Pluto Gateway

| Profibus DP |
| DeviceNet |
| CANopen |
| Ethernet |

GATE-D1
PLUTO BUS
K
PR
MNS
DeviceNet

Inspired by Industry

The key difference between Pluto and conventional safety PLCs is that there is no "supervisor-subordinate" relationship between the control units connected to the safe bus. All Plutos are "supervisor" units and can see each others' inputs and outputs. Using this concept, each Pluto can make decisions about its own immediate safety environment enabling simple communication and easy alterations of the safety system. With the use of Pluto Gateway, information from a Pluto network can be transferred to other bus systems thereby creating even larger systems. Gateway units are readily available for a number of different bus-systems — i.e. Profibus, CanOpen, DeviceNet, Ethernet.
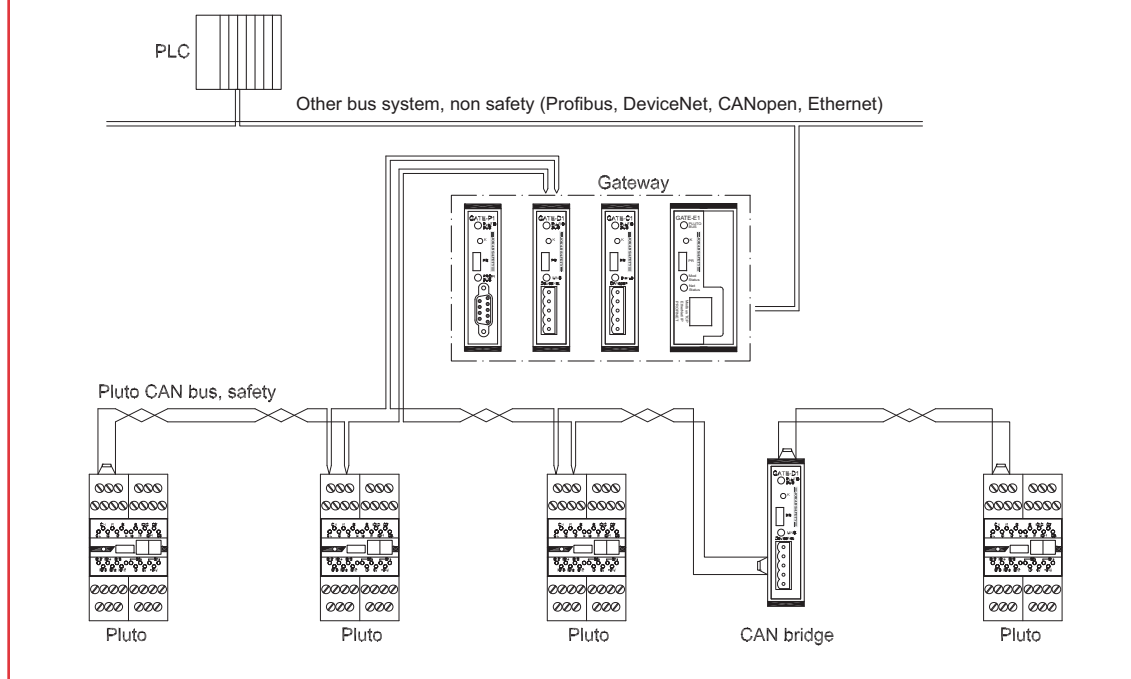
Unique Design

- The Pluto Gateway is a compact unit, mounted on a DIN rail, that can be connected anywhere in a Pluto databus
- Unit has a common interface with Pluto (i.e. the same cabling) and the Pluto Manager PC program can be used for servicing
- All settings are made via DIP switches — programming tools are not required to put the Gateway itself into operation
- Ready-made function blocks for programming Pluto, which — via a Pluto Gateway — send and receive data from the supervisory system

- GATE-D1 and GATE-C1 types, which use a CAN databus on both sides, can also be used as CAN bridges where it is required to split a Pluto databus into several sections— useful when long databus cables are needed
- Built-in filter function makes it possible to block data that is not required for use on the other side of the bridge, reducing the databus loading in the other sections and thereby permitting longer databus cables

VISION + VERSATILITY = VALUE

Pluto Gateway Block Schematic Diagram

PLC

Other bus system, non safety (Profibus, DeviceNet, CANopen, Ethernet)

Gateway

GATE-E1

Pluto CAN bus, safety

Pluto   Pluto   Pluto   CAN bridge   Pluto

Pluto Gateway for Four Different Bus Systems

VISION + VERSATILITY = VALUE

Profibus DP

Data from Pluto

Via Profibus, a supervisory PLC system can have access to the I/O and other variables in a Pluto Safety PLC. Global I/Os in a Pluto Safety PLC are accessible via Profibus modules in the Gateway, one module for each Pluto unit. Local data in Pluto units can be read by a "local data" module together with the PLC codes in the supervisory system.
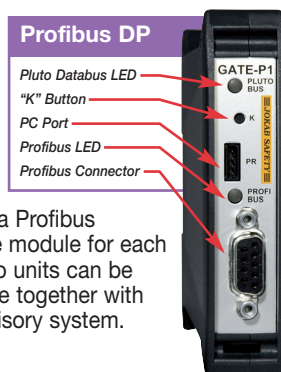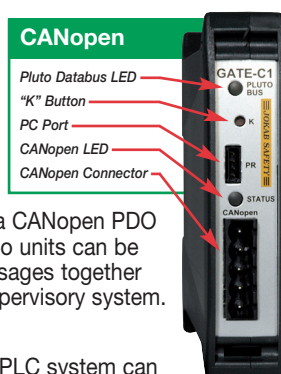
Data to Pluto

Via a GATE-P1, a supervisory PLC system can transmit non-safety-related information to a Pluto Safety PLC. A total of 64 Boolean values and 8 different 16-bit registers can be transmitted. Function blocks for these functions are available in Pluto Manager.

PLC Function Blocks

To simplify the integration of a Pluto Gateway Profibus into the supervisory PLC system, Jokab Safety provides ready-made function blocks for several popular brands of PLC. The function blocks make it easier to receive and send information to the Pluto system. The function blocks are supplied as open units with full access for the customer to change and add functions.

Profibus DP

GATE-P1
- Pluto Databus LED — PLUTO BUS
- "K" Button — K
- PC Port — PR
- Profibus LED — PROFI BUS
- Profibus Connector

CANopen

Data from Pluto

Via CANopen, a supervisory PLC system can have access to the I/O and other variables in a Pluto Safety PLC. Global I/Os in a Pluto Safety PLC are accessible via CANopen PDO messages. Local data in Pluto units can be read via CANopen SDO messages together with the PLC codes in the supervisory system.
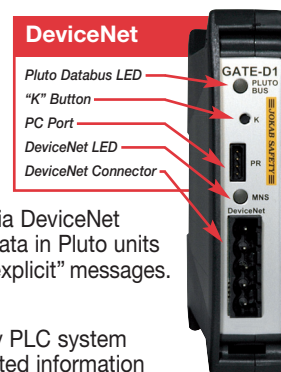
Data to Pluto

Via CANopen, a supervisory PLC system can transmit non-safety-related information to a Pluto Safety PLC. A total of 64 Boolean values and 8 different 16-bit registers can be transmitted (via CANopen PDO or SDO messages). Function blocks for these commands are available in Pluto Manager.

Pluto Bridge

A GATE-C1 can also be used to advantage as a CAN bridge when it is required to divide a Pluto databus into several sections. This is particularly useful when long databus cables are needed. A built-in filter function makes it possible to block data that is not required for use on the other side of the bridge. This reduces the databus loading in the other sections and permitting longer databus cables.

CANopen

GATE-C1
- Pluto Databus LED — PLUTO BUS
- "K" Button — K
- PC Port — PR
- CANopen LED — STATUS
- CANopen Connector — CANopen

DeviceNet

Data from Pluto

Via DeviceNet, a supervisory PLC system can have access to the I/O and other variables in a Pluto Safety PLC. Global I/Os in a Pluto Safety PLC are accessible via DeviceNet "implicit" messages. Local data in Pluto units can be read via DeviceNet "explicit" messages.

Data to Pluto

Via DeviceNet, a supervisory PLC system can transmit non-safety-related information to a Pluto Safety PLC. A total of 64 Boolean values and 8 different 16-bit registers can be transmitted (via DeviceNet "implicit" or "explicit" messages). Function blocks for these commands are available in Pluto Manager.

PLC Bridge

A GATE-D1 can also be used to advantage as a CAN bridge when it is required to divide a Pluto databus into several sections. This is particularly useful when long databus cables are needed. A built-in filter function makes it possible to block data that is not required for use on the other side of the bridge. This reduces the databus loading in the other sections and permitting longer databus cables.

ABB Robotics IRC5

Pluto Gateway DeviceNet has support for integration into an ABB Robotics IRC5-system.

DeviceNet

GATE-D1
- Pluto Databus LED — PLUTO BUS
- "K" Button — K
- PC Port — PR
- DeviceNet LED — MNS
- DeviceNet Connector — DeviceNet

Ethernet

Protocol

Ethernet GATE-E1 handles the status from and to Pluto Safety PLCs via Ethernet protocol — Ethernet/IP, PROFINET (in development), Modbus TCP and a simple binary protocol that uses TCP/IP. For IP-address configuration, etc. there is a simple web server and a terminal server.
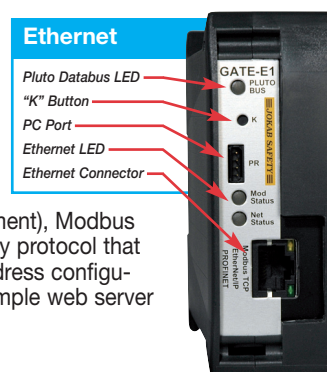
Data from Pluto

Via one of the Ethernet protocols, a supervisory PLC system can have access to the I/O and other variables in a Pluto Safety PLC. Global I/Os in a Pluto Safety PLC are accessible via the usual I/O transfer in the respective protocol. Local data in Pluto units can be read by special commands together with the PLC codes in the supervisory system.

Data to Pluto

Via the Ethernet protocol, a supervisory PLC system can transmit non-safety-related information to a Pluto Safety PLC. A total of 64 Boolean values and 8 different 16-bit registers can be transmitted. Function blocks for these commands are available in Pluto Manager.

Ethernet

GATE-E1
- Pluto Databus LED — PLUTO BUS
- "K" Button — K
- PC Port — PR
- Ethernet LED — Mod Status / Net Status
- Ethernet Connector — Modbus TCP/EtherNet/IP PROFINET

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