### **Product summary**

- 2 x pulse inputs (voltage free or digital)
- Maximum pulse rate is 250 Hz.
- A maximum of 65,000 pulses can be counted every logging interval. When the maximum count is reached the counter rolls over and continues counting.
- At the (random) transmission time, the value of the pulse count register is transmitted.
- The pulse input can be voltage input or voltage-free contacts (<1V = low, >2.7V = high).
- The counter increments on the falling edge of a pulse:

Input B

Signal -ve

SO SO + O A B 6V



### Wired connections

Input A

Signal -ve

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### External power in

Range 6V to 9V DC (regulated). Power supply is MP9U from Eltek.

> When external power is applied (and if greater than the internal battery voltage), the external power is used. If external power fails the internal batteries will power the transmitter.



### Scaling (adding Engineering Units) to the GC-62

Ensure that the device connected to the GC-62 transmitter output does not exceed 250 pulses per second and that the number of pulses does not exceed 65,000 pulses per LOGGING interval.

### Using Darca Plus to configure the transmitter

In the Squirrel Channel to Transmitter Channel Assignments window:

### Check Sensor-On time is 0 Click Set Log Int & Preferred Tx Int and follow prompts Squirrel Channel to Transmitter Channel Assignments Heln Refresh Next Transmitter >> **Close Transmitter Connections** Transmitter: Tx-17523 Sensor-On time (s): 0 Set Sensor On Time Delete All Tx Channels Total transmitter channels: 2 Used transmitter Channels: 0 User Preferred Tx Int: 00:00:03 -> Set Log Int & Preferred Tx Int Set/Delete Selected Tx Channels Free transmitter Channels: 2 Tx Interval: 00:05:00 Set Tx Interval Auto Set (All Channels + Interval)-User Preferred Battery Level (%): 100 Match Current Squirrel Start Channel: 13 Channel: Update Channel Allocation Tx Chan: Range: Sq Chan: Match: Alarms: Hi: Lo: Α • 2 Set Channel Delete Channel Edit EU Range в ▼ 3 Set Channel Delete Channel Edit EU Range Not Configured -Squirrel: K01139-10380

| - 🚰 S.  | ave Configurati | on    | 🔏 Delet    | e Cha | nnels 📜 T      | ransmitter Setup    | Send to Squi      | rrel     |          |
|---------|-----------------|-------|------------|-------|----------------|---------------------|-------------------|----------|----------|
| Channel | Ident           | Input | Range      | Unit  | Transmitter ID | Transmitter Channel | Transmit Interval | Hi Alarm | Lo Alarm |
| 1       | Channel 001     | State | 0.0 to 1.0 |       | 17459          | A                   | 00:00:03          |          | 0.0      |
| 2       |                 |       |            |       |                |                     |                   |          |          |
| 0       |                 |       |            |       |                |                     |                   |          |          |

### Worked example with a PRO1TE connected to input A

PRO1TE is an electricity energy meter with a pulse output providing 2000 pulses /1000Wh. This equates to 1 pulse per 0.5Wh. 0.5 will be the value **B** in the formula below, and one decimal point resolution is required.

# In the **Squirrel Channel to Transmitter Channel Assignments** window, click **Set Channel** and then **Edit EU Range** for the appropriate transmitter channel.

| (7) Squirrel Channel to Transmitter Channel Assignments               |   |               |                |   |               |        |         |     |     |  |  |  |
|---|---|---------------|----------------|---|---------------|--------|---------|-----|-----|--|--|--|
| Help  | Next Transmitter >>   |               |                | Close Tr  |               |        |         |     |     |  |  |  |
| Transmitter: Tx-17523   |   |               |                |   |               |        |         |     |     |  |  |  |
| Sensor-On time (s): 0   | Total transmitter channels: 2<br>Used transmitter Channels: 0<br>Free transmitter Channels: 2<br>Battery Level (%): 100 |               |                | Dele  |               |        |         |     |     |  |  |  |
| User Preferred Tx Int: 00:00:03                                       |   |               |                | Set/Delet   |               |        |         |     |     |  |  |  |
| Tx Interval: 00:05:00   |   |               |                | Auto Set (All Channels + Interval)-User Preferred |               |        |         |     |     |  |  |  |
|   |   |               |                |   |               |        |         |     |     |  |  |  |
| Channel: Current Squirrel Start Channel: 13 Update Channel Allocation |   |               |                |   |               |        |         |     |     |  |  |  |
| Tx Chan: Range:   | Sq Chan:  |               |                |   |               | Match: | Alarms: | Hi: | Lo: |  |  |  |
| A [EU Range] Pulse Count (0.0   | 00 to 100.00 % ) 🔽 🔽  | ▼ Set Channel | Delete Channel |   | Edit EU Range | j      |         |     |     |  |  |  |
| B Not Configured  | ▼ 3   | ▼ Set Channel | Delete Channel |   | Edit EU Range |        |         |     |     |  |  |  |

- 1. Ensure **Hardware Range** is as shown:
- 2. Set **Maximum** to 32500
- 3. Leave or set **Minimum** at 0
- 7. Check Sample is range as required

6. To calculate **Count Limit**, use the formula Count Limit =  $A / (B \times C)$ , where:

- $\mathbf{A} = Maximum (32500)$
- $\mathbf{B} = \text{Value per pulse (0.5Wh)}$

 $\mathbf{C} = \text{Factor calculated from DP}$ 

Position:

| DP Position | С    |  |  |  |  |  |
|-------------|------|--|--|--|--|--|
| 0           | 1    |  |  |  |  |  |
| 1           | 10   |  |  |  |  |  |
| 2           | 100  |  |  |  |  |  |
| 3           | 1000 |  |  |  |  |  |
| etc.        | etc. |  |  |  |  |  |

 $= 32500 / (0.5 \times 10) = 6500$ 

| 🖓 EU Range Selector: Channel A 👘 💼 📧                        |   |
|---|---|
| Hardware Range:   |   |
| Pulse Count (0 to 65000 pulse )                             |   |
| Maximum: 32500 Units: Wh                                    | 4. Overwrite <b>Units</b> as appropriate e.g. Wh                        |
| Minimum: 0 DP Position: 1   Sample: 0.0 to 3250.0 Wh Helper | 5. In <b>DP Position</b> ,<br>Enter number of<br>decimal points needed. |
| Count Limit: 6500 Reset Limit                               |   |
| Cancel Help   | ao not use  |

Click **OK** to close the window when you are finished.

Note: to redo the above example with the units as  ${\bf kWh}$  instead of  ${\bf Wh}$ :

- The value per pulse is now 0.0005 kWh.
- The **DP Position** should now be set to 4 because we're scaling everything down by 1000.
- Thus, the **Count Limit** remains the same:

 $32500 / (0.0005 \times 10000) = 6500$ 

# Your new configuration will appear in the **Squirrel Channel to Transmitter Channel Assignments** window:

| 🕅 Squirrel Channel to Transmitter Channel Assignments                         |             |             |                                   |      |                |                     |  |                   |                               |   |       |             |         |  |     |
|---|-------------|-------------|-----------------------------------|------|----------------|---------------------|--|-------------------|-------------------------------|---|-------|-------------|---------|--|-----|
| Help  |             |             |                                   |      |                | Next Transmitter >> |  |                   | Close Transmitter Connections |   |       |             |         |  |     |
| Transmitter: Tx-17523   |             |             |                                   |      |                |                     |  |                   |                               |   | Dolo  | to All Tu C | hannala |  |     |
| User Preferred Tx Int: 00:00:03   |             |             | -> Set Log Int & Preferred Tx Int |      |                |                     | Used transmitter Channels: 2<br>Used transmitter Channels: 0 |                   |                               | Set/Delete Selected Tx Channels                   |       |             |         |  |     |
| Ma  | atch        | 00:05:00 📫  | Set Tx Interval                   |      |                |                     | Battery Level (%): 100                                       |                   |                               | Auto Set (All Channels + Interval)-User Preferred |       |             |         |  |     |
| Channal: Durrent Schimel Start Channel To                                     |             |             |                                   |      |                |                     |  |                   |                               |   |       |             |         |  |     |
| Circuit   |             |             |                                   |      |                |                     |  | e Unannei Aliocai | ion                           |   |       |             | 1.      |  | 1 1 |
| Tx Chan: Range: Sq Chan:  |             |             |                                   | (a   |                |                     |  |                   | Match:                        | Alarms:   | Hi:   | Lo:         |         |  |     |
| A [EU Range] Pulse Count (0.0 to 3250.0 Wh ) • 2 •                            |             |             |                                   |      | Set Channel    | Delete Channel      | Meter  | Edit EU F         | Range                         |   |       | _           |         |  |     |
| B Not Configured 3  |             |             |                                   |      |                |                     | Set Channel  | Delete Channel    |                               | Edit EU F   | Range | ,I⊻         |         |  |     |
| Squirrel: K01139-10380  |             |             |                                   |      |                |                     |  |                   |                               |   |       |             |         |  |     |
| 🖀 Save Configuration 🐰 Delete Channels 👔 Transmitter Setup 🔄 Send to Squirrel |             |             |                                   |      |                |                     |  |                   |                               |   |       |             |         |  |     |
| Channel   | Ident       | Input       | Range                             | Unit | Transmitter ID | Transm              | nitter Channel   | Transmit Interva  | I Hi Alarm                    | Lo Alarm  |       |             |         |  |     |
| 1   | Channel 001 | State       | 0.0 to 1.0                        |      | 17459          | A                   |  | 00:00:03          |                               | 0.0   |       |             |         |  |     |
| 2   | Channel 002 | Pulse Count | 0.0 to 3250.0                     | Wh   | 17523          | A                   |  | 00:05:00          |                               |   |       |             |         |  |     |

Check that the Squirrel Channel and Tx Channel detail is as required. Click **Next Transmitter** to set up additional transmitter channels or **Close Transmitter Connections** if you have set up all the channels you require.

### **Technical note**

Logger pulse channels are not reset to zero when logging is started. This is so that during stop/download/reset/restart of the logger, counts from connected sensors are not lost. Consequently, when a system is first started after configuration or a period of no use, no transmissions have been received from the transmitters, so the first reading logged on a pulse count channel will be meaningless. If you want the first recorded value to be meaningful, then do the following:

1. Start the logger logging

2. Wait for at least 2 transmission intervals so that a value is definitely received from each pulse transmitter channel

- 3. Stop logging
- 4. Reset and restart the logger

The first value logged will now represent the pulses counted between the first two received transmissions.



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