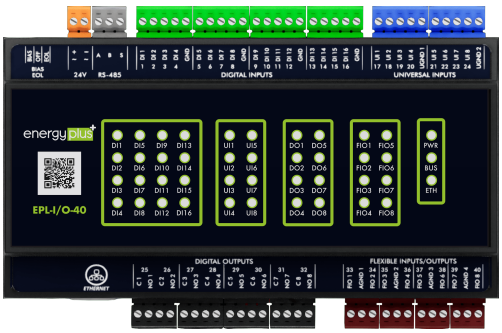
EPL-I/O-40: Datasheet

DS-EPL-IO-40-EN | Rev. 1.0 | October 2026 | Firmware V2.0.2

Ethernet-based remote I/O and multi-protocol field interface module

EPL-I/O-40 is an Ethernet-based remote I/O and field interface module for projects that require fixed I/O behavior and direct fieldbus integration. With a fixed Modbus register map and BACnet object model, it connects to the supervisory system out of the box.



Key Features

- 40 physical points: 16 DI (DI1..DI4 counter), 8 UI, 8 DO relay, 8 FIO
- Modbus RTU/TCP slave or BACnet/IP / BACnet MS/TP
- Modbus TCP ↔ RTU gateway and BACnet IP ↔ MS/TP router with an optional license
- Fixed register map and BACnet object model
- Per-channel output defaults on communication loss
- Local web interface, mobile commissioning over BLE, OTA update
- DIN rail mounting, 24 Vac/Vdc supply

Typical Applications

- I/O expansion in AHU, pump, boiler, chiller and auxiliary plant cabinets
- Adding dry contact, analog sensor and universal points to existing BMS systems
- Driving VAV dampers, analog valves, relays and contactor outputs
- Integration through a fixed Modbus/BACnet map in retrofit projects

I/O Structure

Channel	Count	Supported modes
DI	16	DIRECT, REVERSE; COUNTER only on DI1..DI4 (total and window-based pulse counting)
DO	8	Relay output, DIRECT or REVERSE
UI	8	OFF, 0-10V, 2-10V, 0-20mA, 4-20mA, DI DIRECT, DI REVERSE, seven NTC types, PT1000, NI1000 DIN, NI1000 LG, RESISTOR
FIO	8	OFF, 0-10V, 2-10V, DO DIRECT, DO REVERSE, DI DIRECT, DI REVERSE

In UI and FIO analog modes, `min`, `max` and `offset` are configurable. In 2-10V and 4-20mA modes an out-of-range fault is reported; in sensor modes open-circuit and short-circuit faults are reported. Analog values are carried in Modbus as `x10` fixed point; UI values can also be read as `float32`.

Technical Specifications

Specification	Value
Local I/O capacity	16 DI (DI1..DI4 counter inputs), 8 UI, 8 DO relay outputs, 8 FIO (flexible input/output)
UI measurement resolution	22 bit
Communication interfaces	1 × Ethernet RJ45 (10/100 Mbit/s), 1 × RS-485, Bluetooth LE (service and commissioning)
BACnet vendor ID	1600 (registered with ASHRAE)
Supply voltage	24 Vac ±20% or 21..30 Vdc
Nominal power consumption	5 VA

Specification	Value
Supply class	Class 2
Protection and temperature class	IP20 enclosure protection, T50 operating class
Operating environment	0..50 °C, 5..95% relative humidity (non-condensing)
Storage environment	-20..70 °C, 5..95% relative humidity (non-condensing)
DO relay output rating	5 A @ 277 Vac or 3 A @ 30 Vdc, resistive load
FIO analog output range	0..10 V or 2..10 V selectable; maximum load current 20 mA per channel
Mounting	DIN rail (EN 60715, 35 mm), cabinet mounting
Enclosure dimensions (width × height × depth)	175 mm × 112 mm × 60 mm

Communication

Only one field protocol runs at a time: Modbus or BACnet.

Group	Default	Configurable fields
Modbus	RS-485 RTU slave, 9600 8N1, slave ID 1; Modbus TCP port 502	mode, slave ID, baud rate, parity, data/stop bits, serial timeout, TCP ports and timeouts, gateway target
Modbus gateway	gateway port 504; client target 192.168.1.50:1502	optional license, Level 1
BACnet/IP	UDP 47808, network 1, device ID automatic	type, device ID, UDP port and IP network number
BACnet MS/TP	MAC 0, 38400, max master 127, network 2	MS/TP MAC, baud rate, max master and MS/TP network number
BACnet router	routing enabled; IP and MS/TP run simultaneously	optional license, Level 2; the IP and MS/TP network numbers must be different

Basic use of Modbus RTU/TCP and BACnet/IP and MS/TP requires no license. Gateway or router cannot be selected without a license; if the license is removed while the saved setting is gateway or router, the device runs as a Modbus RTU slave or BACnet/IP. When the BACnet device ID is 0, the device instance is generated as 1600000 + MS/TP MAC.

Modbus area	Register	Function
DI state / mode	100..135	digital states and mode selection
DO state / mode / default	300..407	digital command, inversion and communication-loss defaults
UI value / mode / scalar	500..587	measurement and engineering parameters
FIO value / mode / scalar	700..807	analog/digital command and channel settings
CommErr / bitmask / counter / fault	999..1058	communication-loss time, aggregate status fields, counters and UI fault codes
UI float32	1100..1115	UI values, 2 registers, low word first

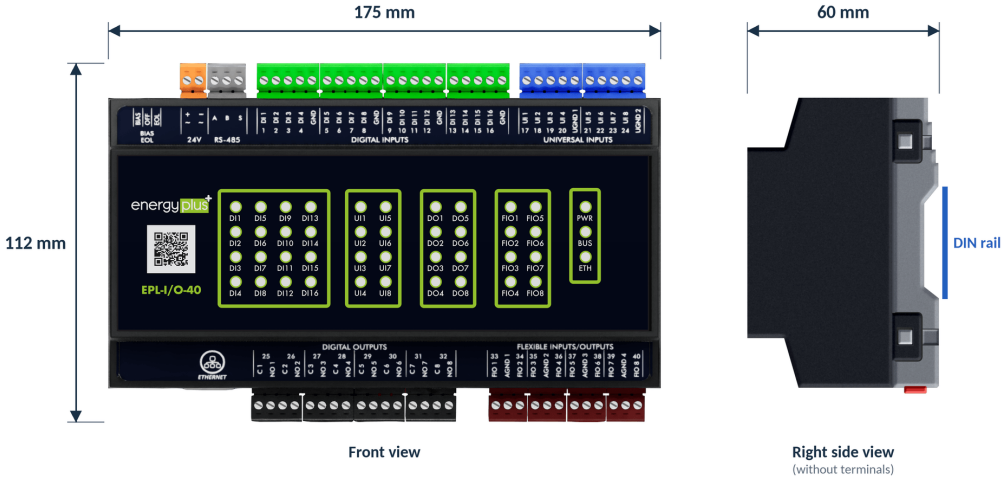
Supported Modbus functions: FC01, FC03, FC05, FC06, FC15 and FC16.

BACnet area	Instance	Function
DI	BI 0..15	digital input states
CommErr	AV 999, AV 1000	communication-loss timeout and elapsed time, seconds
Counter	PIV 1011..1046, BV 1017..1047	DI1..DI4 pulse counters and reset
UI analog	AI 800..807	instantaneous analog measurement
UI binary	BI 900..907	UI digital mode state
Mode and scalar fields	MSV/BV/AV 10000..11107	mode selection, scaling and default values
DO command	BV 11200..11207	digital output command
FIO value	AV 11300..11307	analog command/value
FIO digital value	BV 11400..11407	digital command/state

The full register and object list is given in the Modbus and BACnet Reference Appendix.

Network and Service

Item	Value
Ethernet	IPv4; static IP or DHCP, mDNS (epl-io-40.local)
Factory network setting	Static 192.168.1.160/24, gateway 192.168.1.1, DNS automatic
Service interfaces	Local web interface, BLE, OTA software update
Access	Password-protected local web session; first-access credentials are supplied with the device



Overall dimensions (W x H x D): 175 x 112 x 60 mm, plugged terminals included. DIN rail, in-cabinet mounting; IP20.

Figure 1. Mechanical dimensions

Ordering Information

Model	Order code	Description
EPL-I/O-40	EPL-I/O-40	Remote I/O and field interface module; 16 DI, 8 UI, 8 DO, 8 FIO; Modbus or BACnet; Ethernet, RS-485, BLE; 24 Vac / 21..30 Vdc; DIN rail

Document Package

Datasheet, User Manual, Modbus and BACnet Reference Appendix, Quick Start Guide, Wiring and Mounting Reference, Product Brochure.

Company Information

Item	Information
Brand	EnergyPlus
Legal name	EnergyPlus Teknoloji İmalat İthalat ve İhracat Sanayi A.Ş.
Product website	www.energyplusstore.com

The information in this document is subject to change without notice. EnergyPlus reserves the right to change technical specifications as part of ongoing product development. Refer to the product user manual for installation, wiring and service details. Document: DS-EPL-IO-40-EN, revision 1.0, October 2026.