# Hardware Installation Guide

## PTBPANEL

## Front Panel for Pluggable Terminal Blocks

# 1 Overview

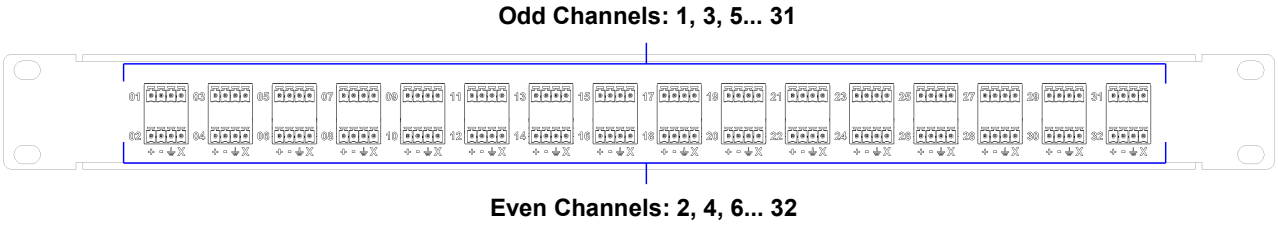
PTBPANEL is a 1U rack-mountable breakout panel for ACQ132CPCI, ACQ164CPCI, ACQ196CPCI and ACQ216CPCI, accepting 32 channels using 3- or 4-contact Pluggable Terminal Blocks.

## 1.1 Variants and Compatibility

| *Variant* | *Compatibility* | *Description* |
|---|---|---|
| PTBPANEL-S1 | ACQ196CPCI, ACQ164CPCI | Single rear output; J3 only |
| PTBPANEL-S2 | ACQ132CPCI, ACQ216CPCI | Dual rear outputs; J1 and J2 only |

# 2 Front Panel Connectors

PTBPANEL contains 32 channels in blocks of two.



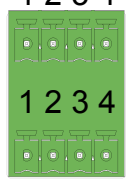

*PTBPANEL Front Panel Layout*

It is common practice for customers to manufacture their own cables to fit in with their own sensor requirements. The following sections explain each connector configuration.

## 2.1 Front Panel Connector Pinout

Each channel has the following pinout, labelled beneath each connector. Both top and bottom rows are identical, but relate to different channels.

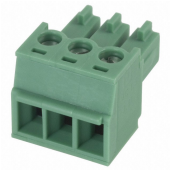
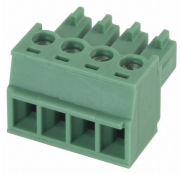
| *Pin* | *Label* | *Name* | *Notes* |
|---|---|---|---|
| 1 | + | Analogue Input + | |
| 2 | - | Analogue Input - | |
| 3 | ⏚ | Ground | Capacitively coupled to Chassis Ground. |
| 4 | X | Bridge Excitation | Please contact D-Tacq Solutions for more information. |



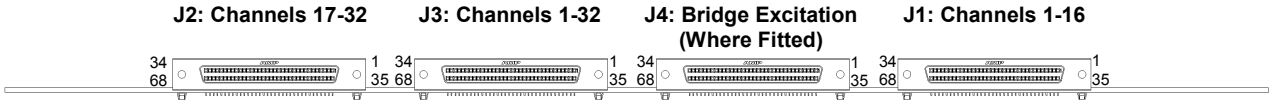

*PTBPANEL Channel Pinout*

### 2.2 Matching Front Panel Connectors

Matching connector type is produced by Phoenix Contact, with a pitch of 0.150” (3.81mm). Other compatible connectors are available.

| ***Part Name*** | ***Positions*** | ***Order Number*** | ***Example*** |
|---|---|---|---|
| MC 1,5/3-ST-3,81 | 3 | Phoenix Contact 1803581 |  |
| MC 1,5/4-ST-3,81 | 4 | Phoenix Contact 1803594 |  |

## 3 Rear Connectors




*PTBPANEL Rear Connectors*

It is common practice for customers to manufacture their own cables to fit in with their own sensor requirements. The following sections explains each connector configuration.

D–TACQ Solutions supply a standard range of cables and can also produce custom solutions. PTBPANEL may be used with standard compatible cables such as L-COM CA900MM-2M.

## 3.1 Rear Connector Pinout

### 3.1.1 J1: Channels 1-16

This connector is installed for PTBPANELs to be used with ACQ132CPCI or ACQ216CPCI.

| ***Pin No.*** | ***Signal*** | ***Pin No.*** | ***Signal*** |
|---|---|---|---|
| 1 | 0V | 35 | 0V |
| 2 | 0V | 36 | 0V |
| 3 | Analog In 1+ | 37 | Analog In 1- |
| 4 | 0V | 38 | 0V |
| 5 | Analog In 2+ | 39 | Analog In 2- |
| 6 | 0V | 40 | 0V |
| 7 | Analog In 3+ | 41 | Analog In 3- |
| 8 | 0V | 42 | 0V |
| 9 | Analog In 4+ | 43 | Analog In 4- |
| 10 | 0V | 44 | 0V |
| 11 | Analog In 5+ | 45 | Analog In 5- |
| 12 | 0V | 46 | 0V |
| 13 | Analog In 6+ | 47 | Analog In 6- |
| 14 | 0V | 48 | 0V |
| 15 | Analog In 7+ | 49 | Analog In 7- |
| 16 | 0V | 50 | 0V |
| 17 | Analog In 8+ | 51 | Analog In 8- |
| 18 | 0V | 52 | 0V |
| 19 | Analog In 9+ | 53 | Analog In 9- |
| 20 | 0V | 54 | 0V |
| 21 | Analog In 10+ | 55 | Analog In 10- |
| 22 | 0V | 56 | 0V |
| 23 | Analog In 11+ | 57 | Analog In 11- |
| 24 | 0V | 58 | 0V |
| 25 | Analog In 12+ | 59 | Analog In 12- |
| 26 | 0V | 60 | 0V |
| 27 | Analog In 13+ | 61 | Analog In 13- |
| 28 | 0V | 62 | 0V |
| 29 | Analog In 14+ | 63 | Analog In 14- |
| 30 | 0V | 64 | 0V |
| 31 | Analog In 15+ | 65 | Analog In 15- |
| 32 | 0V | 66 | 0V |
| 33 | Analog In 16+ | 67 | Analog In 16- |
| 34 | 0V | 68 | 0V |

Matching connector type is 68 way male Micro D (SCSI-II Type) with 4-40 screw. Cable can be 68 way ribbon or, preferably, 34 sheathed wire pairs.

### 3.1.2 J2: Channels 17-32

This connector is installed for PTBPANELs to be used with ACQ132CPCI or ACQ216CPCI.

| ***Pin No.*** | ***Signal*** | ***Pin No.*** | ***Signal*** |
|---|---|---|---|
| 1 | 0V | 35 | 0V |
| 2 | 0V | 36 | 0V |
| 3 | Analog In 17+ | 37 | Analog In 17- |
| 4 | 0V | 38 | 0V |
| 5 | Analog In 18+ | 39 | Analog In 18- |
| 6 | 0V | 40 | 0V |
| 7 | Analog In 19+ | 41 | Analog In 19- |
| 8 | 0V | 42 | 0V |
| 9 | Analog In 20+ | 43 | Analog In 20- |
| 10 | 0V | 44 | 0V |
| 11 | Analog In 21+ | 45 | Analog In 21- |
| 12 | 0V | 46 | 0V |
| 13 | Analog In 22+ | 47 | Analog In 22- |
| 14 | 0V | 48 | 0V |
| 15 | Analog In 23+ | 49 | Analog In 23- |
| 16 | 0V | 50 | 0V |
| 17 | Analog In 24+ | 51 | Analog In 24- |
| 18 | 0V | 52 | 0V |
| 19 | Analog In 25+ | 53 | Analog In 25- |
| 20 | 0V | 54 | 0V |
| 21 | Analog In 26+ | 55 | Analog In 26- |
| 22 | 0V | 56 | 0V |
| 23 | Analog In 27+ | 57 | Analog In 27- |
| 24 | 0V | 58 | 0V |
| 25 | Analog In 28+ | 59 | Analog In 28- |
| 26 | 0V | 60 | 0V |
| 27 | Analog In 29+ | 61 | Analog In 29- |
| 28 | 0V | 62 | 0V |
| 29 | Analog In 30+ | 63 | Analog In 30- |
| 30 | 0V | 64 | 0V |
| 31 | Analog In 31+ | 65 | Analog In 31- |
| 32 | 0V | 66 | 0V |
| 33 | Analog In 32+ | 67 | Analog In 32- |
| 34 | 0V | 68 | 0V |

Matching connector type is 68 way male Micro D (SCSI-II Type) with 4-40 screw. Cable can be 68 way ribbon or, preferably, 34 sheathed wire pairs.

### 3.1.3 J3: Channels 1-32

This connector is installed for PTBPANELs to be used with ACQ196CPCI.

| ***Pin No.*** | ***Signal*** | ***Pin No.*** | ***Signal*** |
|---|---|---|---|
| 1 | 0V | 35 | 0V |
| 2 | 0V | 36 | 0V |
| 3 | Analog In 1+ | 37 | Analog In 1- |
| 4 | Analog In 2+ | 38 | Analog In 2- |
| 5 | Analog In 3+ | 39 | Analog In 3- |
| 6 | Analog In 4+ | 40 | Analog In 4- |
| 7 | Analog In 5+ | 41 | Analog In 5- |
| 8 | Analog In 6+ | 42 | Analog In 6- |
| 9 | Analog In 7+ | 43 | Analog In 7- |
| 10 | Analog In 8+ | 44 | Analog In 8- |
| 11 | Analog In 9+ | 45 | Analog In 9- |
| 12 | Analog In 10+ | 46 | Analog In 10- |
| 13 | Analog In 11+ | 47 | Analog In 11- |
| 14 | Analog In 12+ | 48 | Analog In 12- |
| 15 | Analog In 13+ | 49 | Analog In 13- |
| 16 | Analog In 14+ | 50 | Analog In 14- |
| 17 | Analog In 15+ | 51 | Analog In 15- |
| 18 | Analog In 16+ | 52 | Analog In 16- |
| 19 | Analog In 17+ | 53 | Analog In 17- |
| 20 | Analog In 18+ | 54 | Analog In 18- |
| 21 | Analog In 19+ | 55 | Analog In 19- |
| 22 | Analog In 20+ | 56 | Analog In 20- |
| 23 | Analog In 21+ | 57 | Analog In 21- |
| 24 | Analog In 22+ | 58 | Analog In 22- |
| 25 | Analog In 23+ | 59 | Analog In 23- |
| 26 | Analog In 24+ | 60 | Analog In 24- |
| 27 | Analog In 25+ | 61 | Analog In 25- |
| 28 | Analog In 26+ | 62 | Analog In 26- |
| 29 | Analog In 27+ | 63 | Analog In 27- |
| 30 | Analog In 28+ | 64 | Analog In 28- |
| 31 | Analog In 29+ | 65 | Analog In 29- |
| 32 | Analog In 30+ | 66 | Analog In 30- |
| 33 | Analog In 31+ | 67 | Analog In 31- |
| 34 | Analog In 32+ | 68 | Analog In 32- |

Matching connector type is 68 way male Micro D (SCSI-II Type) with 4-40 screw. Cable can be 68 way ribbon or, preferably, 34 sheathed wire pairs.

### 3.1.4 J4: Bridge Excitation (Where Fitted)

This connector is installed for PTBPANELs configured for bridge excitation. Please contact D-Tacq Solutions for more information.

| ***Pin No.*** | ***Signal*** | ***Pin No.*** | ***Signal*** |
|---|---|---|---|
| 1 | 0V | 35 | 0V |
| 2 | 0V | 36 | 0V |
| 3 | Excitation Source 1 | 37 | Excitation Return 1 |
| 4 | Excitation Source 2 | 38 | Excitation Return 2 |
| 5 | Excitation Source 3 | 39 | Excitation Return 3 |
| 6 | Excitation Source 4 | 40 | Excitation Return 4 |
| 7 | Excitation Source 5 | 41 | Excitation Return 5 |
| 8 | Excitation Source 6 | 42 | Excitation Return 6 |
| 9 | Excitation Source 7 | 43 | Excitation Return 7 |
| 10 | Excitation Source 8 | 44 | Excitation Return 8 |
| 11 | Excitation Source 9 | 45 | Excitation Return 9 |
| 12 | Excitation Source 10 | 46 | Excitation Return 10 |
| 13 | Excitation Source 11 | 47 | Excitation Return 11 |
| 14 | Excitation Source 12 | 48 | Excitation Return 12 |
| 15 | Excitation Source 13 | 49 | Excitation Return 13 |
| 16 | Excitation Source 14 | 50 | Excitation Return 14 |
| 17 | Excitation Source 15 | 51 | Excitation Return 15 |
| 18 | Excitation Source 16 | 52 | Excitation Return 16 |
| 19 | Excitation Source 17 | 53 | Excitation Return 17 |
| 20 | Excitation Source 18 | 54 | Excitation Return 18 |
| 21 | Excitation Source 19 | 55 | Excitation Return 19 |
| 22 | Excitation Source 20 | 56 | Excitation Return 20 |
| 23 | Excitation Source 21 | 57 | Excitation Return 21 |
| 24 | Excitation Source 22 | 58 | Excitation Return 22 |
| 25 | Excitation Source 23 | 59 | Excitation Return 23 |
| 26 | Excitation Source 24 | 60 | Excitation Return 24 |
| 27 | Excitation Source 25 | 61 | Excitation Return 25 |
| 28 | Excitation Source 26 | 62 | Excitation Return 26 |
| 29 | Excitation Source 27 | 63 | Excitation Return 27 |
| 30 | Excitation Source 28 | 64 | Excitation Return 28 |
| 31 | Excitation Source 29 | 65 | Excitation Return 29 |
| 32 | Excitation Source 30 | 66 | Excitation Return 30 |
| 33 | Excitation Source 31 | 67 | Excitation Return 31 |
| 34 | Excitation Source 32 | 68 | Excitation Return 32 |

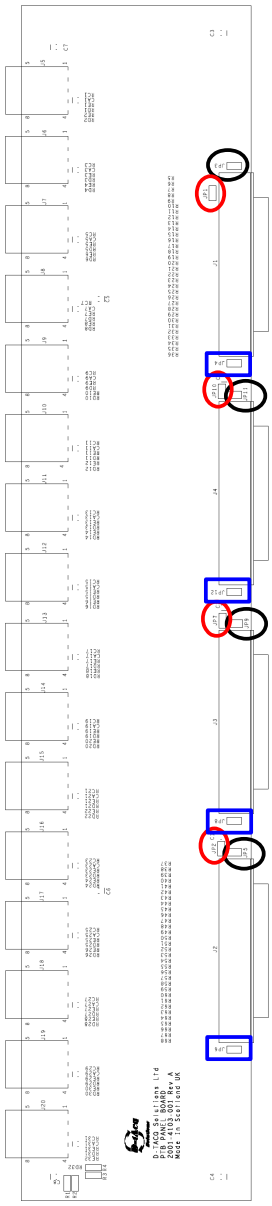
Matching connector type is 68 way male Micro D (SCSI-II Type) with 4-40 screw. Cable can be 68 way ribbon or, preferably, 34 sheathed wire pairs.

# 4 Jumpers

PTBPANEL can be configured to route the signal and shield ground connections from the rear SCSI-68 connectors in several different ways.

The jumpers are all located next to the SCSI-68 connectors and the following is a description and diagram of their settings and locations.

| *Jumpers* | *Setting* | *Description* | *Symbol* |
|---|---|---|---|
| **JP1, JP2, JP7, JP10** | 1 (Fit) | Connect signal ground from SCSI-68 to PTBPANEL Analogue Ground. |  |
| | 0 | Float signal ground. | |
| **JP3, JP5, JP9, JP11** | 1 (Fit) | Connect SCSI-68 connector shield to PTBPANEL Analogue Ground. |  |
| | 0 | Float SCSI-68 connector shield. | |
| **JP4, JP6, JP8, JP12** | 1 (Fit) | Connect SCSI-68 connector shield to PTBPANEL Chassis Ground. |  |
| | 0 | Float SCSI-68 connector shield. | |



# 5 Specification

This describes the ESD protection and other specifications provided by PTBPANEL[1].

| | ***Value*** | | | ***Units*** | ***Condition*** |
|---|---|---|---|---|---|
| | ***Min.*** | ***Nom.*** | ***Max.*** | | |
| Nominal Input Voltage | -10 | | +10 | V | |
| ESD Protection Voltage | | 8 | | kV | Contact |
| ESD Protection Voltage | | 15 | | kV | Air |
| Peak ESD Pulse Power | | 400 | | W | 10/1000µs |
| Peak ESD Pulse Power | | 2.3 | | kW | 8/20µs |
| Shield Coupling Capacitance | | 0.01 | | µF | To Chassis Ground |
| Shield Coupling Voltage | | | 200 | V | |

1 http://www.st.com/internet/com/TECHNICAL_RESOURCES/TECHNICAL_LITERATURE/DATASHEET/CD00001333.pdf