

Universal GPIO



Setup and Operation Guide

Universal GPIO

- Document Number: 82102-XXXX
- Document Version: 1.0
- Date: October 25, 2016
- Printed in U.S.A.

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4750 Wiley Post Way, Suite 150 Salt Lake City, Utah 84116-2878 U.S.A.

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• EN55022:1994+A1&A2

Immunity

- EN55024:1998
- EN61000-3-2
- EN61000-3-3

Safety

• IEC 60950-1:2001 /EN 60950-1:2001

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Universal GPIO

Universal GPIO is designed to provide an Ethernet interface point for triggering opto-isolated inputs and controlling relay closures. The box provides 16 GPIs and 16 GPOs located on the front of the unit.

The system contains its own built-in browser and in the setup process, the operator uses an IP address to browse to the GPIO. Configuration then takes place when the utility's own web page is opened.

The ethernet is used to connect and configure. The purpose of the GPIO is to offer additional GPI's and GPO's to the router control system. Configuration can allow GPI's to trigger routers in a system, in addition to GPO's to respond to router triggers.

A GPI input will cause a router switch based on how it is configured.

The inputs and outputs are labeled on the front of the unit; 16 outputs placed on the left side of the box and 16 inputs placed on the right side of the box. The ethernet and serial connections are located at the rear of the box, with the serial connection doubling as a debug port as well.

The active light indicates the presence of GPIO activity.

Note: The GPI's contained within the UDS are designed as a simple closure to trigger the GPIO's. Put simply, an input is triggered when two pins are shorted together on the actual GPI input. In this way, GPI's can be directly wired to relay GPO's from other devices. The bottom pin of the GPI is an internal ground, while the top pin is used to trigger the GPI when grounded (externally, or to the bottom pin.)

The Universal GPIO connection box is designed to provide a Ethernet based interface point for triggering opto-isolated inputs and controlling relay closure outputs. The box provides sixteen GPIs and sixteen GPOs located at the rear of the unit.



Connect the E-NET port to standard 802.11 Ethernet switch or router

Indicates proper Controller connection



16 GPIO Inputs and Outputs

All 16 inputs (GPI's) are simple dry contact closures and require no voltage from a triggering device. The voltage for these inputs is applied within the GPIO unit itself.

The Universal GPIO is programmable from the Control Applet for mapping the individual contacts to specific source/destination combinations.

Figure 1-1.



GPIO Applet

The GPIO applet is found by browsing to the device across the network using the default address (shown).

• 192.168.5.181

Double-click the GPIO applet icon (below).

Utah-100/UDS GPIO Applet



When the Router icons appears, select "GPIO Configuration". Figure 1-3.

Note: You will only be able to connect if the browser window indicates "Applet ready for login."

Enter Username "admin" (default) - in the username entry box

User Login	×
?	Login to authenticate Username Password
:	OK Cancel

Figure 1-4.

Enter Password "admin" (default) - in the password entry box

The following window (below) will appear once you have logged in. Use the radio buttons in the Panel Configuration section to navigate through the configuration screens; *System, Network* and *Encoding.*

UDS GPIO - Utah-100/UDS	GPIO Config	Applet				- 0
curity	10000	CONTRACTOR OF A CONTRACTOR	Constant of Parameters of Parameters			the second second
Current User admin	Sv	vitch User Logout				
NO Configuration	100	the second s			A de Maria and	
Pio Connguration			AND DESCRIPTION OF	And the second second	0.7.8	and the second second
System O Network	k O Enco	ding Save Open.	Program GPIO			
ystem Info	And and and	and a second	Stands and the	and the second	Select 119	and the second
GPIO Name	UDS GPIO					
	and the second second					
Applet Version	1.4.5	Update Applet				
Durke a during the same	01.00					
Booboader version	01.03	ALLE FORTHING	and the second	- Barris		
GPIO Code Version	1.4.9	Update Code				
	21 92	Sai St. A. S. J.				
GPIO Firmware Version	03.01	Update Firmware	Tel then I a			
			GV P P S			
		Mr. Sala				
		ALC AREA		N		
			P			
		A STATE OF A			a state and	
			ALL SALES			

Figure 1-5.



System

When selected, the **System** radio button displays the current panel configuration detail (System Info area).

🕹 UDS Panel - Utah-100/UDS	8 Panel Config Appl	et				
Security	STEW -	14 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	NN 200	Sector Sector	Start Start	A STATE OF A
Current User admin	Switch U	Iser Logou	t			
Panel Configuration		aleren ale	i falle	an ger	NUC	and the second
System Network	C O Encoding	Save	Open	Print	🕈 Program Pa	anel
System Info			100		Seela 1	
Panel Name	UDS Panel			4.3		
Applet Version	1.3.0	Update Applet				
Bootloader Version	01.00			in the		
Panel Code Version	1.3.1	Update Code				
Panel Firmware Version	02.01	Update Firmwar	e jet	12 Bar	and the second s	
	and the second	the state of the state of the		an a start of the start of	and the second s	and the second second

Figure 1-6.

You can edit the System Name, view the system version number, and update system components from the System Info screen.

Network

This is the initial network setup screen. Indicate the correct IP configuration detail at this location.



Figure 1-7.



Network Parameters

Panel ID and address configuration is entered at the top of the display. 5001 is the Port default.

🛃 GPIO Network Configuration							
System Info							_
Panel Name		UDS	SPIO				
Appl	Applet Version		1.4.5		Update Ap		
Bootload	Bootloader Version						
GPIO Code Version		1.4.9		Update Cod		late Code	
GPIO Firmware Version		03.01		(Updat	te Firmware	
Network Param	eters						
GPIO IP	192.168.6.1	79	Por	t	5001		
Netmask	255.255.25	5.0					
Gateway	192.168.5.1						
Controller IP	192.168.6.1	92.168.6.180					
Controls							
Program GPIO Cancel							

Figure 1-8.

When indicated, the DHCP checkbox will allow the program to complete its own designation.

Once the above steps are complete, the router can be placed on the target network and configured as needed.

Encoding

Input Designation

Sources and Destinations to be controlled by each GPI are dragged from their scrolling columns at right side of the dialog window to their corresponding columns in the input area.

JUDS GPIO - Utah-100/UDS GPIO Config Applet		3
Security	Src Devices	3
Ourrant Ligar admin Switch Ligar Logout	SRC 001	
Content Cost autimn Owned Cost Eugode	SRC 002	1
GPIO Configuration	SRC 003	
The Automatic Antiperior and a second and a second and a second second second and a second second second second	SRC 004	
System Network • Encoding Save Open • Program GPIO	SRC 005	
GDIO Encoding	SRC 006	
	SRC 007	
General Purpose Input Opto	SRC 008	
O General Purpose Output Relay	SRC 009	
	560 010	
General Purpose Input	SRC 011	
GPI Salvo # Source Destination Revert	SRC 013	
1	SRC 014	
2	SRC 015	
3	SRC 016	
5	SRC 017	
6	SRC 018	,
		-
9	Dst Devices	_
10	DST 001	
	DST 002	
	DST 003	
14	DST 004	
15	DST 005	
	DST 006	
	DST 007	
	DST 008	
	DST 009	
	DST 010	
	DST 012	
	DST 013	
	DST 014	
	DST 015	
	DST 016	
	DST 017	
	DST 018	1
	C.W	
Figure 1-9		

You also have the ability to assign salvos instead of Source/Destination, though not both at the same time.

Note: Salvos are configured in the router controller software.

Revert

Revert applies to a 'device' capable of holding the GPI closed until a desired time. When a device is connected to a unit's GPI input and *modified* in any way, the previous position will revert back *to* when the GPI is released.



Output Designation

To assign GPOs (relay outputs) to desired Source/Destination combinations, drag them to the desired GPO position.

Sources and Destinations to be controlled are dragged from their scrolling columns at right side of the dialog window to their corresponding columns in the output area.



Figure 1-10.

Save and Program

The Save button function saves the configuration to a uniquely named file in a specified directory. This is useful if multiple versions of the panel configuration are needed.

UDS GPIO - Utah-100/UDS GPIO Config A	Applet	- 0 - X
Security		Src Devices
Current lines admin		OneToOne
Content Oser admin	ICITOSAT LOGODI	OneToTwo
Panel Configuration		SRC 001
and the same of the second sec		SRC 002
System Network Encod	ing Save Open 🛉 Program Panel	SRC 003
Danal Encoding	Contraction of the second second	SRC 004
runtercheoning		SRC 005
General Purpose Input		SRC 006
Canaral Purposa Output		SRC 007
General'r uipose output		SRC 008
	and the second sec	SRC 009
General Purpose Output		SRC 010
GPO Source	Destination	SRC 011
1 SRC 001	DST 001	SRC 012
2 SRC 002	DST 001	SPC 013
3 SRC 003	DST 001	000013
4 SRC 004	DST 001	SRC 014
5 SRC 005	D8T 001	SRC 015
6 SRC 006	DST 001	SRC 016 *
7 SRC 007	DST 001	A REAL PROPERTY AND ADDRESS OF THE OWNER
8 SRC 008	DST 001	Dst Devices
9 SRC 001	DST 002	Contract out for Aller
10 SRC 002	DST 002	DST 001
11 SRC 003	DST 002	DST 002
12 SRC 004	DST 002	097.002
13 SRC 005	DST 002	031003
14 SRC 006	DS1 002	DST 004
16 CDC 007	DOT 002	DST 005
10 340 007	D31002	DST 006
		DST 007
		DST 008
		DET 000
		031009
		DST 010
		DST 011
		DST 012
		DST 013
		DST 014
		DST 015
		DST 016
		007.017
		051017
C.		UST 018

Figure 1-11.

Program GPIO sends the configuration to the actual device.



Α

active light 1

D

debug port 1 DHCP checkbox 7

G

GPI input 1 GPIO Applet 3

I

Input Designation 8 IP configuration 6

Ν

Network 6,8 Network Parameters 7

0

Output Designation 9

Ρ

Panel Configuration 4 Panel ID 7 Password 4 Program 10 Program GPIO 10

R

Revert 8

S

Salvos 8 System 3 System Name 5

U

Username 3