ASTRA GPI Extender

Technical Reference Sheet

TRS-1014-04

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Aveco
www.aveco.com

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Table of Contents

List of Figures

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INTRODUCTION

OVERVIEW

The purpose of the ASTRA GPI extender is to increase the number of available GPI relay outputs of the automation system.

One ASTRA automation server provides 15 GPI relay outputs. If a large number of GPIs are needed, one or more GPI extenders shall be used. Each GPI extender adds 32 GPI relay outputs.

DESCRIPTION

The ASTRA GPI extender includes two independent power supplies, 4 25-pin D-SUB connectors for relay switching and an RJ45 Ethernet port.

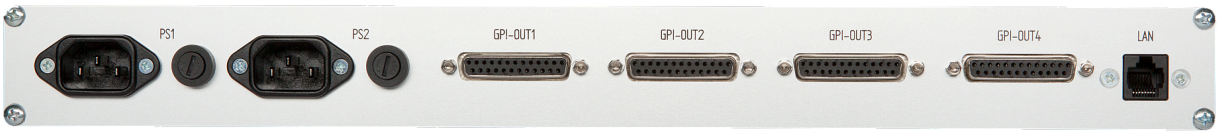
The Ethernet control interface allows the GPI extender to be placed at any location with TCP/IP 10/100 network connectivity.

On the front of the GPI Extender unit, there are two LEDs which indicate the proper operation of the respective power supply, PS1 and PS2.

Assembly of the GPI Extender Unit:

Unit	Qty	Control ports
GPI Extender	1	32x GPI out

Figure 1. GPI Extender - Back Panel



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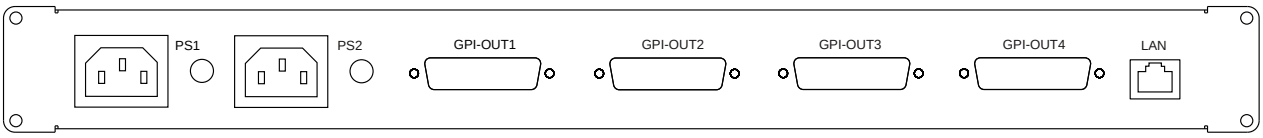
TECHNICAL SPECIFICATIONS

The GPI Extender is able to add 32 GPI relay outputs to your existing configuration.



Connectivity	
Number of GPI relay outputs	32
GPI connectors	D-sub 25F GPI-OUT1 GPI OUT2 GPI OUT3 GPI OUT4
Max. current on GPI contact	1 A
Power connectors	IEC/C14
Control interface	Ethernet, RJ45

Physical	
Dimensions	1U - 483mm x 45mm (19" x 1.75"), depth 280mm

Power	
Power Supply	2x PS, 90-260 V AC, 47-63 Hz
Power Consumption	Max. 90W

Control	
GPI-OUT1	relays 1-8
GPI-OUT2	relays 9-16
GPI-OUT3	relays 17-24
GPI-OUT4	relays 25-32

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Figure 2. Pinout of GPI Connectors 1-2

Connector GPI-OUT1
D-SUB 25 pin female
GPI OUT

1	relay1 a	14	relay5 b
2	relay1 b	15	relay5 c
3	relay1 c	16	relay6 a
4	relay2 a	17	relay6 b
5	relay2 b	18	relay6 c
6	relay2 c	19	relay7 a
7	relay3 a	20	relay7 b
8	relay3 b	21	relay7 c
9	relay3 c	22	relay8 a
10	relay4 a	23	relay8 b
11	relay4 b	24	relay8 c
12	relay4 c	25	ground
13	relay5 a		

Connector GPI-OUT2
D-SUB 25 pin female
GPI OUT

1	relay9 a	14	relay13 b
2	relay9 b	15	relay13 c
3	relay9 c	16	relay14 a
4	relay10 a	17	relay14 b
5	relay10 b	18	relay14 c
6	relay10 c	19	relay15 a
7	relay11 a	20	relay15 b
8	relay11 b	21	relay15 c
9	relay11 c	22	relay16 a
10	relay12 a	23	relay16 b
11	relay12 b	24	relay16 c
12	relay12 c	25	ground
13	relay13 a		

Figure 3. Pinout of GPI Connectors 3-4

Connector GPI-OUT3
D-SUB 25 pin female
GPI OUT

1	relay17 a	14	relay21 b
2	relay17 b	15	relay21 c
3	relay17 c	16	relay22 a
4	relay18 a	17	relay22 b
5	relay18 b	18	relay22 c
6	relay18 c	19	relay23 a
7	relay19 a	20	relay23 b
8	relay19 b	21	relay23 c
9	relay19 c	22	relay24 a
10	relay20 a	23	relay24 b
11	relay20 b	24	relay24 c
12	relay20 c	25	ground
13	relay21 a		

Connector GPI-OUT4
D-SUB 25 pin female
GPI OUT

1	relay25 a	14	relay29 b
2	relay25 b	15	relay29 c
3	relay25 c	16	relay30 a
4	relay26 a	17	relay30 b
5	relay26 b	18	relay30 c
6	relay26 c	19	relay31 a
7	relay27 a	20	relay31 b
8	relay27 b	21	relay31 c
9	relay27 c	22	relay32 a
10	relay28 a	23	relay32 b
11	relay28 b	24	relay32 c
12	relay28 c	25	ground
13	relay29 a		

Description of Relay Contacts	
a	common contact
b	contact switched on in action
c	contact switch on in stand-by position

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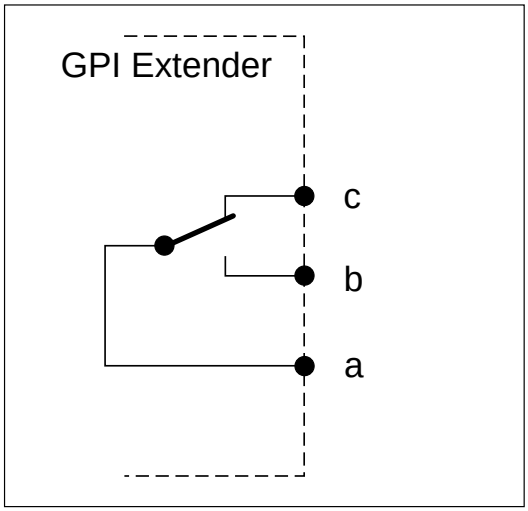
Figure 4. Schematic of GPI Output



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SETTING UP THE DEVICE

IP CONFIGURATION

The IP address for the device is set up using EthernetConifugrator (works in wine, located at **\\aveco\d-disk\Inst\Papouch** or available for download at: **http://www.papouch.com/cz/shop/product/quido-eth-2-32-vstupy-rele-a-teplomer-lan/**). After setting up the IP address, use the telnet interface on port **9999** to set up the device.

Note: *When setting up the IP address (or updating the firmware), don't forget to check your firewall settings and change the IP address of your PC so that it is in the same network, as a device.*

FIRMWARE UPDATE

Confirm that your device has the latest firmware and perform a firmware update if the latest version is not already installed. The current firmware is version 10. Contact Aveco to confirm that there is not a later version.

If you are using the new XPORT model of the GPI extender (MAC addresses start with 0080) you must use the firmware **xpt05quido_aveco_v10.lxc**. For older models (MAC addresses start with 0020), use **quido_aveco_v10.lxc**.

STEP-BY-STEP FIRMWARE UPDATE

1. Plug in the device to power it on.
2. Run **PEFLoader.exe**.
3. Click **open** and select the LXC file (if there is only one LXC file in the folder, it will be selected automatically).
4. Enter the IP address of the device and select **Load to Device!**
5. After the firmware has loaded, open the command prompt and access telnet configuration for the device using the following command: **telnet [IP address] 9999**
6. After submitting the command, quickly press **Enter**. This will open the configuration settings.
7. Set up the default telnet configuration: Choose **7** and confirm. Then choose **9** and confirm.

Warning: *If you do not configure the device this way, it will not operate properly.*

8. Reset the device by unplugging and plugging in the PSU.
9. Check the internal WEBsite to confirm the firmware was updated successfully.

VERIFY CONFIGURATION SETTINGS

After updating the firmware, the device can be tested using Spinel Terminal (if you do not have a real or virtual system set up for Spinel it; it is available at **https://www.papouch.com/cz/website/mainmenu/spinel/**). Connect to the device using UDP connection at port **10001**. You can then try to send commands (section Quido) to turn on/off GPIs. Here are some useful commmands:

Command	Function
B1?\r\n	get device version (1 is device address)
B$OS5H\r\n	set output 5 to state H or L
B1OR0\r\n	read output state (0 means all outputs, 1 means first otput etc.)

Note: *Characters **\r\n** are mandatory. If there is only one quido device, you can use the universal address **$** as the device address.*

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