



**ENiGMA Industrial EN-22**

**This Specification covers the Digital Electronic Water DeScaler, suitable for pipe outside diameter 8-22mm, manufactured for ETC by Macey Controls**

**OUTPUT**

12 volts peak to peak (Open Circuit) square wave with minimal rise time. Nominal signal current; 25mA. A high quality signal programmable processing chip is used to control both output and indicators. The custom programmed microprocessor generates a Frequency Modulated output signal covering 700 to 3,000hz, with a repetition rate of seven times per second. Standard unit output is capable of treating two independent pipes simultaneously. On request, units can be manufactured to treat any number of pipes simultaneously, providing pipe positioning and local conditions allow.

**POWER SUPPLY**

Power supply input 240 volt, 50/60 hz at 3Watts. Mains cable is three core cable, rated 7Amps and exits unit via watertight gland.

**FEATURES**

**Power on / Unit Status LED** A red LED flashes when power is connected. The LED remains illuminated once the signal cable is connected. If signal cable is connected and red LED flashes then the unit is faulty.

**ENCLOSURE**

Enclosure, manufactured from high grade thermoplastic. Overall outside dimensions (mm) 165(h) x 180(w) x 65(d). A product information label, containing CE and other relevant EU / International Standards marking with contact details and serial number is affixed to top of enclosure.

**WEIGHT**

Assembled and ready for shipping, excluding packaging and sundry items, unit weight is 0.7kg

**SIGNAL CABLE CONNECTORS**

A spring loaded cable connection block is fitted in the enclosure's base, to facilitate the connection of the signal cable.

**DESIGNED FOR SAFETY**

Unit conforms to European Countries' manufacturing standards and complies with CE and IEC335 requirements. The output is safe to both personnel and sensitive electronic equipment. There is no electrical contact with the pipe or water system.



### ENiGMA Industrial EN-42

This Specification covers the Digital Electronic Water DeScaler, suitable for pipe outside diameter 25-42mm, manufactured for ETC by Macey Controls

#### OUTPUT

12 volts peak to peak (Open Circuit) square wave with minimal rise time. Nominal signal current; 50mA. A high quality signal programmable processing chip is used to control both output and indicators. The custom programmed microprocessor generates a Frequency Modulated output signal covering 700 to 3,000hz, with a repetition rate of seven times per second. Standard unit output is capable of treating two independent pipes simultaneously. On request, units can be custom-manufactured to treat any number of pipes simultaneously, providing pipe positioning and local conditions allow.

#### POWER SUPPLY

Switchable power supply input 110/240 volt, 50/60 Hz at 6Watts. A spring loaded cable connection block is fitted internally in the enclosure's bottom compartment, to facilitate the connection of the mains cable. This connector is positioned to allow easy connection.

#### FEATURES

**Bar Graph.** Green LED bar graph, (Approx. size(mm) 10x25), fitted flush to front panel.

When connected to mains supply bar graph will have the lowest LED on, confirming 12 volt internal supply is present, the remaining LEDs will cycle, (i.e. illuminate cumulatively one after the other), to indicate that the unit is working correctly and that the coil is connected, (total cycle will complete about 3 times a second). If the signal coil is disconnected cycling LEDs, (only), will extinguish.

**BMS Connection.** A reed relay (or equivalent) connection is provided to allow for connection to external lamps, bells, or computer Building Management Systems. A watertight cable gland on base of enclosure is provided for remote connection cable to pass through.

#### SIGNAL CABLE CONNECTORS

A spring loaded cable connection block is to be available internally in the enclosure's bottom compartment, to facilitate the connection of the signal cable. This connector is to be positioned to allow easy connection.

Two watertight cable glands on base of enclosure are provided for entry of signal cable.

#### ENCLOSURE

Bopla Enclosure, made of high grade thermoplastic. Overall outside dimensions (mm); 185(h) x 195(w) x 105(d). The front panel, behind a hinged perspex cover, is either silk screened with ETC artwork or a high quality label is placed over the panel. A product information label, containing CE and other relevant Standards marking with contact details and serial number is affixed to top of enclosure.

#### WEIGHT

Assembled and ready for shipping, excluding packaging and sundry items, unit weight is 1.1kg

#### DESIGNED FOR SAFETY

Unit conforms to European Countries' manufacturing standards and complies with CE and IEC335 requirements. The output is safe to both personnel and sensitive electronic equipment. There is no electrical contact with the pipe or water system.

#### WARNING

**ISOLATE POWER BEFORE REMOVING THE BOTTOM COMPARTMENT COVER**



### ENiGMA Industrial EN-100

**This Specification covers the Digital Electronic Water DeScaler, suitable for pipe outside diameter 54-100mm, manufactured for ETC by Macey Controls**

#### OUTPUT

12 volts peak to peak (Open Circuit) square wave with minimal rise time. Nominal signal current; 100mA. A high quality signal programmable processing chip is used to control both output and indicators. The custom programmed microprocessor generates a Frequency Modulated output signal covering 700 to 3,000hz, with a repetition rate of seven times per second. Standard unit output is capable of treating two independent pipes simultaneously. On request, units can be custom-manufactured to treat any number of pipes simultaneously, providing pipe positioning and local conditions allow.

#### POWER SUPPLY

Switchable power supply input 110/240 volt, 50/60 Hz at 7Watts. A spring loaded cable connection block is fitted internally in the enclosure's bottom compartment, to facilitate the connection of the mains cable. This connector is positioned to allow easy connection.

#### FEATURES

**Bar Graph.** Green LED bar graph, (Approx. size(mm) 10x25), fitted flush to front panel. When connected to mains supply bar graph will have the lowest LED on, confirming 12 volt internal supply is present, the remaining LEDs will cycle, (i.e. illuminate cumulatively one after the other), to indicate that the unit is working correctly and that the coil is connected, (total cycle will complete about 3 times a second). If the signal coil is disconnected the cycling LEDs, (only), will extinguish.

**BMS Connection.** A reed relay (or equivalent) connection is provided to allow for connection to external lamps, bells, or computer Building Management Systems. A watertight cable gland on base of enclosure is provided for remote connection cable to pass through.

#### SIGNAL CABLE CONNECTORS

A spring loaded cable connection block is to be available internally in the enclosure's bottom compartment, to facilitate the connection of the signal cable. This connector is to be positioned to allow easy connection. Two watertight cable glands on base of enclosure are provided for entry of signal cable.

#### ENCLOSURE

Bopla Enclosure, made of high grade thermoplastic. Overall outside dimensions (mm); 210(h) x 240(w) x 120(d). The front panel, behind a hinged perspex cover, is either silk screened with ETC artwork or a high quality label is placed over the panel. A product information label, containing CE and other relevant Standards marking with contact details and serial number is affixed to top of enclosure.

#### WEIGHT

Assembled and ready for shipping, excluding packaging and sundry items, unit weight is 1.3kg

#### DESIGNED FOR SAFETY

Unit conforms to European Countries' manufacturing standards and complies with CE and IEC335 requirements. The output is safe to both personnel and sensitive electronic equipment. There is no electrical contact with the pipe or water system.

#### WARNING

**ISOLATE POWER BEFORE REMOVING THE BOTTOM COMPARTMENT COVER**



Environmental Treatment Concepts  
1 May 2010

### ENiGMA Industrial EN-150

This Specification covers the Digital Electronic Water DeScaler, suitable for pipe outside diameter 108-150mm, manufactured for ETC by Macey Controls

#### OUTPUT

12 volts peak to peak (Open Circuit) square wave with minimal rise time. Nominal signal current; 150mA. A high quality signal programmable processing chip is used to control both output and indicators. The custom programmed microprocessor generates a Frequency Modulated output signal covering 700 to 3,000hz, with a repetition rate of seven times per second. Standard unit output is capable of treating two independent pipes simultaneously. On request, units can be custom-manufactured to treat any number of pipes simultaneously, providing pipe positioning and local conditions allow.

#### POWER SUPPLY

Switchable power supply input 110/240 volt, 50/60 Hz at 8Watts. A spring loaded cable connection block is fitted internally in the enclosure's bottom compartment, to facilitate the connection of the mains cable. This connector is positioned to allow easy connection.

#### FEATURES

**Bar Graph.** Green LED bar graph, (Approx. size(mm) 10x25), fitted flush to front panel.

When connected to mains supply bar graph will have the lowest LED on, confirming 12 volt internal supply is present, the remaining LEDs will cycle, (i.e. illuminate cumulatively one after the other), to indicate that the unit is working correctly and that the coil is connected, (total cycle will complete about 3 times a second). If the signal coil is disconnected cycling LEDs, (only), will extinguish.

**BMS Connection.** A reed relay (or equivalent) connection is provided to allow for connection to external lamps, bells, or computer Building Management Systems. A watertight cable gland on base of enclosure is provided for remote connection cable to pass through.

#### SIGNAL CABLE CONNECTORS

A spring loaded cable connection block is to be available internally in the enclosure's bottom compartment, to facilitate the connection of the signal cable. This connector is to be positioned to allow easy connection.

Two watertight cable glands on base of enclosure provide entry of signal cable.

#### ENCLOSURE

Bopla Enclosure, made of high grade thermoplastic. Overall outside dimensions (mm); 185(h) x 195(w) x 105(d). The front panel, behind a hinged perspex cover, is either silk screened with ETC artwork or a high quality label is placed over the panel. A product information label, containing CE and other relevant Standards marking with contact details and serial number is affixed to top of enclosure.

#### WEIGHT

Assembled and ready for shipping, excluding packaging and sundry items, unit weight is 1.7kg

#### DESIGNED FOR SAFETY

Unit conforms to European Countries' manufacturing standards and complies with CE and IEC335 requirements. The output is safe to both personnel and sensitive electronic equipment. There is no electrical contact with the pipe or water system.

#### WARNING

**ISOLATE POWER BEFORE REMOVING THE BOTTOM COMPARTMENT COVER**



## SPEC AWAITING COMPLETION (newly designed)

ENiGMA Industrial EN-200

This Specification covers the Digital Electronic Water DeScaler, suitable for pipe outside diameter 150-200mm, manufactured for ETC by Macey Controls

### OUTPUT

12 volts peak to peak (Open Circuit) square wave with minimal rise time. Nominal signal current; 200mA. A high quality signal programmable processing chip is used to control both output and indicators. The custom programmed microprocessor generates a Frequency Modulated output signal covering 700 to 3,000Hz, with a repetition rate of seven times per second. Standard unit output is capable of treating two independent pipes simultaneously. On request, units can be custom-manufactured to treat any number of pipes simultaneously, providing pipe positioning and local conditions allow.

### POWER SUPPLY

Switchable power supply input 110/240 volt, 50/60 Hz at 10Watts. A spring loaded cable connection block is fitted internally in the enclosure to facilitate the connection of the mains cable. This connector is positioned to allow easy connection.

### FEATURES

~~**Bar Graph.** Green LED bar graph, (Approx. size(mm) 10x25), fitted flush to front panel.~~

~~When connected to mains supply bar graph will have the lowest LED on, confirming 12 volt internal supply is present, the remaining LEDs will cycle, (i.e. illuminate cumulatively one after the other), to indicate that the unit is working correctly and that the coil is connected, (total cycle will complete about 3 times a second). If the signal coil is disconnected the cycling LEDs, (only), will extinguish.~~

~~**BMS Connection.** A reed relay (or equivalent) connection is provided to allow for connection to external lamps, bells, or computer Building Management Systems. A watertight cable gland on base of enclosure is provided for remote connection cable to pass through.~~

### SIGNAL CABLE CONNECTORS

A spring loaded cable connection block is to be available internally in the enclosure to facilitate the connection of the signal cable. This connector is to be positioned to allow easy connection. Two watertight cable glands on base of enclosure for entry of signal cable.

### ENCLOSURE

~~Quality enclosure, made of high grade thermoplastic. Overall outside dimensions (mm); 185(h) x 195(w) x 105(d). The front panel, behind a hinged perspex cover, is either silk screened with ETC artwork or a high quality label is placed over the panel. A product information label, containing CE and other relevant Standards marking with contact details and serial number is affixed to top of enclosure.~~

### WEIGHT

~~Assembled and ready for shipping, excluding packaging and sundry items, unit weight is 1.1kg~~

### DESIGNED FOR SAFETY

Unit conforms to European Countries' manufacturing standards and complies with CE and IEC335 requirements. The output is safe to both personnel and sensitive electronic equipment. There is no electrical contact with the pipe or water system.

### WARNING

**ISOLATE POWER BEFORE OPENING THIS UNIT**

**Commercial In Confidence**