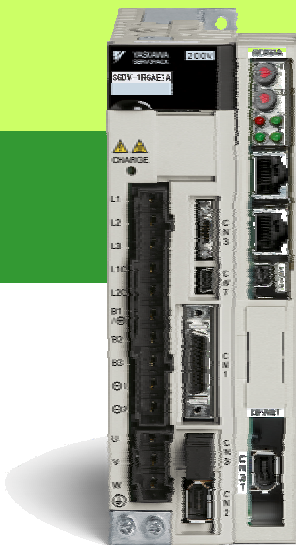# Sigma-5 EtherCAT

The EtherCAT network module offers a wide range of functions based on the IEC 61158 Type12, IEC 61800-7 CiA 402 Drive Profile

Sigma-5 EtherCAT

The SGDV-OCA01A - Network Module is an add-on board, which provides a real-time Ethernet interface for an EtherCAT communication network with the communication protocol CANopen (CoE = CAN over EtherCAT).

SGDV-OCA01A is compatible with Sigma-5 series command option attachable type amplifiers SGDV – xxx x E x A.

The CoE interface enables the user to achieve very high-speed synchronous distributed control with a high level of reliability. CANopen is a higher-layer protocol commonly used in the automation industry. The specification of this protocol is maintained and developed by the CiA organization (www.can-cia.org).

EtherCAT is an open real-time Ethernet network supported by the EtherCAT Technology Group (http://www.ethercat.org).

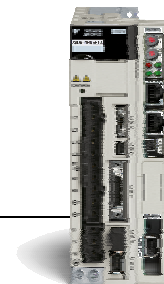## The Module supports the functions:

- ▶ Profile Position mode
- ▶ Homing mode
- ▶ Interpolated Position mode
- ▶ Profile Velocity mode
- ▶ Torque Profile mode
- ▶ Cyclic Sync Position mode
- ▶ Cyclic Sync Velocity mode
- ▶ Cyclic Sync Torque mode
- ▶ Communication rate of 100 Mbps
- ▶ 2 Standard RJ45 connectors
- ▶ 4 LEDs for status indication

Conformity:

- ▶ EtherCAT Technology Group Specifications
- ▶ CiA Specifications
- ▶ Safety Standard UL508
- ▶ Material Compliance UL94V-0
- ▶ RoHS Directive 2002/95/EC
- ▶ WEEE Directive 2002/96/EC
- ▶ Low Voltage Directive 73/23/EEC
- ▶ EMC Directive 89/336/EEC

Communication Specification

EtherCAT Communication	Applicable Communication Standards	IEC 61158 Type12, IEC 61800-7 CiA402 Drive Profile
	Physical Layer	100BASE-TX (IEEE802.3)
	Fieldbus Connection	CN11A (RJ45): EtherCAT Signal IN CN11B (RJ45): EtherCAT Signal OUT
	Cable	CAT5 STP 4 pair Note: Cables are automatically recognized by the AUTO MDIX function.
	SyncManager	SM0: Mailbox output, SM1: Mailbox input SM2: Process data outputs, SM3: Process data inputs
	FMMU	FMMU0: Mapped to the process data output (RxPDO) area. FMMU1: Mapped to the process data input (TxPDO) area. FMMU2: Mapped to the mailbox status
	EtherCAT Commands (Data Link Layer)	APRD, FPRD, BRD, LRD, APWR, FPWR, BWR, LWR, ARMW, FRMW Note: APRW, FPRW, BRW, LRW Commands are not supported.
	Process Data	Variable PDO mapping
	Mailbox (CoE)	Emergency Message, SDO Request, SDO Response, SDO information Note: TxPDO/RxPDO and Remote TxPDO/RxPDO are not supported.
	Distributed Clocks	Free-run, DC mode (Can be selected.) Supported DC cycle: 125 µs to 4ms (every 125-µs cycle)
	Slave Information IF	256 bytes (For reading only)
	LED Indicator	EtherCAT Link/Activity indicator (L/A) x 2 EtherCAT RUN indicator (RUN) x 1 EtherCAT ERR indicator (ERR) x 1
CiA402 Drive Profile		• Homing mode • Profile position mode • Interpolated position mode • Profile velocity mode • Profile torque mode • Cyclic synchronous position mode • Cyclic synchronous velocity mode • Cyclic synchronous torque mode • Touch probe function • Torque limit function

Compatible with Sigma-5 series amplifiers: SGDV – ☐☐☐ ☐E☐ A
Order Number EtherCAT Module: SGDV-OCA01A
Order Number Mounting Kit: SGDV-OZA01A

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