



**INNOVATIVE SOLUTIONS
FOR FROST PROTECTION**



A COOL MATCH



Growers use sprinkler irrigation to **protect their crops from frost**. Sprinklers are very effective under certain conditions, but they can also cause damage if used at the wrong time.

A centralised control system that is able to read and **immediately process data from climate sensors** helps identifying correct water application times and durations.

Today, an effective frost protection needs both high performance sprinklers and a responsive automation system.

Nowhere is a demand for a reliable irrigation sprinkler more than in frost protection.

Thanks to specially adapted impact technology, **Perrot ZS sprinklers** can work perfectly at temperatures even as low as -10°C , without freezing assuring high distribution uniformity and maximum yield protection.

Using pioneering LoRa radio technology, **Toro Tempus[®] Air** allows you to you create an affordable and fully automated water delivery solution – all without wires.

Connecting to wi-fi or a secure broadband cellular network, it brings a wide range of data and functions direct to your device, improving your ability to monitor field conditions and **react to changing conditions**.

Example of a 1-ha frost protection system managed by a centralised Tempus Air system consisting of:

Tempus® Air RS4

1 4G-LoRa™ Gateway to manage the controller (MV and CT), multi sensor (MS) and pressure sensor (PS) modules



Tempus® Air CT

1 IP68 battery-powered controllers, each to control 2 DC latching solenoid hydraulic valves



Tempus® Air MS (S4)

1 IP68 battery-powered multi-sensor module, to read the data detected by temperature, wind and air humidity sensors

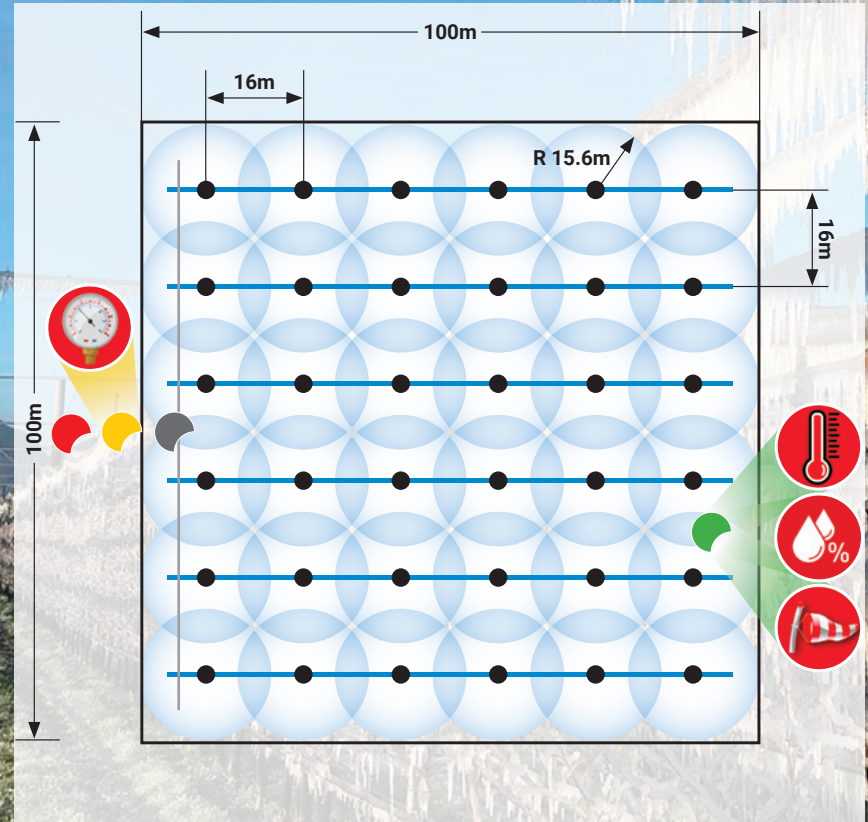


Tempus® Air PS

1 IP68 battery-powered pressure sensor module, to monitor system status at all times.



Example layout design showing ZS 30 full-circle 'frost protection' sprinklers



NO WIRING ALL MODULES ARE BATTERY POWERED

THE PROFESSIONALS OF **IRRIGATION**



Irrigation systems
for all terrains.
Quality and efficiency
'Made in Germany'.



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