

## Objective

Explain the tools for communicating to a 590D controller with Modbus RTU using the KD-485 MODBUS-to-EI ASCII gateway card.

## Equipment

KD485-PROG

590D version XXX or later

Serial Comms card (P1 port)

Gateway software from [www.kksystems.com](http://www.kksystems.com)

## Procedure

Two versions of the gateway program (from KK Systems) are available:

**SYNCHRONOUS (NON-CACHED)** – each Modbus request results in a EI Bisynch request. Block reads are not supported.

**ASYNCHRONOUS (CACHED)** – the KD485 simultaneously communicates on both Modbus and EI Bisynch and maintains cached values of parameters in a table. Modbus block read is supported.

## CONFIGURING

Both program versions are configured in the same way using one of the following methods (see ebi.txt, ebicache.txt and readme.txt).

### Method 1 – MODMAP Tool

The MODMAP tool is used to combine a data table with the executable (ebi.hex or ebicache.hex) which is then downloaded into the KD485.

### Method 2 – Mapping Registers

The mapping registers 1xxx, 2xxx, 3xxx etc. for each parameter is done using a modbus master; for example MODSCAN32, and then saved in flash memory by writing to modbus register 46020 the value 0x55a5 (21925 decimal).

Following files are included in a 'zipped' file that is available from the Product Support Group via e-mail:

EBI.HEX - gateway executable (synchronous version)

EBI.TXT - description of above

EBICACHE.HEX - gateway executable (asynchronous version)

EBICACHE.TXT - description of above

MODMMAP.EXE - utility for creating mapping table

MODMAP.TXT - example input for above utility

README.TXT - description of above

590COMMS.XLS - spreadsheet of 590 parameters with format numbers

If you have questions, please call the Product Support Group at (704) 588-3246.

## KD485-PROG

The KD485-PROG allows any Eurotherm Drives controller equipped with communications capabilities to communicate with a Modbus RTU master. This includes the 590, 584S, 605, and 620 series controllers.

### COMMUNICATIONS

A MODBUS RTU-to-EI-BISYNCH program driver is loaded into this intelligent converter by the user. It allows one or more EI-BISYNCH slaves to appear as a single MODBUS slave. The MODBUS master controls the drives by writing to MODBUS registers within the converter.

### STANDARD FEATURES

- ?? DIN rail mounting
- ?? 7 – 25 VDC supply
- ?? Port 2 is fully isolated
- ?? RS422/485 two- or four-wire interface
- ?? Fully programmable

### CONVERTER TYPES

There are three types of KD485 converters. The following table lists the three types and the typical usage with Eurotherm Drives products.

Part Number	KD485 Port		Drive Comms Port	
	Port 1	Port 2	P1 Port	P3 Port
KD485-PROG	RS232	RS485/422	<input type="checkbox"/>	<input checked="" type="checkbox"/>
KD485-PROG-422-422	RS485/422	RS485/422	<input checked="" type="checkbox"/>	<input type="checkbox"/>
KD485-PROG-232-232*	RS232	RS232	<input type="checkbox"/>	<input type="checkbox"/>

\* This converter is not suitable for usage with standard MODBUS communications configurations.

NOTE. Eurotherm Drives recommends using the P1 Port option for communications due to its more standard terminals and isolation.

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