RDCO-01/02/03 DDCS Communication Option Modules

Overview

The RDCO-0x DDCS Communication Options are add-on modules for the RMIO Motor Control and I/O Board, used in ACS 800 family frequency converters. RDCO modules are available factory-installed as well as retrofit kits.

The RDCO module includes the connectors for fibre optic DDCS channels CH0, CH1, CH2 and CH3. The usage of these channels is determined by the application program; see the *Firmware Manual* of the drive. However, the channels are normally assigned as follows:

CH0 – overriding system (e.g. fieldbus adapter)
CH1 – I/O extensions
CH2 – Master/Follower link
CH3 – PC tools (such as Drive*Ware).*

There are several types of the RDCO. The difference between the types is the optical components. In addition, each type is available with a coated circuit board, this being indicated by a "**C**" suffix, e.g. RDCO-03C.

Module Type	Optical Component Type			
	CH0	CH1	CH2	CH3
RDCO-01(C)	10 MBd	5 MBd	10 MBd	10 MBd
RDCO-02(C)	5 MBd	5 MBd	10 MBd	10 MBd
RDCO-03(C)	5 MBd	5 MBd	5 MBd	5 MBd

The optical components at both ends of a fibre optic link must be of the same type for the light intensity and receiver sensitivity levels to match. Plastic optical fibre (POF) cables can be used with both 5 MBd and 10 MBd optical components. 10 MBd components also enable the use of Hard Clad Silica (HCS) cables, which allow longer connection distances thanks to their lower attenuation.

Note: The optical component type does not reflect the actual communication speed.

Delivery check

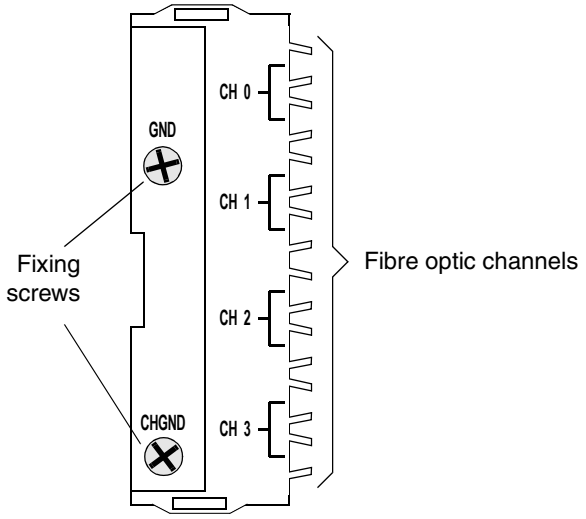
The option package contains:

- RDCO-0x module
- Two screws (M3×8)
- This document.

Compatibility

The RDCO-0x is compatible with the motor control and I/O board (RMIO) of the ACS 800.

Module layout



Installation

WARNING! All electrical installation and maintenance work on the drive should be carried out by qualified electricians only.

The drive and adjoining equipment must be properly earthed.

Do not work on a powered drive. Before installation, switch off the mains and other dangerous voltages (e.g. from external control circuits) to the drive. After switching off the mains, always allow the intermediate circuit capacitors 5 minutes to discharge before starting work on the frequency converter. It is a good practice to check (with a voltage indicating instrument) that the drive is in fact discharged before beginning work.

There may be dangerous voltages inside the drive from external control circuits even when the drive mains power is shut off. Exercise appropriate care when working on the unit. Neglecting these instructions may cause physical injury or death.

WARNING! The component boards of the drive contain integrated circuits that are extremely sensitive to electrostatic discharge (ESD). Wear an earthing wrist band when handling component boards. Do not touch the boards unnecessarily. Do not remove any board from its antistatic packaging until required.

WARNING! Handle the fibre optic cables with care. The maximum long term tensile load is 1 N; the minimum short term bend radius is 35 mm. Do not touch the ends of the fibres with bare hands as the fibre is extremely sensitive to dirt. Use rubber grommets at cable entries to protect the cables.

The RDCO-0x module is to be inserted into the position marked "DDCS" on the drive. On installation, the signal and power connection to the drive (RMIO board) is automatically made through a 20-pin connector.

The module is held in place with plastic retaining clips and two screws. The screws also provide the earthing of module, and interconnect the GND signals of the module and the RMIO board.

(continued overleaf)

Installation Procedure

1. Access the optional module slots on the drive. Whenever necessary, refer to the *Hardware Manual* of the drive for instructions on removing any covers.
2. Insert the module carefully into the slot marked “DDCS” on the RMIO board until the retaining clips lock the module into position.
3. Fasten the screws included in the package. Note that correct installation of the screws is essential for fulfilling the EMC requirements and for proper operation of the module.
4. Lead the fibre optic cables from the external device to the appropriate channel(s) of the RDCO. Inside the drive, route the cables as shown in its *Hardware Manual*. Make sure the cables are not kinked or laid against sharp edges. Observe colour coding so that transmitters are connected to receivers and vice versa. In case multiple devices are to be connected to one channel, they must be connected in a ring.

Technical data

Module types: RDCO-01(C), RDCO-02(C), RDCO-03(C)

Degree of protection: IP 20

Ambient conditions: The applicable ambient conditions specified for the drive in its *Hardware Manual* are in effect.

Connectors:

- 20-pin pinheader
- 4 transmitter/receiver connector pairs for fibre optic cable. Type: Agilent Technologies Versatile Link. Communication speed: 1, 2 or 4 Mbit/s

Operating voltage: +5 V DC ±10%, supplied by the RMIO board of the drive

Current consumption: 200 mA max.

Electromagnetic immunity: IEC 1000-4-2 (limits: industrial, second environment); IEC 1000-4-3; IEC 1000-4-4; IEC 1000-4-6

Electromagnetic emissions: EN 50081-2; CISPR 11

Dimensions (mm):

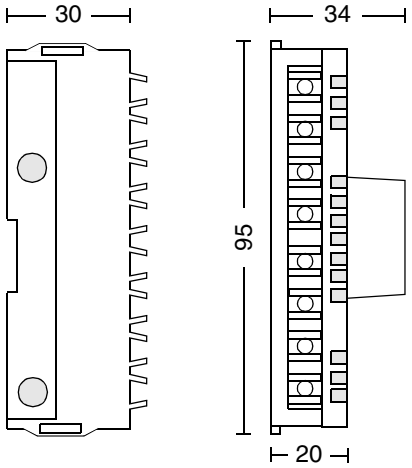


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