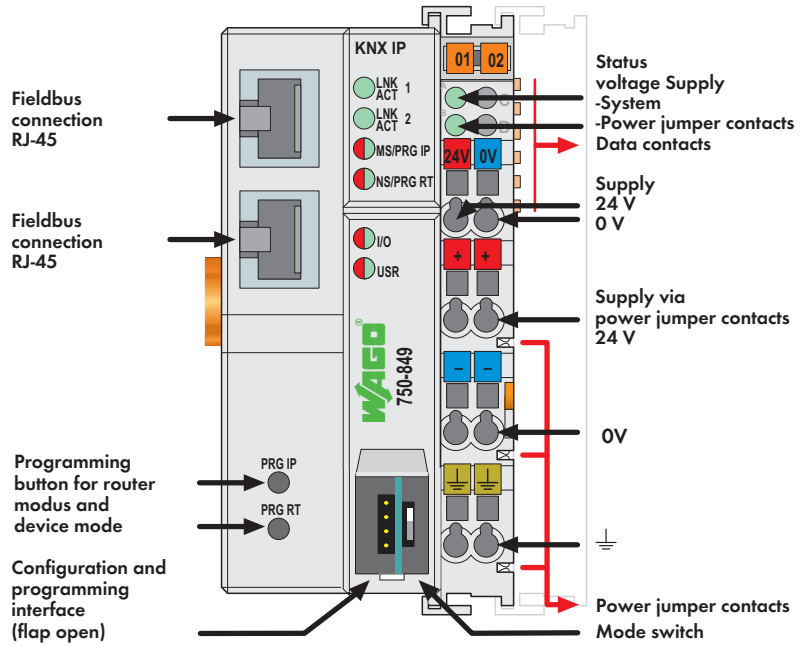


# PLC - KNX IP Programmable Fieldbus Controller

32-bit CPU, multitasking



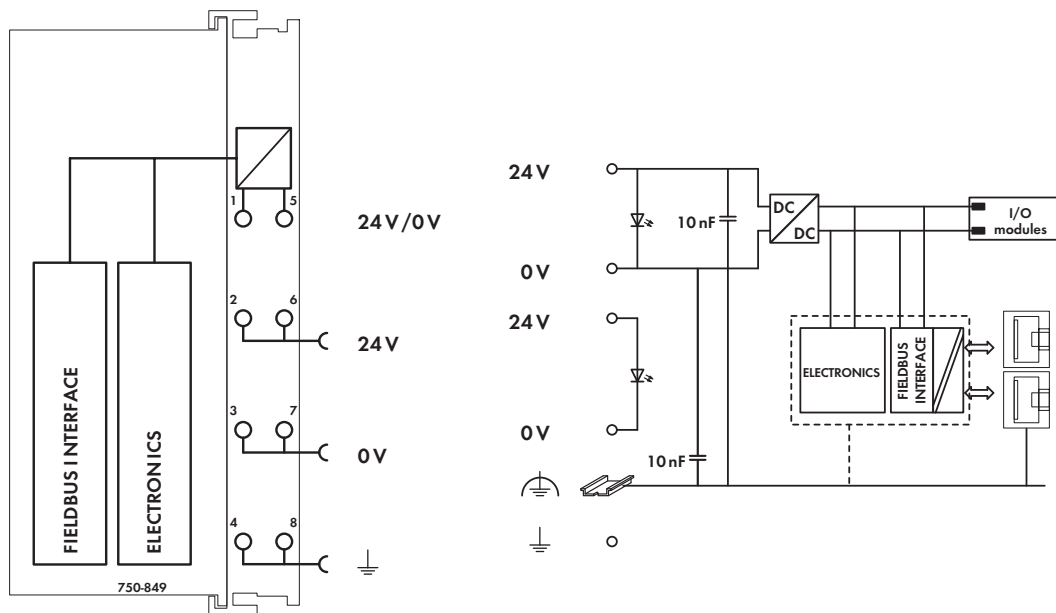
This controller can contain up to two logical KNX devices simultaneously.

- In conjunction with the WAGO-I/O-SYSTEM, the KNX IP PLC is used as an application controller within KNX IP networks. The PLC supports all digital, analog and specialty modules found within the 750/753 Series. The controller is capable of 10/100 Mbit/s data rates and is programmable in accordance with IEC 61131-3. KNX objects of any type (EIS/DPT) can be created using the programming tool. Libraries including ready-made function blocks are readily available on the WAGO Web site for programming. The controller supports a maximum of 253 communication objects, 254 group addresses and 254 associations. Supported DPTs: All (acc. to KNX standard 03\_07\_02 Datapoint Types V1.0).
- Combined with the KNX/EIB/TP1 module, the 750-849 KNX IP PLC can be operated as a router on an IP backbone (ETHERNET). No IEC application is required for router functionality.

Both devices are commissioned and configured in ETS3/4 using the WAGO product database. The software includes a plug-in that automatically installs and opens for configuration. The KNX IP PLC features an integrated 2-port 10/100 Mbit/s switch and allows easy creation of a line structure without requiring additional network components. The maximum number of controllers that can be wired in series is 20. An internal server is available for Web-based applications. The controller provides 512 KB program memory, 256 KB data memory and 24 KB retain memory. It has a battery-backed RTC and 32-bit multitasking CPU. The controller offers many different application protocols for control tasks (MODBUS, KNXnet/IP) or for system management and diagnostics (HTTP, BootP, DHCP, DNS, AutoIP, SNTP, FTP, SNMP and SMTP). The number of KNX/EIB/TP1 modules (750-646) that are supported by the KNX IP PLC does not depend on the application.

Description	Item No.	Pack. Unit
<b>KNX IP Controller</b>	<b>750-849</b>	<b>1</b>
<b>Accessories</b>		
WAGO ETS3/4 plug-in	see page 93	
<b>WAGO-I/O-PRO V2.3, RS-232 kit</b>	<b>759-333</b>	<b>1</b>
<b>Miniature WSB Quick marking system</b>		
plain	<b>248-501</b>	<b>5</b>
with marking	see pages 352 ... 353	
<b>Approvals</b>		
	Also see "Approvals Overview" in Section 1	
KNX certified	IP controller: 61/8316/08; IP router: 61/8317/08	
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		

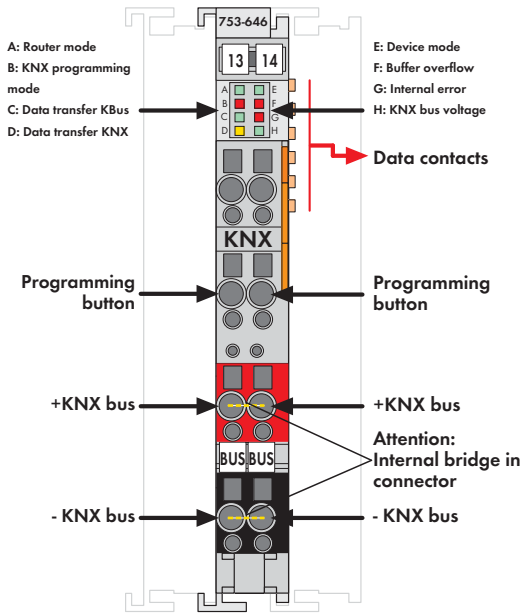
System Data	
No. of controllers	limited by network topology
Transmission medium	S-UTP 100 Ω Cat 5
Max. length of fieldbus segment	100 m limited by IEEE 802.3
Max. length of network	≤ 2000 m; max. 20 controllers in series
Baud rate	10/100 Mbit/s
Buscoupler connection	2 x RJ-45 (linked via 2-port switch)
Protocols	KNXnet/IP, MODBUS/TCP (UDP), HTTP, BootP, DHCP, DNS, AutoIP, SNTP, FTP, SNMP V3, SMTP
Programming	WAGO-I/O-PRO V2.3
IEC 61131-3	IL, LD, FBD (CFC), ST, FC
KNX-specific	
KNX/TP1 bus specification	1.0
Commissioning (KNX side)	with ETS3/4 plug-in, 2 programming buttons
<b>Device mode:</b>	
Number of communication objects	253
Number of group addresses	254
Number of associations	254
Supported DPTs	All ( *acc. to KNX Specification 03_07_02 Data Point Types V 1.0)
Max. number of logical KNX devices, simultaneous	2; 1. device, 2. router (with 1. KNX/EIB/TP1 module)



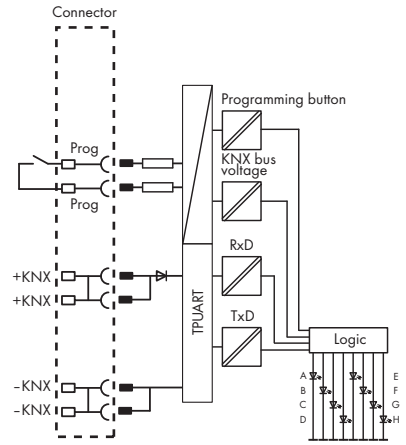
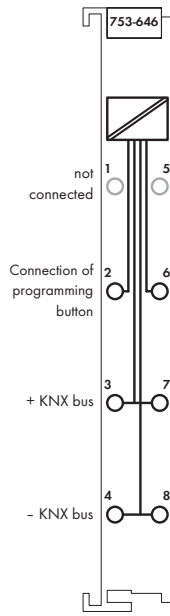
Technical Data	
Number of I/O modules	64
with bus extension	250
Configuration	via PC
Program memory	512 Kbytes
Data memory	256 Kbytes
Non-volatile memory (retain)	24 Kbytes (16 Kbytes retain, 8 Kbytes flag)
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC
<b>Fieldbus (Modbus/TCP):</b>	
Max. input process image	2 Kbytes
Max. output process image	2 Kbytes
Max. input variables	512 bytes
Max. output variables	512 bytes

General Specifications	
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	190 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: <b>CE</b> - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: <b>CE</b> - emission of interference	acc. to EN 61000-6-3 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
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- emission of interference	acc. to Germanischer Lloyd (2003)

# 1 KNX/EIB/TP1 Module









Delivered without miniature WSB markers



The KNX/EIB/TP1 I/O module 753-646 serves to connect a KNX/EIB/TP1 network. The module supports two different functions:

**1. Device mode:** With this module, all programmable controllers (\* 1) that are relevant for building automation can be connected to a KNX/TP1 network. In a KNX network, the module appears as a standard KNX device and is linked using the ETS 3 Professional commissioning tool. The module supports a maximum of 253 communication objects with any DPTs, 254 group addresses and 254 associations. The application is programmed using WAGO-I/O-PRO CAA. An ETS3 plug-in, which is included in the WAGO product database, is required so that the data from the application program can be allocated to the group addresses.

\* 1: See [www.wago.com](http://www.wago.com): Documentation WAGO-I/O-SYSTEM 753 Specialty Modules KNX/EIB/TP1 Module - Device Mode  
**2. Router mode:** When used together with the KNX IP 750-849 controller, with the first KNX/EIB/TP1 module 753-646 connected, this module can be used as a KNXnet/IP router. The module is switched to router mode automatically. An application program is not required for operation in router mode. Additional modules that are connected to a KNX IP controller are addressed in the device mode by the application. The 753 Series connector with internally bridged contacts (3/7 and 4/8) is part of the delivery. Both an external KNX voltage supply and ETS 3.0 Professional are required to operate the KNX/EIB/TP1 I/O module.

Description	Item No.	Pack. Unit
KNX/EIB/TP1 Module	753-646	1
Accessories	Item No.	Pack. Unit
<b>Miniature WSB Quick marking system</b>		
 plain	248-501	5
with marking	see pages 352 ... 353	
WAGO ETS3 plug-in (included in WAGO ETS3 product database) Download: <a href="http://www.wago.com">www.wago.com</a> : Beratung und Support → Downloads → Gebäudeautomation → ETS3 → Produktdatenbank		
<b>Approvals</b> Also see "Approvals Overview" in Section 1		
KNX certified		
Conformity marking		
Shipbuilding	ABS, DNV, GL*, KR	
	* Shield connection of the bus line is required for GL-complaint installation.	
	UL 508	
Technical Data		
Wire connection	CAGE CLAMP®	
Cross sections	0.08 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / AWG 28 ... 14	
Stripped lengths	9 ... 10 mm / 0.37 in	
Width	12 mm	
Weight	55 g	
EMC:  - immunity to interference	acc. to EN 61000-6-2 (2005)	
EMC:  - emission of interference	acc. to EN 61000-6-3 (2007)	
EMC: marine app. - immunity to interference	acc. to Germanischer Lloyd (2003)	
EMC: marine app. - emission of interference	acc. to Germanischer Lloyd (2003)	

Technical Data	
KNX/TP1 bus specification	1.0
Voltage supply (KNX)	via KNX power supply unit
Current consumption (KNX)	5 mA
Baud rate (KNX)	9.6 kbaud
Programming	using WAGO-I/O-PRO CAA (device mode)
Commissioning (KNX side)	with ETS3 plug-in; programming button-bridge 2/6
Diagnostic information	via FbKNX_Master_646 function block (device mode)
Fault behavior	via FbKNX_Master_646 function block (device mode)
Voltage supply (internal)	via system voltage DC/DC
Current consumption (internal)	max. 25 mA
Isolation	2.5 kV rms
Internal bit width	24 bytes
Programming button	Bridge 2/6
<b>Device mode:</b>	
Number of communication objects	253
Number of group addresses	254
Number of associations	254
Supported DPTs	All ( *acc. to KNX Specification 03_07_02 Data Point Types V 1.0)
<b>Router mode:</b>	
Can be used as	
- Line coupler	yes
- Area coupler	yes
- KNX interface	yes