Background
A producer of stainless steel and special alloys supplies billets, blooms and ingots to the metal casting industry. During production, articulating robots are used to handle magnesium billets. Proximity switches located on the end effectors of the robots communicate status information from the grippers to a control panel.

Challenge
Robotic cables had been used to connect the proximity switches to the control panel. Environmental challenges and the motion of the robot compromised the integrity of the cables. Breaks were quite frequent and production had to be halted for repair and replacement, pushing up costs and driving down productivity.

Solution
Banner’s SureCross® DX80 wireless network was chosen to replace the cables. The network is built around a Gateway capable of two-way communication with multiple end-point Nodes. It operates on the 900 MHz frequency band for robust communication across distances and through obstructions. Frequency Hopping Spread Spectrum (FHSS) technology and Time Division Multiple Access (TDMA) control architecture ensures reliable data delivery between devices.

A SureCross DX80 FlexPower Node is installed on each of the company’s 15 robots. Each node is connected to four inductive proximity switches near the end effector. The switches detect gripper position and communicate it to the Node. The Node transmits this information to the SureCross DX80 Gateway located at the control panel. An internal 3.6V lithium battery powers the Node and the switches.

By deploying a SureCross DX80 wireless network, the company eliminated the need for long cable runs between the proximity switches and the control panel. Downtime and repair and replacement expenses were significantly decreased. The combination of reduced expenses and increased productivity allowed the company to save over $100,000 each month.