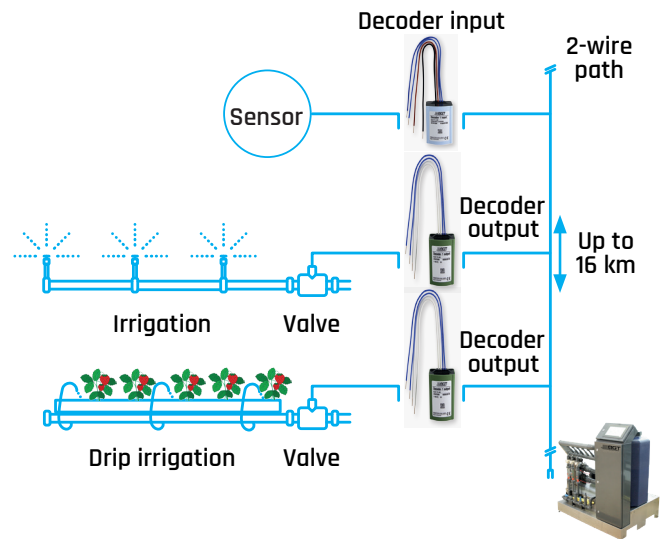# DECODERS - THE INTELLIGENT LINK

- ✓ The intelligent link between AMI Penta mixer and field components, such as sensors & valves
- ✓ "Fly by wire" - steady two-way high speed communication
- ✓ Valve feedback after each irrigation
- ✓ Up to 16 km reach - ideal for large greenhouse sites, open fields and tunnels
- ✓ Easy system expansion - simply splice into the 2-wire line and add decoders
- ✓ Multiple possibilities for decoder retrofit - reducing installation costs
- ✓ Up to 100 valves on a standard system - can be expanded if needed

Decoder input

Sensor

2-wire path

Decoder output

Up to 16 km

Decoder output

Irrigation   Valve

Drip irrigation   Valve

2-Wire high-end decoders - true two-way high speed communication

Decoders delivering steady and high speed communication between the AMI Penta irrigation & fertilizer mixer and sensors in your fields or greenhouses – providing important real-time data which the AMI Penta mixer understands and acts on.

Commands can include signal for starting and stopping irrigation valves. The output decoders send information to AMI Penta that the valve is open as expected. The same thing happens when the valve has to close. In case, the valve fails, AMI Penta will receive a message which triggers an alarm. This gives you the opportunity to react in a timely manner.

Via the sensor decoders, measurements from e.g. the moist, drain and EC sensor are sent to AMI Penta. This allows the irrigation to be adjusted and optimal irrigation is achieved.

- The decoder system has a reach of up to 16 km, making it the ideal system for accurate irrigation for large commercial nurseries with several greenhouses and for outside production, such as production of soft fruit in tunnels.
- Decoders come in various sizes and types, including output and input decoders and lightning protection decoders.
- Adding decoders are done easily by a plug-and-play recognition in existing AMI Penta mixers.

How the system works
- The system consists of an interface and 2-wire cable, and the desired number of input decoders for sensors and output decoders for valves, which can be connected to the AMI Penta Mixer.
- Decoders are easily installed by splicing into anywhere on the 2-wire cable.
- Valves must be 24 V AC.
- By using a full set-up you get lightning protection in the whole area.

You can install up to 100 valves or sensors and can always add or remove decoders – you do not need to install decoders in a particular sequence, as they each come with a unique ID number that you add to the AMI Penta before use.

Flexible system saving cable and installation time
Only having one 2-wire cable significantly saves cable and installation time, while the 2-wire system also gives the flexibility to easily expand the system at a later point.

DGT by senmatic

SPECIFICATIONS / DECODERS

Interface - specifications

Mounting:	In fertilizer mixer
Power supply:	48 V DC
Length of 2-wire:	Up to 16 km
Number of valve decoders:	100 per interface
Number of 2-wires:	2 lines per interface
Item number:	590500

Output decoder - specifications

Mounting:	In box or buried
Solenoid voltage:	24 V AC
Outputs:	1, 2, 4 or 6 outputs
Ambient temperature:	0 - 50° C / 32 - 122° F
IP rating:	IP67
Dimensions H x W x D:	1 output: 65 x 45 x 36 mm 2, 4 and 6 outputs: 80 x 74 x 47 mm
Item numbers:	1 output: 590510 *2 output: 590511 *4 output: 590512 *6 output: 590513 *Incl. Lightning protection

Ways of making a setup of the decoder system

The cable formation, which must be in the field or in the greenhouse, can be designed in two ways - either as a star or a loop formation.

Star formation is characterized by one cable coming from the AMI Penta and ending blindly with a lightning protection at the end of the cable. Splits can be performed anywhere, it is necessary.

Loop formation is characterized by the cable coming from and going back to the AMI Penta. Splits can be made where requested.

The advantage is that the line of communication can be greatly expanded.

Input decoder - specifications

Mounting:	In box or buried
Power source for sensor:	0 - 10 V, 4 - 20 mA or pulse
Input:	From one sensor - analogue or digital
Ambient temperature:	0 - 50° C / 32 - 122° F
IP rating:	IP67
Dimensions H x W x D:	65 x 45 x 36 mm
Item number:	590520

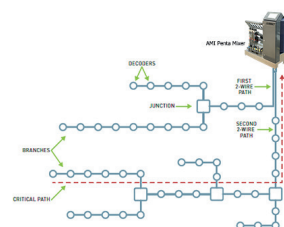## Lightning protection decoder - specifications

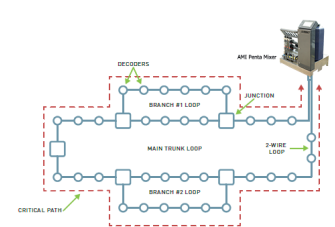|	
Mounting:	In box or buried
Surge protection:	Up to 10 kA
Ambient temperature:	0 - 50° C / 32 - 122° F
IP rating:	IP67
Distance between SP decoders:	Max. 150 m and one at each end of 2-wire
Dimensions H x W x D:	65 x 45 x 36 mm
Item number:	590530

Loop or star configuration - specifications

	Loop	Star
Nominal wire size	Km	Km
2.0 mm²	9.6	2.4
2.5 mm²	12.0	3.0
3.0 mm²	14.4	3.6
3.5 mm²	16.8	4.2

The cable needs to be solid core and double insulation.

Star configuration   **Loop configuration**