

MDCL-705i

Modbus Data Concentrator with Ethernet, RS-485 Serial Ports and Data Logger

Features

- Supports Modbus master/slave on the serial port and Modbus TCP slave on the Ethernet interface
- Supports up to 8 simultaneous Modbus TCP connections at one time
- Up to 9600 registers are available for each type of Modbus register
- Modbus polling commands for up to 250 definitions
- Serial port with 2.5 kV isolation protection (for COM3, COM4 and COM5)
- Embedded web server for easy configuration and commissioning using a web browser
- Quick and easy configuration with simple CSV files
- Records acquired data to a microSD card and timestamps them with a real-time clock for subsequent analysis
- Easily set scaling Modbus data to engineering units for recording

Introduction

The Modbus Data Concentrator is the ideal product for IIoT system integrators. The MDCL-705i is used to collect and store data from multiple Modbus slave devices over the serial communication interface and make the data available to back-end management system via Ethernet communication. In this way, conventional devices can be attached to a modern control system and through the Modbus TCP protocol easily communicates with most SCADA / HMI system and PLCs. Thus the management system can poll the MDCL-705i for the data from several Modbus devices at once; making the process much more efficient.

The MDCL-705i can help you build a cost-effective data acquisition solution for reading real-time data from meters, sensors and more. The ability to integrate with SCADA systems and other industrial devices, and the reliable real-time data collection in combination with the data logger make MDCL-705i one of the most cost-effective products of IIoT.

Modbus Data Concentrator

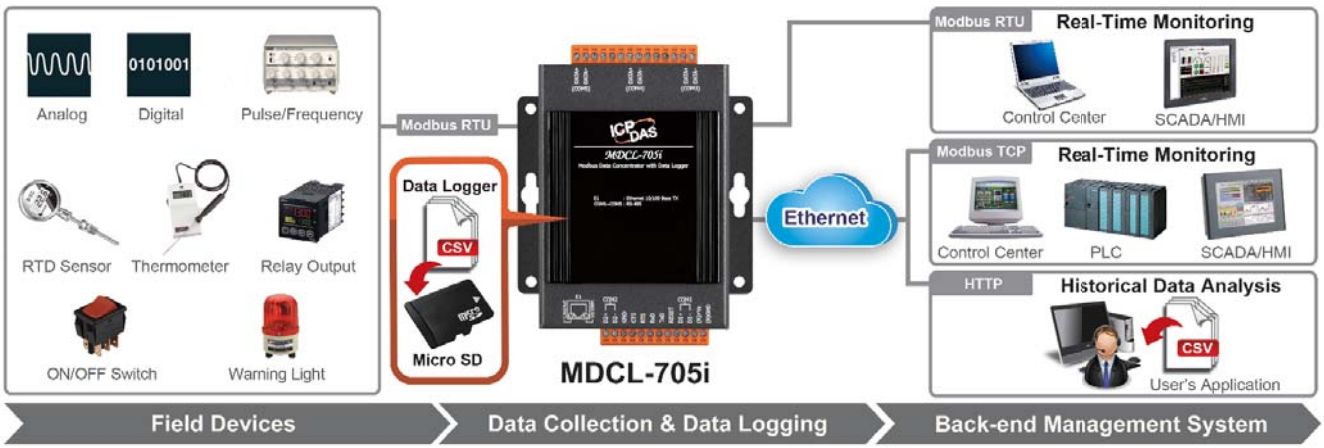
The MDCL-705i collects data using the Modbus RTU protocol to poll the data out of the device. For each data you want to retrieve, just define the Modbus RTU commands in a CSV file and import it via the web interface. The MDCL-705i can perform up to 250 polling definitions. Its internal shared memory has four tables (Coils, Discrete Input, Input Registers and Holding Registers) to store the polled data. Each table can store up to 9600 registers. It allows up to 8 simultaneous Modbus TCP connections to get the polled data at one time.

Stand-alone data logging capability

The Built-in data logging feature provides the ability to log various data from its internal Modbus registers directly into a microSD card that can be later retrieved using HTTP. The log file is written as a CSV file format that can be viewed with commercial application such as Microsoft® Excel. All log files can be downloaded to a computer system for subsequent analysis and processing.

The MDCL-705i stores acquired data into its microSD card to prevent data loss in the event of a network outage. Each record is marked with a timestamp (based on the MDCL-705i's internal real-time clock). This allows data to be logged offline for months at a time.

Application



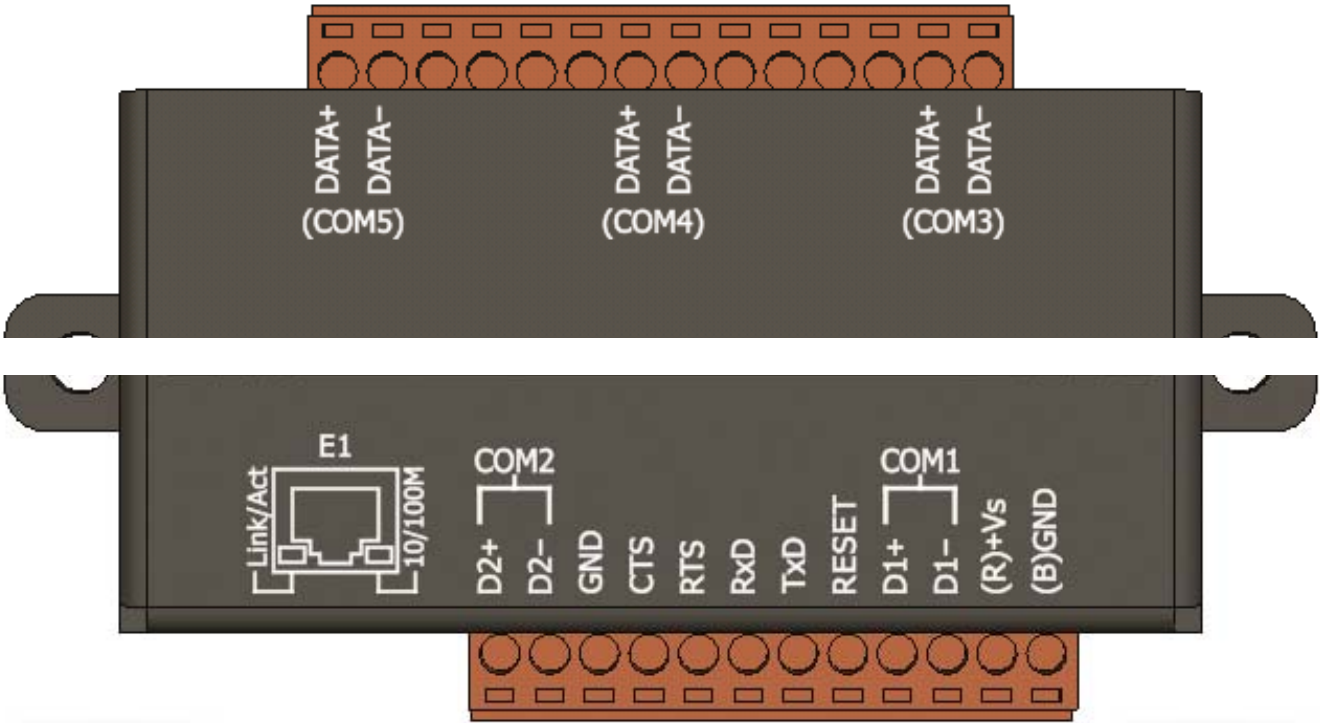
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System Specifications

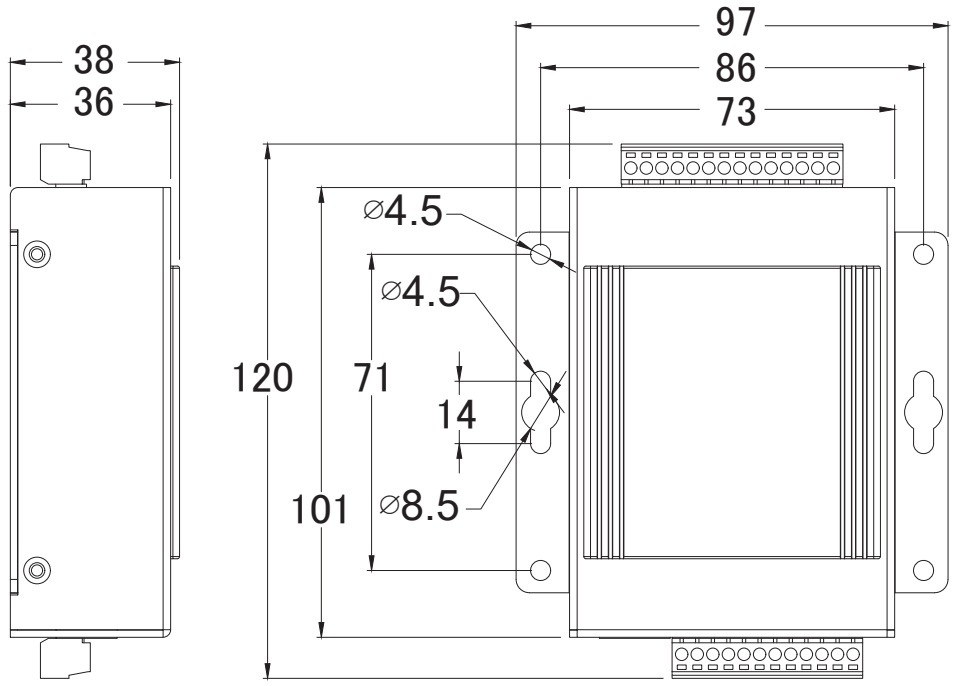
Model Name	MDCL-705i
Ethernet	
Ports	10/100 Base-TX, Auto MDI/MDIX
Protocol	Modbus/TCP slave, HTTP
Socket Connections	8 Modbus/TCP
Data Logger	
Storage Media	microSD Card (Up to 32 GB)
File Format	CSV
Time Interval	5 sec, 10 sec, 30 sec, 1 min, 5 min, 10 min, 15 min, 30 min, 1 hr, 6 hr
Max. Records	120 points per record
Data Type	Boolean, 16-bit Integer, 32-bit Integer and 32-bit Floating
Max. Recording Period per Recording File	1 hr, 2 hr, 6 hr, 12 hr, 24 hr
File Manager Interface	Built-in web server
COM port	
Ports	2 x 2-wire RS-485 (non-isolated) 3 x 2-wire RS-485 (2.5 kV isolation protection)
Baud Rate	1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 115200 bps
Data Format	N81, E81, O81
Protocol	Modbus RTU Master/Modbus RTU Slave
Max. Connection	32 slaves for each RS-485 port
Polling Definition	250 definitions for all RS-485 ports
Shared Memory	9600 registers for each of AI, AO, DI and DO data
Display	
Type	5-Digit 7 Segment LED Display (display system information)
LED Indicators	
Status	1 x System, to (display heartbeat)
Mechanical	
Casing	Metal
Dimensions (mm)	97 x 120 x 42 (W x L x H)
Installation	DIN-Rail or Wall Mounting
Power	
Input Range	+10 ~ +48 VDC
Consumption	2 W
Environment	
Operating Temperature	-25 ~ +75 °C
Storage Temperature	-30 ~ +80 °C
Humidity	10 ~ 90 % RH, Non-condensing

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Pin Assignments



Dimensions (Units: mm)



Left Side View | Front View

Ordering Information

MDC-711 CR	Modbus data concentrator with 1 x Ethernet, 1 x RS-232 and 1 x RS-485 (RoHS)
MDC-714 CR	Modbus data concentrator with 1 x Ethernet, 1 x RS-232 and 4 x RS-485 (RoHS)
MDC-714i CR	Modbus data concentrator with 1 x Ethernet, 1 x RS-232 and 4 x RS-485 comprised of non-isolated and isolated ports (RoHS)
MDC-771 CR	Modbus data concentrator with 1 x Ethernet, 7 x RS-232 and 1 x RS-485 (RoHS)
MDCL-705i CR	Modbus data concentrator with 1 x Ethernet, 1 x RS-232, 4 x RS-485 and data logger (RoHS)

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