



DEK Series



Break out from the four walls of your enterprise and monitor anywhere with the DXM Enclosure Kit Series.

Build standalone monitoring systems with a kit that includes everything needed to deploy an end-to-end solution. This cellular-enabled offering from Banner Engineering arrives complete with a weatherproof enclosure, world class gateway controller, and an optimized solar-powered system.

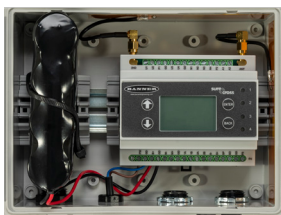
Prepaid access to cloud software tools will capture critical data allowing you to acquire insights and make data-driven decisions about your operation. Monitor vibration, temperature, humidity, material levels, duty cycles, and pressure while creating alerts to prevent failures and costly downtime.



DEK100-A1

Kit Features

- Energy optimized DXM gateway controller with embedded cellular module
- Kit includes environmentally rated enclosure, solar panel, battery, antennas, mounting and cabling hardware
- Data inputs include modbus, analog & discrete, SDI-12, and wireless data signals
- Prepaid 90 day trial for Banner Cloud Data services and cellular service management with the Banner Cell Data web portal



DXM Enclosure Kit



5W Solar Panel

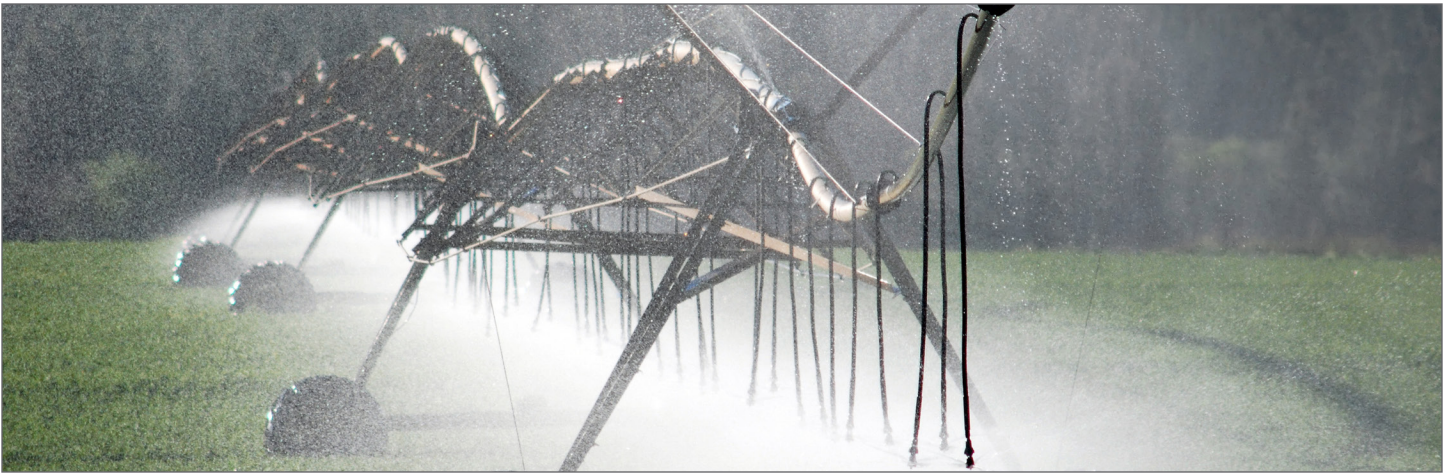


Banner Cloud Data Services



Banner Cell Data

Model	Description	ISM Radio	Cell Carrier
DEK100-A1-V	DXM100-A1 VZW Controller, Enclosure with Glands, Solar Panel, and Battery	—	Verizon
DEK100-A1-A	DXM100-A1 ATT Controller, Enclosure with Glands, Solar Panel, and Battery	—	AT&T
DEK100-A2R1-V	DXM100-A1 VZW Controller, Enclosure with Glands, RF Module, Solar Panel, and Battery	900 MHz	Verizon
DEK100-A2R1-A	DXM100-A1 ATT Controller, Enclosure with Glands, RF Module, Solar Panel, and Battery	900 MHz	AT&T



DEK Series Solution Profile

Farm Irrigation

Customer Industry

Farm Irrigation is the process of artificially controlling the amount of water distributed to areas of land for the production of crops.

Background

Farm Irrigation systems are critical for maintaining moisture levels within the soil at an optimal condition so that a high yield of crops can be produced. Actively monitoring and controlling these systems can prevent overwatering or underwatering of the soil.

Requirements

- Maintain optimal moisture levels through Irrigation Scheduling
 - Soil moisture monitoring
 - Crop conditions
 - Weather monitoring
- Easily access, track, and monitor water consumption for regulatory compliance reporting
 - Flowrate
 - Consumption
 - Water Levels
- Monitor asset performance of water distribution system
 - Pumps
 - Pipelines
 - Valves
 - Reservoirs

Challenges

- Remote location of assets without available power and network communication
- Collection of data to common repository for analysis and visualization of trends is often difficult with independent systems
- Maintenance checks are costly without preemptive alerts

Solution

The DXM Enclosure Kit (DEK) Series is well equipped to address the requirements of monitoring and control of valves and pump start/stop for farm irrigation systems. The solution is the pivotal component that can collect data from moisture sensing devices, flowmeters, pressure sensors, vibration & temperature sensors, as well as liquid level measurement devices. The data is then processed and stored within the Banner Cloud where it can be visualized and alert notifications can be delivered.





DEK Series Solution Profile

Farm Irrigation

The DEK Series is designed to easily implement Banner products, as well as sensors and equipment from other manufacturers to help you create a comprehensive solution for your needs. Below are monitoring considerations within your industry and recommended Banner offerings that meet the requirements of your application.



Soil Moisture

Connect up to five soil probes using SDI or analog inputs that allow you to monitor multiple depth levels and compare within one or multiple zones.

Pump Health

Banner's QM30VT2 Vibration and Temperature sensor can monitor the health of rotating shaft assets such as pumps and motors. The BWA-PRESSURE-SENSOR is an analog transducer that can be used to monitor water pressure.

Configure an input of the DXM Controller as a pulse counter to monitor flow rates from most flow meters available on the market.



Environmental Conditions

The DXM controller can integrate SDI-12 and serial weather stations as well as offer canopy and fruit temperatures through Banner's infrared solutions. All aspects of a weather station can be imported into the DEK Series either via wired or wireless connections.

Water and Chemical Levels

Monitor chemical levels with the K50U Ultrasonic sensor that is well suited for most tanks used in chemigation and fertigation processes. The BWA-PRESSURE-SENSOR-15L is a submersible pressure transducer that can easily monitor the water levels in a reservoir or retention pond.

