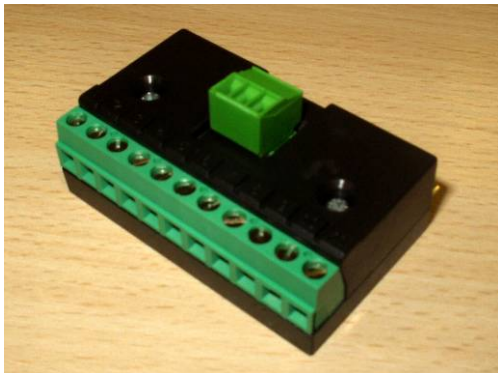




## OPTIDRIVE PLUS THIRD RELAY OUTPUT MODULE

### User Guide



#### DECLARATION

All rights reserved. No part of this User Guide may be reproduced or transmitted in any form or by any means, electrical or mechanical including photocopying, recording or by any information storage or retrieval system without permission in writing from the publisher.

Copyright Bardac Corporation ©2005

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 SAFETY NOTICE carefully, and all Warning and Caution boxes elsewhere.

#### 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.

#### CAUTION

- Store the Optidrive Option Module in its box until required. It should be stored in a clean and dry environment. Temperature range  $-40^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$ .
- Install the Option Module 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 Module is being used with Size#1 Optidrive, care should be taken to support the Option Module when the terminal screws of the Option Module are being tightened or loosened.

#### WARNING

- Optidrives and the Option Modules 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.

#### 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.

#### WARRANTY

All Invertek Drives Ltd (IDL) products carry a 2-year warranty, valid from the date of manufacture.

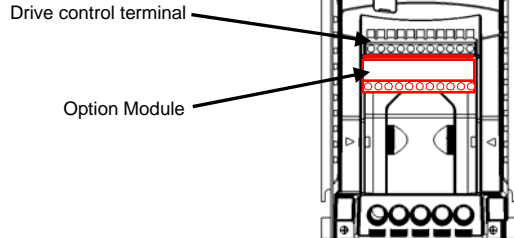
*Complete Warranty Terms and Conditions are available upon request from your IDL Authorised Distributor.*

Part No. 82-3ROUT-IN  
Iss 1.00

## MECHANICAL INSTALLATION

Option PCB inserted into Optidrive control terminal strip.

All 11 terminal screws on the Optidrive must be tightened to ensure good electrical contact and correct functionality.

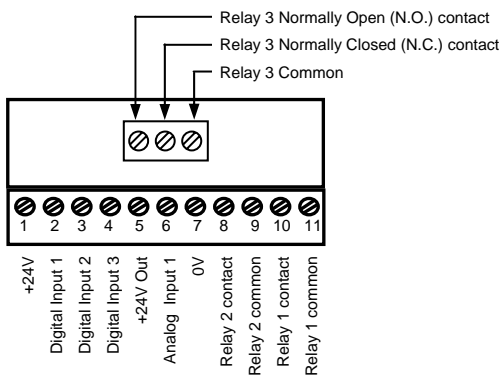


Optidrive size 2

## 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

## OPTION MODULE CONTROL TERMINALS



## EXPLANATION

The Third Relay Output Module can be used in applications where two or three relay outputs are required.

The functions of the first and second relay output are programmable in the drive and can be any of the following:

- Drive enabled
- Drive healthy
- Motor at target speed
- Motor speed large than zero
- Motor speed large than a given limit
- Motor torque/current large than a given limit
- 2<sup>nd</sup> analog input large than a given limit

The function of the third relay output is fixed to represent "Drive healthy". Note that by using the N.O./ N.C. contacts, the 3<sup>rd</sup> relay output can represent both "Drive healthy" or "Drive Fault".

For Programming information please see the Operation section below or for further details please refer to the Drive User Guide.

## OPERATION

### Programming the first relay output

Since the first relay output (fitted within the drive) is programmed using P2-13 in the drive. The following options are supported for relay 1:

- P2-13 = 0 Drive enabled
- P2-13 = 1 Drive healthy
- P2-13 = 2 Drive at target speed
- P2-13 = 3 Motor speed > zero
- P2-13 = 4 Motor speed > limit (defined in P2-14)
- P2-13 = 5 Motor torque/current > limit (defined in P2-14)
- P2-13 = 6 2<sup>nd</sup> analog input > limit (defined in P2-14)

Parameter P2-15 allows the relay to be programmed to operate in N.O. (normally open) or N.C. (normally closed) mode:

### Programming the second relay output

The second relay output is controlled using drive parameter P2-11. The value in this parameter should be set between 0 and 6, ie digital output mode to ensure correct operation of the relay.

- P2-11 = 0 Drive enabled
- P2-11 = 1 Drive healthy
- P2-11 = 2 Drive at target speed
- P2-11 = 3 Motor speed > zero
- P2-11 = 4 Motor speed > limit (defined in P2-12)
- P2-11 = 5 Motor torque/current > limit (defined in P2-12)
- P2-11 = 6 2<sup>nd</sup> analog input > limit (defined in P2-12)

### Programming the third relay output

The third relay output function is fixed to represent "Drive healthy" or "Drive tripped", depending on whether the N.C. or N.O. contacts are used, and is enabled when P2-01 = 20, 21 or 22.

Since the 3<sup>rd</sup> relay output is controlled by the digital output signal on Terminal 3, the 2<sup>nd</sup> digital input is not available in this mode

*Please refer to the drive user guide for more information.*

## NOTES