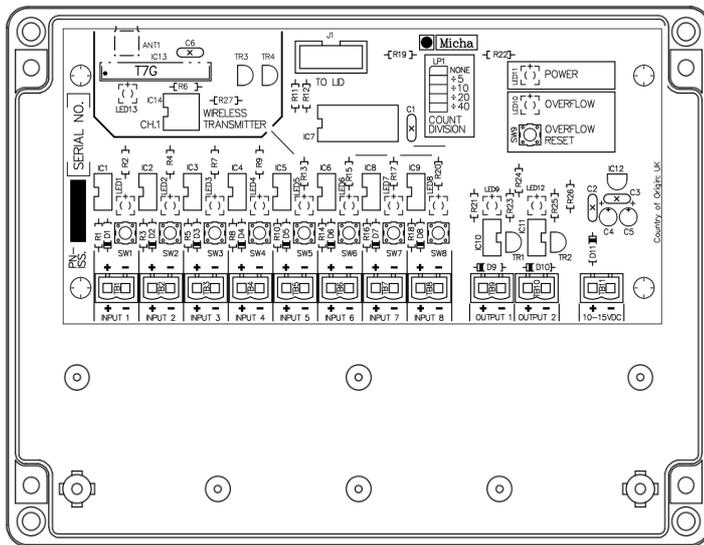


# **PGDU 8-INPUT PULSE COMBINER/DIVIDER** **WITH OPTIONAL WIRELESS TRANSMITTER**



The **Micha** 8-Input Pulse Combiner/Divider unit is designed to allow the integration of pulses from multiple energy meters into a single, controlled stream to give a single connection to a Power Generation Display Unit. In addition, the combined pulse rate can be divided by factors of 5, 10, 20 and 40, to reduce the total output pulse frequency.

Typically, the Micha display can accept a maximum input of 10Hz. In applications where connection to several meters could result in exceeding this rate, or if multiple signals can be combined to give a single wireless connection, the combiner can provide a simple and cost effective solution.

### **Theory of Operation:**

A small microprocessor accepts up to eight separate inputs which it stores and then repeats through two, isolated outputs. The maximum input rate on any input is 15Hz (SO compatible) but to maximise reliability, and to be compatible with the wireless link, the maximum output frequency is limited to 1 Hz. For example, if five input pulses are received simultaneously, the unit will output five single pulses over a period of five seconds.

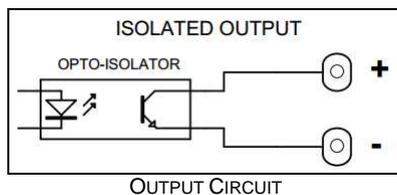
In installations where the total input rate from all inputs can exceed an average of 1Hz, the total count can be divided by a user-configurable factor. For example, if ten input pulses were received every three seconds, the installer can set a division of 10, and on receiving every tenth pulse, the unit would output one single pulse. As, in effect, this is dividing the pulse value by a factor of 10, the display input should be set so that each pulse it receives would have a value of ten times that which the combiner/divider receives. (e.g. if each energy meter outputs a 1Wh pulse, the display input pulse value should be set to 10Wh.) Note: ALL input pulses must have the same Wh value.

### **Connections:**

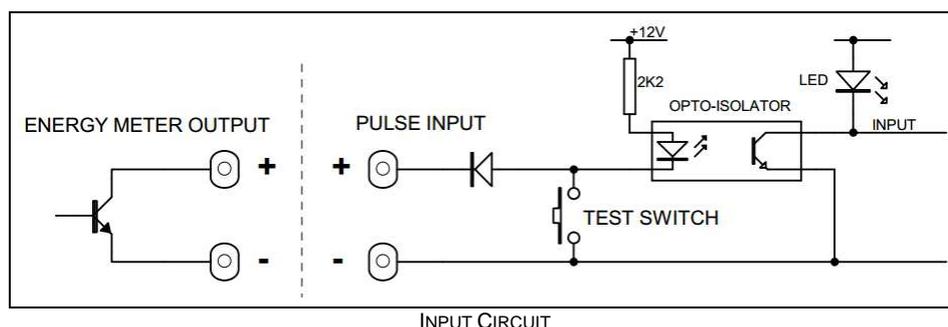
**Supply:** A 10-15VDC supply should be made to the Power In terminals, which are protected against a reverse-polarity supply. A suitable 'plug-top' PSU is supplied with the unit.

**LEDs:** A ribbon cable connects the LEDs on the lid to the control pcb and this can be disconnected during installation. Note that the lid LEDs are connected in parallel to those on the main circuit board and the unit will continue to operate normally with the cable unplugged.

**Outputs:** Two outputs are provided which switch in parallel, allowing additional displays, or connection to other equipment such as a BMS system to be made. These outputs are through opto-isolators and mimic the characteristics of the energy meter output.



**Inputs:** Inputs can be connected to an isolated energy meter output in any order, and any unused inputs can be left open-circuit. Each input includes a test switch and an LED to show incoming pulses.



Note: If the connection to the energy meter output is reversed, it is likely that the input LED will be illuminated continuously due to characteristics of output pulse transistor.

### Wireless Transmitter Option:

The Combiner/Diver unit is also available with a Wireless Transmitter option which can be paired with the **Micha** Receiver unit (PN: 101978). These have an expected range of up to 500M, but range is highly dependent on positioning and local conditions - reception will be affected by both internal and external walls of buildings. Both transmitter and receiver units should be mounted as high as possible with the aerial vertical, and away from any obstruction, particularly metal.

The wireless units use the popular 434MHz waveband which does not require a licence in the UK. The end user should be aware that other devices, such as wireless doorbells and security monitoring, may use a similar waveband and interaction may occur. To minimise interference, the transmitter is enabled only during data transmission, and KeeLoq (rolling code) encoding is utilised to prevent invalid data being received.

<b><u>General Specification:</u></b>		
<b>Part Number:</b>	<b>102 421</b> Combiner/Divider	<b>102 428</b> Combiner/Divider incl. Wireless
Supply Input Voltage :	10 – 15VDC	
Quiescent Supply Current :	15mA (0.1W)	
Max Supply Current :	60mA (0.4W)	
Operating Frequency :	n/a	434.525MHz EN 300-220 compliant
Operating Temperature Range :	0°C to +55°C	
Cable Glands :	M12 (Max cable diameter 7.0mm)	
Enclosure :	Light Grey Polycarbonate	
Dimensions :	200 x 150 x 55mm Fixing centres: 186mm x 119mm	

*Specification liable to change*