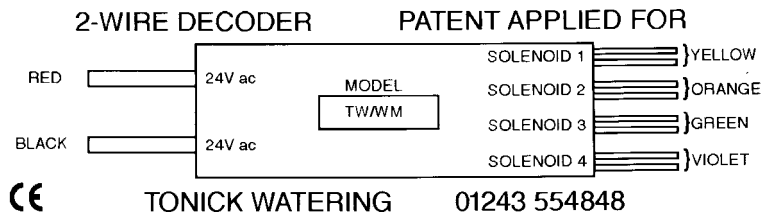


## ADDITIONAL DATA ON THE TONICK RANGE OF DECODERS

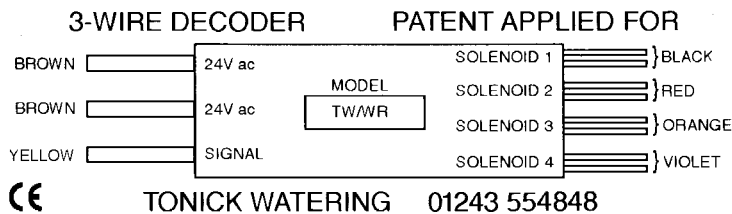
### TW/WM Replaces 'Watermation Mk 1 or Mk 2'

Body Colour: White  
 Power Consumption: Typically 7mA at 26V RMS  
 Voltage Range: 19V RMS to 42V RMS, 50-60Hz Sinusoidal  
 Max. Output: 550mA RMS steady-state. (Typically powers 2 solenoids).  
 Signaling System: Modulation of AC power.  
 Decoder Address Range: 1 – 127 (Use a Tonick 'Watermation' programmer)



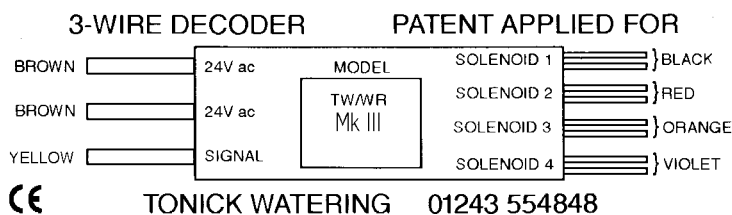
### TW/WR Replaces 'Wright Rain' or 'Primetime' or 'Robydome'

Body Colour: Grey  
 Power Consumption: Typically 12mA at 26V RMS  
 Voltage Range: 19V RMS to 42V RMS, 50-60Hz Sinusoidal  
 Max. Output: 550mA RMS steady-state. (Typically powers 2 solenoids).  
 Signaling System: Pulse Width Modulation on signal wire.  
 Decoder Address Range: 1 – 254 (Use a Tonick 'Wright Rain' programmer)



### TW/WRMkIII Replaces 'Wright Rain Mark 3' or 'Robydome Mark 3'

Body Colour: Grey  
 Power Consumption: Typically 7mA at 26V RMS  
 Voltage Range: 19V RMS to 42V RMS, 50-60Hz Sinusoidal  
 Max. Output: 550mA RMS steady-state. (Typically powers 2 solenoids).  
 Signaling System: Asynchronous serial data on signal wire.  
 Decoder Address Range: 1 – 254 (must be specified at time of ordering)

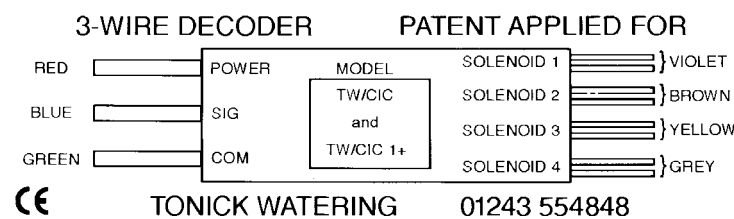


**TW/CIC Replaces 'CIC 1' or 'CIC 4' (must use a CIC 1/4 programmer)**

Body Colour: Black  
Power Consumption: Typically 4mA at 26V RMS  
Voltage Range: 19V RMS to 42V RMS, 50-60Hz Sinusoidal  
Max. Output: 550mA RMS steady-state. (Typically powers 2 solenoids).  
Signaling System: Asynchronous serial data on signal wire.  
Decoder Address Range: 1 – 99 (Use a Tonick 'CIC 1 & 4' programmer)

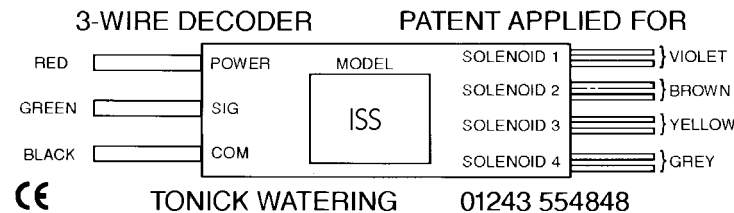
**TW/CIC Replaces 'CIC 1+' (same decoder as above, but must use a CIC1+ programmer)**

Body Colour: Black  
Power Consumption: Typically 4mA at 26V RMS  
Voltage Range: 19V RMS to 42V RMS, 50-60Hz Sinusoidal  
Max. Output: 550mA RMS steady-state. (Typically powers 2 solenoids).  
Signaling System: Asynchronous serial data on signal wire.  
Decoder Address Range: 1 – 99 on zone 1, 1 – 99 on zone 2 (Use a Tonick 'CIC 1+' programmer)



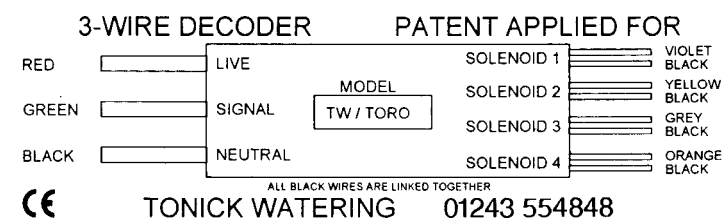
**TW/ISS Replaces 'ISS Aquaflo' (To replace 9 o/ps, needs 2 TW/ISS-4 and 1 TW/ISS-1)**

Body Colour: White  
Power Consumption: Typically 7mA at 26V RMS  
Voltage Range: 19V RMS to 42V RMS, 50-60Hz Sinusoidal  
Max. Output: 550mA RMS steady-state. (Typically powers 2 solenoids).  
Signaling System: Asynchronous serial data on signal wire.  
Decoder Address Range: 1 – 9 (Use a Tonick 'ISS' programmer)



**TW/TORO Replaces 'TORO SC3000'**

Body Colour: Brown  
Power Consumption: Typically 4mA at 26V RMS  
Voltage Range: 19V RMS to 42V RMS, 50-60Hz Sinusoidal  
Max. Output: 550mA RMS steady-state. (Typically powers 2 solenoids).  
Signaling System: Modulated AC on signal wire.  
Decoder Address Range: 1 – 99 (Use a Tonick 'Toro' programmer)



## **Connecting To Solenoids That Are Commoned.**

The Tonick range of decoders has a pair of wires for each solenoid output. When installed adjacent to the solenoid, one wire of the decoder output is connected to one wire of the solenoid; the polarity is unimportant.

However, if two or more solenoids are connected through multi-core cable, where one side of each solenoid is connected to a common return, then the polarity of the decoder connection to the multi-core is very important.

In each Tonick decoder, there is an electronic switch in just one solenoid output lead, whilst the other solenoid lead is connected directly to one of the decoder's power leads. This solenoid output **MUST** be connected to the solenoid common in the multi-core cable.

To identify the common in the decoder, use one or other of the following methods:

Place one side of a multi-meter on one of the decoder power leads. Using the Ohms range, look for a low resistance (2 Ohms or less) between this and first one, then the other of the decoder's solenoid outputs. If none, then change the connection to the other decoder power lead and repeat. The solenoid output lead with the low resistance connection is the 'common'.

Place one side of a multi-meter on one of the decoder solenoid leads. Using the Ohms range, look for a low resistance (2 Ohms or less) between this and one or other of another pair of the decoder's solenoid outputs. If none, then change the connection to the other of the original pair and repeat. The solenoid output lead with the low resistance connection to the other solenoid outputs is the 'common'.

The common solenoid leads, so identified, should be marked, joined together and wired to the multi-core wire that is connected to the solenoid commons. Usual practice is to tie a knot in the wire. Any unused decoder output commons must be protected from contact with water or the ground, but of course, may be connected together.

## **Decoder Date-codes.**

Tonick decoders are date-coded with one capital letter and one number. This is engraved into the plastic case near one end cap. It can be interpreted as follows.

**A** stands for January, February or March.

**B** stands for April, May or June.

**C** stands for July, August or September.

**D** stands for October, November or December.

The number in the date-code pair is the last number of the year.

e.g. **A7** was made in January, February or March 1997.

### **Lightning Warranty.**

Tonick provide an exchange replacement decoder in the event that any are destroyed by lightning during the warranty period. (At the time of writing, the warranty period is 5 years). This warranty is confined to the exchange of like-for-like and does not include removal and refitting of the replacement.

To avoid unnecessary delay in receiving replacements, Tonick will send out new decoders before receipt of the damaged ones. However, when reporting the loss, a Returns Authorisation Number (R.A.N.) must be obtained from Tonick Sales (01269 832325). The damaged decoders then should be returned, clearly identified with that R.A.N., before 60 days have elapsed. If not, after that time, an invoice will be raised for the full value of the decoders and their carriage.

Tonick reserve the right to refuse returned decoders that do not have a valid R.A.N.

**TONICK WATERING LTD**  
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**Maes-y-Bont**  
**Cross Hands**  
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