PowerPACK Series

BlueTooth® Auxiliary Adapters for Pyxis Sensors

Product Description

The Pyxis PowerPACK series BlueTooth® auxiliary adapters are uniquely designed to provide additional power budget and wireless communication to drive Pyxis inline sensors to a receiving microprocessor controller, PLC or DCS with limited power supply. Offered in a single-channel, dual-channel and four-channel format, this auxiliary adapter has a built-in power supply with 20-Watt capability. Each PowerPACK is also integrated with built-in BlueTooth® 5.0 interface, allowing users to wirelessly pair to all Pyxis sensors connected with the uPyxis APP for Mobile Devices and Desktop for real-time diagnosis, calibration and configuration.

Pyxis
Power*PACK* 4

PowerPACK auxiliary adapters can be utilized in 100VAC to 240VAC power format, with direct outlet plug-in design. PowerPACK-1 offers a single channel input and output quick adapter cable, containing 4-20mA interface, while PowerPACK-2 and PowerPACK-4 extends this capability to two and four individual input and output connection adapters. Additionally, PowerPACK-2 and PowerPACK-4 both offer RS-485 signal passthrough for all Pyxis sensors connected.   Each input is specifically designed for direct connection to standard (7-Pin) Pyxis inline sensors and output is designed to be connected to the Pyxis standard (7-Pin) flying lead cable provided with the PowerPACK unit, then terminated to the receiving controller. The sensor input glands (side of box) and 4-20mA / RS-485 signal output glands (top of box) are mapped one-to-one by the numbered labels. Conversion adapters for Pyxis 5Pin and 8Pin sensors are also available allowing PowerPACK to be used with all Pyxis sensor formats.

A typical PowerPACK-4 setup procedure involves the user connecting one ST-500 sensor, one ST-720 sensor and one ST-712 sensor to the sensor input glands 1, 2 and 3 (side) and then connects the flying lead output cables from the 4-20mA signal glands 1,2 and 3 (top) to receiving controller 4-20mA input channels. This guide provides details on output wiring connection for some of the most commonly used Pyxis sensors. PowerPACK comes with standard 110V USA plug adapter, however, unit is fully functional with 240VAC operation using a standard outlet conversion adapter or allows for direct wiring internally.

Typical Application

The Pyxis PowerPACK Series are ideal for use in process or water treatment applications with using Pyxis inline sensors and microprocessor controllers which may be limited to <1.5watt power supply per analog input channel. With ease of installation in mind, PowerPACK was designed to be rapidly deployed for single or multiple Pyxis sensor applications requiring extra power and BlueTooth® interface for uPyxis APP use.

Features

- Power supply and connection of up to 4 Pyxis Sensors
- 4-20mA signal output of up to 4 Pyxis Sensors to any controller
- RS-485 signal passthrough also provided in PowerPACK-2 & PowerPACK-4
- BlueTooth® Version 5.0 for wireless sensor diagnosis, calibration and configuration via uPyxis APP
- Broad range external power input (100-240V AC)
- ABS enclosure with IP-54 protection

Specifications

Items	PowerPACK-1	PowerPACK-2	PowerPACK-4
P/N	MA-BLE-1	MA-BLE-2	MA-BLE-4
Power Input	100-240V AC (50/60Hz) w/1.0 AMP Fuse		
Power Output	24V DC, 20W		
Wireless Connectivity	BlueTooth® 5.0		
5-Pin Sensor Connection	Requires CC-57M Conversion Adapter Cable – Sold Separately		
7-Pin Sensor Connection	Direct to PowerPACK – No Conversion Needed		
8-Pin Sensor Connection	Requires CC-78M Conversion Adapter Cable – Sold Separately		
Signal Input Adapter *(7-Pin Female)*	1x 4-20mA	2x 4-20mA & RS-485	4x 4-20mA & RS-485
Signal Output Adapter *(7-Pin Male)*	1x 4-20mA	2x 4-20mA & RS-485	4x 4-20mA & RS-485
Output Cable	7-Pin Flying Lead Cable(s) with Female Adapter Provided with Each (2.0ft)		
Enclosure Material	ABS		
Enclosure Rating	IP54		
Storage Temperature	32 - 122 °F (0 - 50° C)		
Operational Temperature	32 - 122 °F (0 - 50° C)		
Dimension	5.1" H x 3.1" W x 2.7" D	4.9" H x 4.9" W x 2.9" D	
Weight	600 g (1.32 lbs.)	1200 g (2.64 lbs.)	1220 g (2.68 lbs.)
Certificates	CE / RoHS / UKCA		

Specifications may change without notice.

Order Information	**P/N**
PowerPACK-1 *(Single Channel Powered BlueTooth® Adapter w 1x4-20mA)*	MA-BLE-1
PowerPACK-2 *(Dual Channel Powered BlueTooth® Adapter w 2x4-20mA & RS-485)*	MA-BLE-2
PowerPACK-4 *(Four Channel Powered BlueTooth® Adapter w 4x4-20mA & RS-485)*	MA-BLE-4

Optional Accessories	**P/N**
CC-78M *(7Pin Male to 8Pin Male Conversion Adapter Cable for 8 Pin Pyxis Sensors – 4inch)*	50771
CC-57M *(7Pin Male to 5Pin Male Conversion Adapter Cable for 5 Pin Pyxis Sensors – 4inch)*	50749
MA-1100 *(Flying Lead – 7Pin Female Replacement Cable - 1.5m/4.9ft)*	50747

Package Contents

PowerPACK-1 package list:
- One **PowerPACK-1** (P/N: MA-BLE-1)
  - Includes One Flying Lead Cable with Female 7-Pin Adapter for 4-20mA- 0.6m / 2.0ft

PowerPACK-2 package list:
- One **PowerPACK-2** (P/N: MA-BLE-2)
  - Includes Two Flying Lead Cable with Female 7-Pin Adapter for 4-20mA - 0.6m / 2.0ft
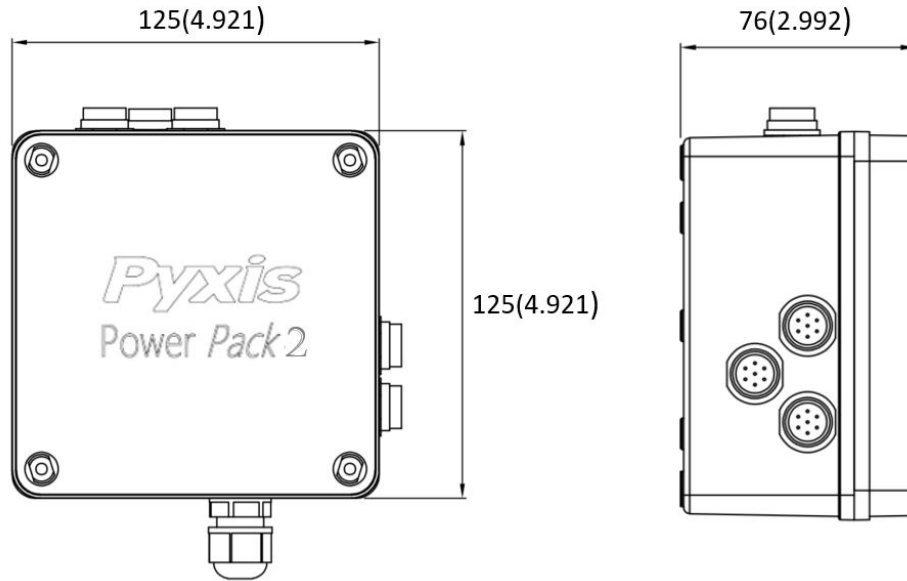 - Includes One Flying Lead Cable with Male 2-Pin Adapter for RS-485 - 0.6 m / 2.0ft

PowerPACK-4 package list:
- One **PowerPACK-4** (P/N: MA-BLE-4)
  - Includes Four Flying Lead Cable with Female 7-Pin Adapter for 4-20mA - 0.6m/ 2.0ft
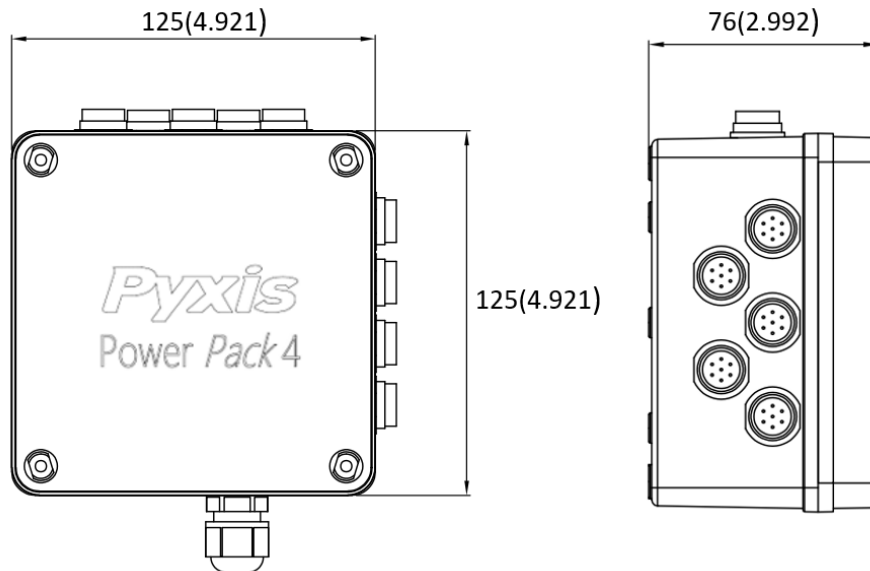 - Includes One Flying Lead Cable with Male 2-Pin Adapter for RS-485 - 0.6 m / 2.0ft

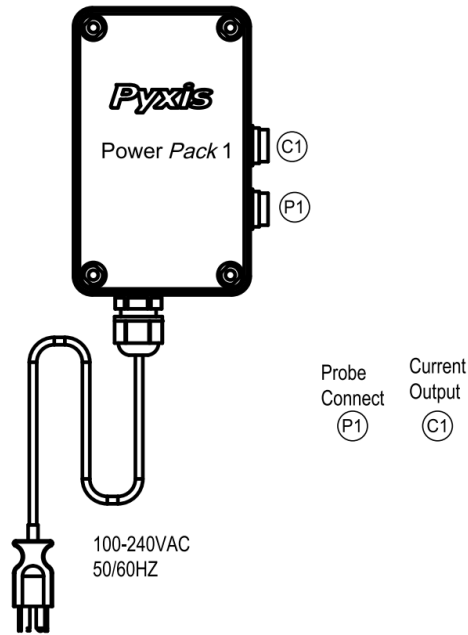## PowerPACK-1 Dimensions (mm)
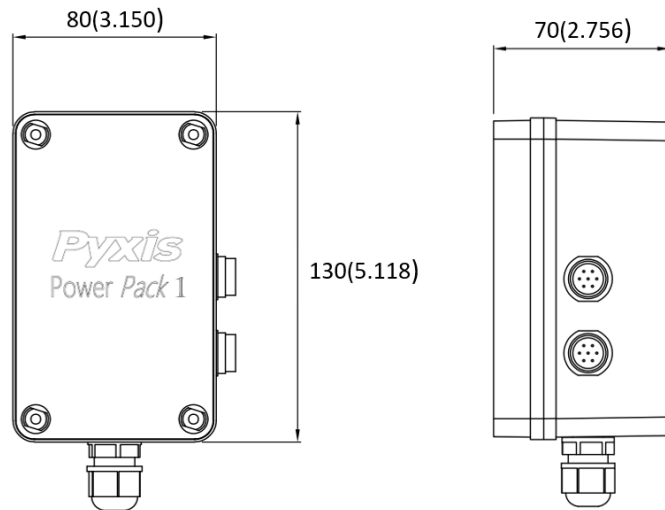
PowerPACK-2 Dimensions (mm)
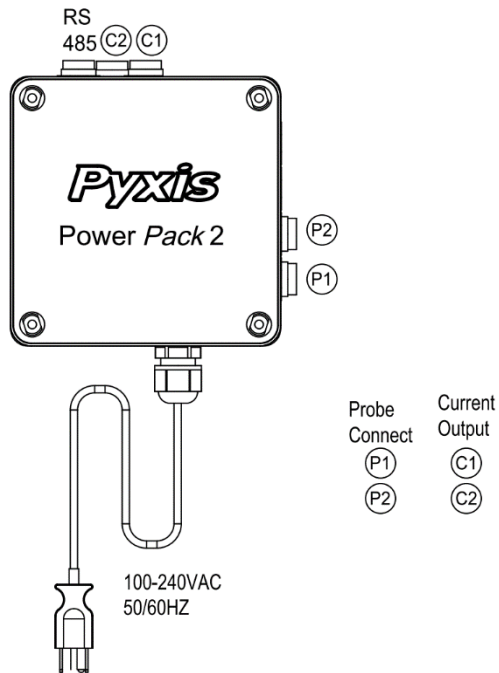

PowerPACK-4 Dimensions (mm)
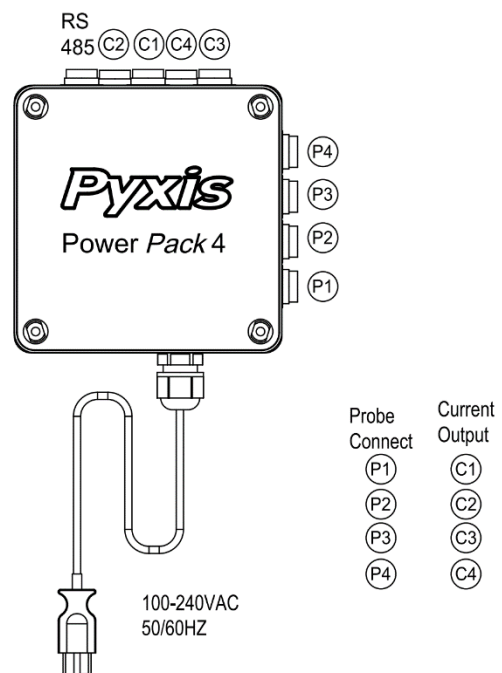

NOTE PowerPACK-2 and PowerPACK-4 are same dimension.

PowerPACK-1 Cable Interface


```
Probe        Current
Connect      Output
 P1           C1
```

PowerPACK-2 Cable Interface


```
Probe        Current
Connect      Output
 P1           C1
 P2           C2
```

PowerPACK-4 Cable Interface


```
Probe        Current
Connect      Output
 P1           C1
 P2           C2
 P3           C3
 P4           C4
```

Wiring Diagram for Pyxis 7-Pin Sensors

7-Pin Flying Lead 4-20mA Output
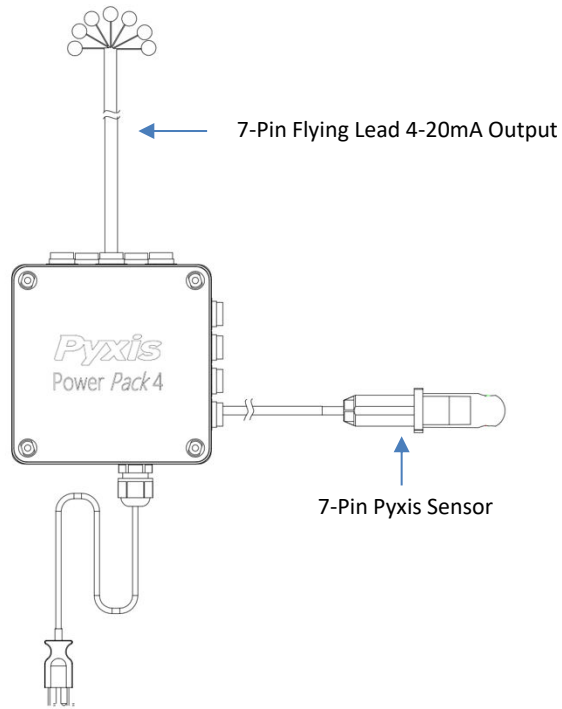
7-Pin Pyxis Sensor

Wiring Diagram for Pyxis 8-Pin Sensors

7-Pin Flying Lead 4-20mA Output

CC-78M
7-Pin to 8-Pin
Conversion Adapter
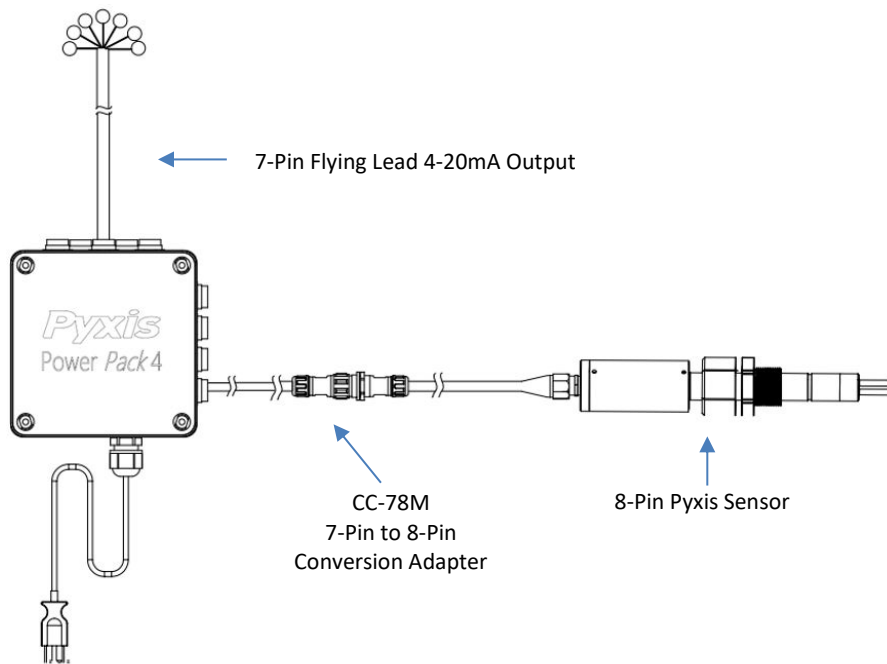
8-Pin Pyxis Sensor

4-20mA Output Wire Color for PowerPACK Series – Commonly Used Pyxis Sensors

Sensor Name	Sensor Pin Format	PowerPACK Series 4-20mA Output / Corresponding Wire Color (7-Pin)		
		BLACK	WHITE	GREEN
ST-500	7-Pin	4-20mA-	1#4-20mA for PTSA	Not Used
ST-500RO	7-Pin	4-20mA-	1#4-20mA for PTSA	Not Used
ST-525	7-Pin	4-20mA -	1#4-20mA for Fluorescein	Not Used
ST-525-HR	7-Pin	4-20mA -	1#4-20mA for Fluorescein	Not Used
ST-565	7-Pin	4-20mA -	1#4-20mA for HST	Not Used
ST-565T	7-Pin	4-20mA -	1#4-20mA for TTA	Not Used
ST-600	7-Pin	4-20mA -	1#4-20mA for % Bleach Concentration	2#4-20mA for Temperature
ST-601	7-Pin	4-20mA -	1#4-20mA for % ClO2 Concentration	2#4-20mA for Temperature
ST-604	7-Pin	4-20mA -	1#4-20mA for % Bleach Concentration	2#4-20mA for Temperature
ST-730	7-Pin	4-20mA -	1#4-20mA for Turbidity	Not Used
ST-730B	7-Pin	4-20mA -	1#4-20mA for Turbidity	Not Used
ST-731	7-Pin	4-20mA -	1#4-20mA for Turbidity	Not Used
ST-735	7-Pin	4-20mA -	1#4-20mA for Turbidity	Not Used
ST-588	8-Pin	4-20mA -	1#4-20mA for Fluorescent Polymer	2#4-20mA for PTSA
ST-590	8-Pin	4-20mA -	1#4-20mA for Fluorescent Polymer	Not Used
ST-710	7-Pin	4-20mA -	1#4-20mA for pH	2#4-20mA for Temperature
ST-711	7-Pin	4-20mA -	1#4-20mA for ORP	Not Used
ST-712	7-Pin	4-20mA -	1#4-20mA for pH	2#4-20mA for ORP
ST-720	7-Pin	4-20mA -	1#4-20mA for Conductivity	2#4-20mA for Temperature
ST-726	7-Pin	4-20mA -	1#4-20mA for Conductivity	2#4-20mA for Temperature
ST-750	7-Pin	4-20mA -	1#4-20mA for Color-Degrees	Not Used
ST-724	8-Pin	4-20mA -	1#4-20mA for Conductivity	2#4-20mA for Temperature
ST-725	8-Pin	4-20mA -	1#4-20mA for Conductivity	2#4-20mA for Temperature
ST-728	8-Pin	4-20mA -	1#4-20mA for Conductivity	2#4-20mA for Temperature
EM-500	7-Pin	4-20mA -	1#4-20mA for Chlorophyll-a	Not Used
ST-765SS-FCL	8-Pin	4-20mA -	1#4-20mA for Free Chlorine	2#4-20mA for pH
ST-765SS-CLO	8-Pin	4-20mA -	1#4-20mA for Chlorine Dioxide	2#4-20mA for pH
ST-765SS-Br	8-Pin	4-20mA -	1#4-20mA for Bromine	2#4-20mA for pH
ST-765SS-SO3	8-Pin	4-20mA -	1#4-20mA for Sulfite	2#4-20mA for pH
ST-765SS-DCL	8-Pin	4-20mA -	1#4-20mA for Free Chlorine	2#4-20mA for Sulfite
CR-300	8-Pin	4-20mA -	1#4-20mA for General Corrosion Rate	2#4-20mA for Pitting Index
CR-301	8-Pin	4-20mA -	1#4-20mA for General Corrosion Rate	2#4-20mA for Pitting Index
RT-50	8-Pin	4-20mA -	1#4-20mA for Selected Sensor Units	2#4-20mA for Temperature
RT-100	8-Pin	4-20mA -	1#4-20mA for Selected Sensor Units	2#4-20mA for Temperature

NOTE *For most OEM controller* dual *4-20mA input cards, the BLACK WIRE (4-20mA-) from the Pyxis sensor landed to input #1 4-20mA- will require a* jumper cable *to the input #2 4-20mA- terminal post of the dual input card, ensuring connectivity of 4-20mA- for the second analog input signal. Contact* service@pyxis-lab.com *for any technical questions or support.*

Sensor Setup & Calibration with uPyxis® Mobile App

1. Download **uPyxis®** Mobile App from **Apple App Store** or **Google Play**.

2. Turn on the BlueTooth® and location permission in the smart device

NOTE *Do not pair your mobile device BlueTooth® to uPyxis, the APP itself will do the pairing*

3. On **uPyxis®** Mobile App, pull down to refresh the list of available Pyxis devices. If the connection is successful, the PowerPack and its Serial Number (SN) will be displayed. Press on the **PowerPack image.**
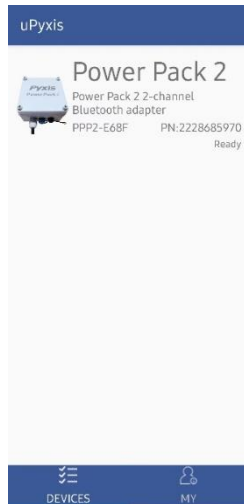
Step 6
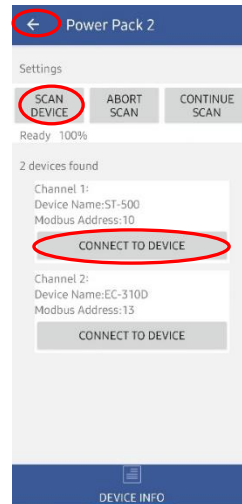
Step 4

Step 5

4. Press **Scan Device**, the powerpack will do a BlueTooth® scan and display a list of available sensors**.**

5. Press **Connect to Device** to pair each sensor.

6. Press the **Arrow Icon** to return to the previous interface**,** the paired sensors image will be displayed

7. Press on the image of desired sensor**.** uPyxis will default to Calibration page. User can view sensor readings, real-time trend chart and calibrate the sensor.