

DATTUS Pulse Output Overview

This document is intended to provide users with information regarding the pulse outputs of the Dattus meter. It is a general overview and focuses on the hardware aspects of the pulse outputs. For information on how to change the configuration of the pulse output via software, such as the pulse type, volume per pulse, the mode, or pulse width, please see the technical reference guide (user's manual).

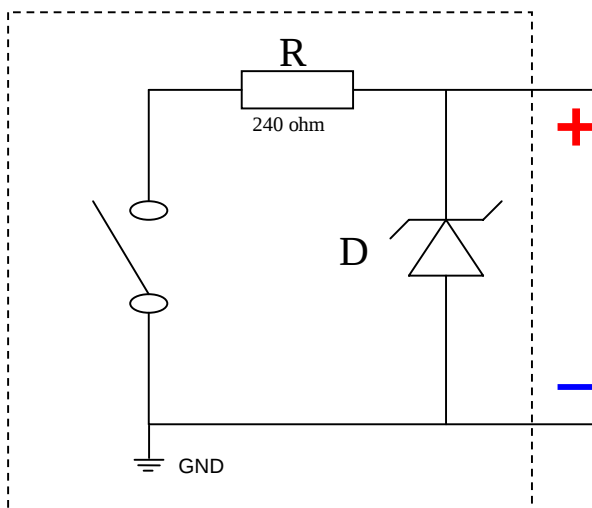
Output Channel Overview

The Dattus meter comes equipped with 4 pulse output channels as listed in the table below.

<u>Output Channel</u>	<u>Purpose</u>
Output 1	This channel is used primary for proving/calibration of the meter.
Output 2	This channel is the one that drives the LCD readout. Output 2 may be used, but is not flexible in terms of its configuration.
Output 3	This is a "customer" output channel. Output 3 & 4 have the most flexibility and are specifically for user purposes.
Output 4	This is a "customer" output channel. Output 3 & 4 have the most flexibility and are specifically for user purposes.

The configuration of the pulse outputs (as programmed from the factory) will be listed on the Certificate of Calibration that should be included with the shipment of the Dattus meter.

Electrical Schematic & Connection Specifications



The circuitry for all outputs on the Dattus meter has the following characteristics;

- It is non-isolated
- It is a dry contact
- Open drain N channel
- Has a contact resistance (R) of 240 ohm
- Common/Negative is connected to the meter body
- Protected from reverse current by zener diode (D)

Connection specifications for the outputs;

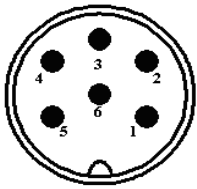
- DC voltage only, up to 35 VDC
- Up to 16 VDC if wishing to maintain intrinsic safety per UL 913 or CSA 22.2
- Maximum current of 25 mA

Output Schematic
Itron, Inc.
Gas Metering – U.S.
970 Highway 127 North
Owenton, Kentucky 40359-9302, USA

Phone: (502) 484-5747
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Hardware Setup

The connection for the pulse outputs on the Dattus meter is through a connector on the meter. This is a six pin binder connector on the face of the meter and is labeled as "1".



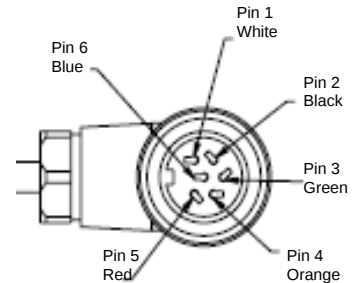
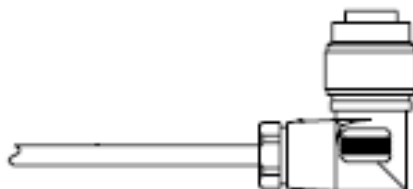
**Binder
Connector**

To use the pulse output, a pulse output cable is required. These cables have a binder connector on one end that screw onto the binder connector on the meter. On the other end are bare lead connections.

There are several pulse output cable assemblies to choose from. The standard pulse output cables are available in two cable lengths, 10' and 20' and are Itron part numbers 442461-005 and 442461-006, respectively.



Standard Pulse Output Cable



<u>Pin</u>	<u>Wire Color</u>	<u>Function</u>
1	White	Output 2 (+)
2	Black	Output 4 (+)
3	Green	Ground (-)
4	Orange	Output 3 (+)
5	Red	Output 1 (+)
6	Blue	Ground (-)



Both of the ground connections, blue and green wire connections are tied together in the Dattus meter to the meter body. All channels have a common ground, they are non-isolated.

Addressing "Special" Applications

For most applications, the standard output cable and setup should work. In some applications however, the requirements for the device being connected to the Dattus meter aren't directly compatible with the type of pulse offered by the Dattus meter. This is most likely to occur in industrial applications where a wide range of devices are used. Some of the reasons why a device may have problems;

- 240 ohm contact resistance is higher than device allowable maximum
- Device requires an isolated output
- Device provides AC voltage
- Device requires a wetted output

Itron offers a pulse cable option with a built-in MOSFET transistor that allows for the bypass of the contact resistance. This is a 3-wire connection, but will work in 2-wire connections (for purposes of contact resistance bypass). This cable may be used in conjunction with a power supply to address a wetted output application or a power supply and relay to address requirements for either an isolated output or an AC voltage application.

These cables (open source P – Channel MOSFET) are available in two cable lengths, 10' and 20' and are Itron part numbers 442461-007 and 442461-008, respectively.

Cables 442461-007 and 442461-008 only have connections for outputs 3 and 4. Output 3 is the only one with open source P – Channel MOSFET. Channel 4 is a standard output connection, same as above.

The table below shows the 4 bare lead wires and their function for these cables.

<u>Output</u>	<u>Wire Color</u>	<u>Function</u>
Output 3	Red	Power supply (+)
	White	Signal
Output 4	Black	Output 4 (+)
Common to both	Green	Power supply (-) and ground for Output 3 & 4



The maximum power supply voltage for this cable is 18V DC. This is due to the operation of the transistor and interaction with the zener diode in the output circuitry.

For applications where the device has a two wire connection (+ and -) but the contact resistance is the issue;

- Connect the red wire to + on the device
- Connect both the signal (white) and ground (green) to the negative/common.

For applications where the device voltage is above 18V, is AC, or requires an isolated output it is recommend to use a relay in conjunction with this cable with a separate power and connecting the device to the relay thereby separating the device circuit from the Dattus output circuit.

For assistance, please contact the factory at Dattus@itron.com, or call 502-484-5747 and ask for Dattus technical support. If assistance is required it will be helpful to have as much information as possible regarding the technical requirements for the device being connected to Dattus.