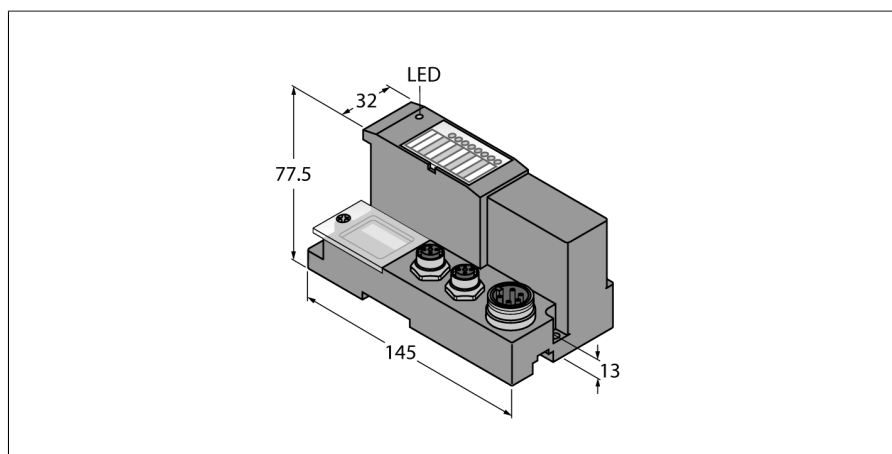


CODESYS 3 Programmable Gateway for the BL67 I/O System

Multiprotocol Ethernet Gateway for PROFINET, EtherNet/IP and Modbus TCP

BL67-PG-EN-V3



Type	BL67-PG-EN-V3
ID	6827394
Supply voltage	24 VDC
System power supply	24 VDC / 5 VDC
Field supply	24 VDC
Admissible range	18...30 VDC
Nominal current from module bus	≤ 100 mA
Max. sensor supply I_{sens}	4 A short circuit fuse
max. load current I_L	10 A
Max. field supply current	10 A
Max. system supply current	1.2 A
Voltage supply connection	7/8", 5-pin
Fieldbus transmission rate	10/100 Mbps, Full/Half Duplex, Auto Negotiation, Auto Crossing
Fieldbus addressing	Rotary switch, PGM, DHCP
Fieldbus connection technology	2 × M12, 4-pin, D-coded
PLC data	
Programming	CODESYS V3
Released for CODESYS version	V 3.5.14.2
Programming languages	IEC 61131-3 (IL, LD, FBD, SFC, ST)
Application tasks	5
Programming interface	Ethernet, USB
Processor	ARM, 32 Bit
Cycle time	< 1 ms for 1000 IL commands (without I/O cycle)
Real time clock	yes
Program memory	1024 kByte
Data memory	512 kByte
Input data	4 kByte
Output data	4 kByte
Non-volatile memory	16 kByte
Web server	192.168.1.254 (default)
Service interface	Ethernet, mini USB

- CODESYS V3 PLC Runtime
- CODESYS OPC UA server/client
- IIoT gateway for Turck Cloud
- PROFINET device
- EtherNet/IP device
- Modbus TCP master/slave
- Protection class IP67
- LEDs for display of PLC status, supply voltage, group and bus faults
- 2 × M12 Ethernet, 4-pin, D-coded
- Switched or dual MAC mode
- 10 Mbps/100 Mbps
- 7/8" male connector for power supply, 5-pin

Functional principle

The programmable BL67 gateways can be used as autonomous PLCs or as decentral PLCs in a network interconnection for a fast preprocessing of signals.

BL67 gateways are the head component of a BL67 station. The BL67 electronic modules communicate over the internal module bus with the gateway and can be configured independently of the bus system.

Modbus TCP	
Addressing	Static IP, DHCP
Supported function codes	FC1, FC2, FC3, FC4, FC5, FC6, FC15, FC16, FC23
Input Data Size	max. 1024 register
Input register start address	0 (0x0000 hex)
Output Data Size	max. 1024 register
Output register start address	0 (0x0000 hex)
Ethernet/IP	
Addressing	acc. to EtherNet/IP specification
Device Level Ring (DLR)	not supported
Input Data Size	248 INT
Output Data Size	248 INT
PROFINET	
Addressing	DCP
Conformance class	B (RT)
MinCycleTime	1 ms
Diagnostics	acc. to PROFINET alarm handling
Topology detection	supported
Automatic addressing	supported
Media Redundancy Protocol (MRP)	not supported
Input Data Size	max. 512 BYTE
Output Data Size	max. 512 BYTE
Dimensions (W x L x H)	
Approvals	CE, cULus
Ambient temperature	-25...+70 °C
Temperature derating	
> 55 °C Circulating air (Ventilation)	Derating: Max. power consumption = 5 A
> 55 °C Steady ambient air	Derating: Max. power consumption = 5 A
Storage temperature	-40...+85 °C
Relative humidity	15...95 % (internal), level RH-2, no condensation (when stored at 45 °C)
Vibration test	Acc. to EN 61131
- up to 5 g (at 10 to 150 Hz)	for mounting on DIN rail no drilling according to EN 60715, with end bracket
- up to 20 g (at 10 up to 150 Hz)	for mounting on base plate or machinery Therefore every second module has to be mounted with two screws each.
Shock test	Acc. to IEC 60068-2-27
Drop and topple	acc. to IEC 68-2-31 and free fall to IEC 68-2-32
Electromagnetic compatibility	Acc. to IEC 61131-2
Protection class	IP67
MTTF	116 years acc. to SN 29500 (Ed. 99) 20 °C
DIN rail mounting	yes, Attention: Offset
Direct mounting	Two mounting holes, Ø 6 mm
Included in delivery	
	1 x end plate BL67

	Ethernet The M12-D coded Ethernet ports are used as interface for programming, configuration and fieldbus communication. The gateway can be operated as a slave at PLCs or PC based systems with PROFINET, EtherNet/IP™ or Modbus TCP master as well as with a driver software. Ethernet Cable (Example): M12 - M12: RSSD-RSSD-441-2M/S2174 (ident no. 6914218) M12 – RJ45: RSSD-RSSD-441-2M/S2174 (ident no. 6915781)	Pin Assignment 1 = YE (TX +) 2 = WH (RX +) 3 = OG (TX -) 4 = BU (RX -)
	Power Supply Double-tuned power supply of the BL67 system. System power supply V_i V_i is for the internal system supply at the backplane bus ($V_{MB}(5V)$) and for the 4A short-circuit limited sensor supply (V_{sens}). Load voltage V_o V_o for output supply, limited to max. 10A. Power Cable (Example): 7/8" – 7/8": RKM52-2-RSM52 (Ident no. 6914150) 7/8" – open: RKM52-2M (Ident no. 6604711)	Pin Assignment 1 = GND 2 = GND 3 = PE 4 = V_i 5 = V_o Power supply System supply VMB (5 V) IMB (5 V) Field supply VMB (24 V) IMB (24 V) 4 A I_{sens} I_o V_i V_o
	USB Host Port Storage media can be connected to the USB host port, please observe the instructions in the user manual.	Pin Assignment 1 = 5 VDC 2 = D - 3 = D + 4 = GND
	USB Device Port The USB device port can be used as a programming and service interface.	Pin Assignment 1 = 5 VDC 2 = D - 3 = D + 4 = n.c. 5 = GND

LED display

LED	Color	Status	Meaning
IO		OFF	No or too low power supply
	RED	ON	Hardware failure, the firmware is not running
	RED	FLASHING (1Hz)	Incorrect module configuration, actual module configuration does not match the projected configuration
	RED	FLASHING (4 Hz)	No communication to the local I/Os (backplane bus)
	RED/GREEN	FLASHING	Actual module configuration differs from the configured, but can be run
	GREEN	ON	Module bus without errors, actual station configuration matches the configured
	GREEN	FLASHING (1Hz)	DTM force mode active
GW		OFF	No or too low power supply
	RED	FLASHING (1Hz)	Wink command
	GREEN	ON	Gateway without error
BUS		OFF	No or too low power supply
	RED	ON	IP-address conflict or Restore Mode / F_Reset Mode
	RED/GREEN	FLASHING	Autonegotiation and/or DHCP/ BootP waiting for assignment of IP address
	GREEN	ON	Connection established to PLC
	GREEN	FLASHING	Ready
ERR		OFF	No diagnosis
	RED	ON	Diagnosis of the gateway or an I/O module
RUN		OFF	No or too low power supply
	RED	ON	PLC program stopped
	RED	FLASHING	No PLC program available
	GREEN	ON	PLC program running
APPL	RED/GREEN		This LED is controlled user-defined from the CODESYS program
LNK1/LNK2		OFF	No Ethernet link
	YELLOW	ON	Ethernet Link (10 Mbps)
	YELLOW	FLASHING	Ethernet communication (10 Mbps)
	GREEN	ON	Ethernet Link (100 Mbps)
	GREEN	FLASHING	Ethernet communication (100 Mbps)
VI/VO		OFF	No or too low power supply
	GREEN	ON	VI and VO are applied
	GREEN	FLASHING (1Hz)	VI voltage too low
	GREEN	FLASHING (4Hz)	VO voltage too low
	RED	ON	Overcurrent Isens

Function accessories

Type code	Ident no.		Dimension drawing
BL67-LABEL-DIN-A4-50STCK.	6827196	Labels for electronic modules and gateways, DIN A5 sheets, perforated, laser printing, 50 pcs.	