Breakout Panel (BP-32)
User Manual

Table of Contents

Overview

GPIO Breakout Panel for the:

> *- GTP-32 Control Processor*
>
> *- Universal Switch Panel (USP3)*
>
> *- Anywhere Interface Box (AIB)*

The BP-32 Breakout Panel provides fast and simple connections to the GPI Inputs and GPO Outputs:

- 19-inch rackmount, 2-RU
- Thirty-two 2-pin pluggable GPI Input connectors
- Thirty-two 2-pin pluggable GPO Output connectors
- WET or DRY GPI Inputs, jumper selectable
- Recessed housing design allows cable access from within rack
- Front panel tie rod for cable strain relief
- Dual WET power supplies included
- 4- DB37 Male to DB37 Male cables included to connect a GTP-32 to the Breakout Panel.
  OR
  4- DB25 Male to DB25 Male cables included to connect a Universal Switch Panel (USP3) or Anywhere interface box (AIB) to the Breakout Panel.

EQUIPMENT LIST

Qty	Component	Part Number
1	BP-32	BP-32
2	BP-32 Power Supply	Included
4	DB37 Cables	Included based on Kit
4	DB25 Cables	Included based on Kit

VERSION HISTORY

Issue	Date	Change Details
1	10/24/19	First Issue

Installation

1. Connect the BP-32 power supply to POWER connector.
2. Connect the second BP-32 power supply to second POWER connector for redundancy.

BP-32 CONFIGURATION

PHOENIX TWO PIN CONNECTORS.

Each GPI and each GPO has its own 2 pin connector. The GPOs reside on the top row of the BP-32 and the GPIs reside on the bottom row of the BP-32. Each GPI and GPO may be configured for Wet or Dry mode using jumpers below the phoenix connector. When using the GPI WET mode, a short across the two GPI pins is required to activate the GPI's.

SET GPI WET/DRY MODE

Configure Wet/Dry mode for each individual GPI using the jumpers located below the GPI connector. To set to DRY mode, use only one jumper across the two center pins (D). To set to WET mode, use two jumpers across the two outside pins (WW).

SET GPO WET/DRY MODE

Configure Wet/Dry mode for each individual GPO using the jumpers below the GPO connector. The DRY mode uses only one jumper across the two center pins (D). The wet mode uses two jumpers across the two outside pins (WW).

GPI/GPO CONNECTOR PINOUT

DRY MODE = EXTERNAL POWER
WET MODE = BP-32 PROVIDES POWER

GPI CONNECTOR
> Dry Mode:
>> Pin #1: Cathode (-)
>> Pin #2: Anode (+)
> Wet Mode:
>> Pin #1: Cathode (-)
>> Pin #2: Ground

GPO CONNECTOR
> Dry Mode:
>> Pin #1: N.O.
>> Pin #2: Relay Common
> Wet Mode:
>> Pin #1: N.O.
>> Pin #2: Ground

"PWR SEL" JUMPER for GPO's

The BP-32 contains a "PWR SEL" jumper located in the center of the mainboard. The purpose of this jumper is to select the power source that will feed all of the GPO's.
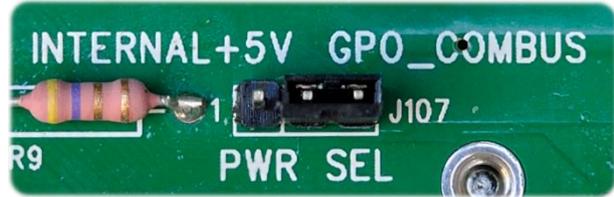
Jumpers placed across PINS 1 and 2 will put the BP-32 GPO's into "INTERNAL +5V" mode.
When in "INTERNAL +5V" mode the GPO's will draw power from the 5V power supplies attached to the rear POWER connectors.

Jumpers placed across PINS 2 and 3 will put the BP-32 GPO's into "GPO_COMBUS" mode. This is the default mode.
When in "GPO_COMBUS" mode the GPO's will draw power from the common bus via external power.

"EXTERNAL POWER" CONNECTOR

An external power connector labeled "EXT. POWER" is located on the right side of the mainboard. Connecting an external power supply to the "EXT. POWER" connector allows GPO's to support
voltages higher than 5V and up to a maximum of 28V.

If GROUND is needed on the common bus instead of voltage, short the pins on the "EXT. POWER" connector.

GTP-32 CONFIGURATION

The breakout panel has two sets of 37 pin connectors, one set is labeled "GPI" and the other set is labeled "GPO". Connect the furnished 37 pin interconnect cable to the matching connector on the breakout panel and the GTP-32 unit. Connect all 4 cables to their respective connectors.

Example:
Legend on GTP-32 unit = GPI 1-16; connect to GPI 1-16 connector on breakout panel.
Legend on GTP-32 unit = GPI 17-32; connect to GPI 17-32 connector on breakout panel
Legend on GTP-32 unit = GPO 1-16; connect to GPO 1-16 connector on breakout panel.
Legend on GTP-32 unit = GPO 17-32; connect to GPO 17-32 connector on breakout panel

USP3-8/AIB-2 CONFIGURATION

When connecting a USP3-8 or AIB-2 to a BP-32 breakout panel the connections are as follows:

GPI CONNECTION
1. Using a DB25 cable, connect one end of the cable into the GPI 1-8 port of the USP/AIB.
2. Connect the other side of the DB25 cable into the DB25 GPI 1-8 connector on the BP-32 breakout panel.

GPO CONNECTION
1. Using a DB25 cable, connect one end of the cable into the GPO 1-8 port of the USP/AIB.
2. Connect the other side of the DB25 cable into the DB37 GPO 1-8 connector on the BP-32 breakout panel.

USP3-16/AIB-3/AIB-4 CONFIGURATION

When connecting a USP3-16, AIB-2 or AIB-4 to a BP-32 breakout panel the connections are as follows:

GPI CONNECTION
1. Using a DB25 cable, connect one end of the cable into the GPI 1-8 port of the USP/AIB.
2. Connect the other side of the DB25 cable into the DB25 GPI 1-8 connector on the BP-32 breakout panel.
3. Using a second DB25 cable, connect one end of the cable into the GPI 9-16 port of the USP/AIB.
4. Connect the other side of the DB25 cable into the DB25 GPI 9-16 connector on the BP-32 breakout panel.

GPO CONNECTION
1. Using a DB25 cable, connect one end of the cable into the GPO 1-8 port of the USP/AIB.
2. Connect the other side of the DB25 cable into the DB25 GPO 1-8 connector on the GTP-32 breakout panel.
3. Using a second DB25 cable, connect one end of the cable into the GPO 9-16 port of the USP/AIB.
4. Connect the other side of the DB25 cable into the DB25 GPO 9-16 connector on the BP-32 breakout panel.

MULTIPLE USP3-16/AIB-3/AIB-4 CONFIGURATION

When connecting multiple USP3-16's, AIB-2's or AIB-4 to a BP-32 breakout panel the connections are as follows:

GPI CONNECTION

1ˢᵗ USP/AIB PANEL

1. Using a DB25 cable, connect one end of the cable into the GPI 1-8 port of the first USP/AIB panel.
2. Connect the other side of the DB25 cable into the DB25 GPI 1-8 connector on the BP-32 breakout panel.
3. Using a second DB25 cable, connect one end of the cable into the GPI 9-16 port of the first USP/AIB panel.
4. Connect the other side of the DB25 cable into the DB25 GPI 9-16 connector on the GTP-32 breakout panel.

2ⁿᵈ USP/AIB PANEL

1. Using a DB25 cable, connect one end of the cable into the GPI 1-8 port of the second USP/AIB panel.
2. Connect the other side of the DB25 cable into the DB25 GPI 17-24 connector on the GTP-32 breakout panel.
3. Using a second DB25 cable, connect one end of the cable into the GPI 9-16 port of the second USP/AIB panel.
4. Connect the other side of the DB25 cable into the DB25 GPI 24-32 connector on the GTP-32 breakout panel.

GPO CONNECTION

1ˢᵗ USP/AIB PANEL

1. Using a DB25 cable, connect one end of the cable into the GPO 1-8 port of the first USP/AIB panel.
2. Connect the other side of the DB25 cable into the DB25 GPO 1-8 connector on the BP-32 breakout panel.
3. Using a second DB25 cable, connect one end of the cable into the GPO 9-16 port of the first USP/AIB panel.
4. Connect the other side of the DB25 cable into the DB25 GPO 9-16 connector on the GTP-32 breakout panel.

2ⁿᵈ USP/AIB PANEL

1. Using a DB25 cable, connect one end of the cable into the GPO 1-8 port of the second USP/AIB panel.
2. Connect the other side of the DB25 cable into the DB25 GPO 17-24 connector on the GTP-32 breakout panel.
3. Using a second DB25 cable, connect one end of the cable into the GPO 9-16 port of the second USP/AIB panel.
4. Connect the other side of the DB25 cable into the DB25 GPO 24-32 connector on the GTP-32 breakout panel.

Specifications

Power: 100 VAC - 240 VAC power supply, 9-pin connector

Size: 1RU: 3 ½ inch x 19 inch x 2 ¼ inch (H.W.D.)

Weight: 2 lbs

GPI Input: 2-pin Phoenix Connector

GPO Output: 2-pin Phoenix Connector
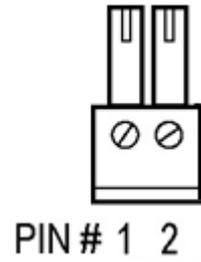
Warranty

TSL Products warrants its product to be free from defects in material and workmanship for a period of one (1) year from the date of sale to the original purchaser from TSL Products.

In order to enforce the rights under this warranty, the customer must first contact TSL's Customer Support Department to afford the opportunity of identifying and fixing the problem without sending the unit in for repair. If TSL's Customer Support Department cannot fix the problem, the customer will be issued a Returned Merchandise Authorization number (RMA). The customer will then ship the defective product prepaid to TSL Products with the RMA number clearly indicated on the customer's shipping document. The merchandise is to be shipped to:

TSL Products
19770 Bahama St.
Northridge, CA. 91324
USA

Failure to obtain a proper RMA number prior to returning the product may result in the return not being accepted, or in a charge for the required repair.

TSL Products, at its option, will repair or replace the defective unit. TSL Products will return the unit prepaid to the customer. The method of shipment is at the discretion of TSL Products principally UPS Ground for shipments within the United States of America. Shipments to international customers will be sent via air. Should a customer require the product to be returned in a more expeditious manner, the return shipment will be billed to their freight account.

This warranty will be considered null and void if accident, misuse, abuse, improper line voltage, fire, water, lightning or other acts of God damaged the product. All repair parts are to be supplied TSL Products, either directly or through its authorized dealer network. Similarly, any repair work not performed by either TSL Products or its authorized dealer may void the warranty.

After the warranty period has expired, TSL Products offers repair services at prices listed in the TSL Products Price List. TSL Products reserves the right to refuse repair of any unit outside the warranty period that is deemed non-repairable.

TSL Products shall not be liable for direct, indirect, incidental, consequential or other types of damage resulting from the use of the product.

# # #