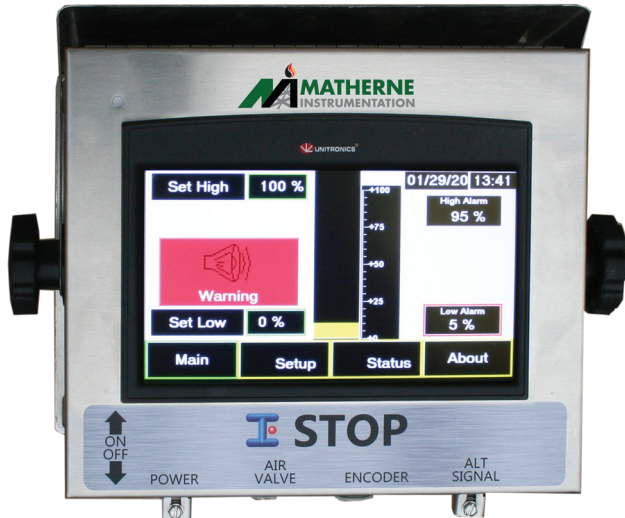


## ELECTRONIC CROWN PROTECTOR I-STOP MODEL



*Electronic Crown Protector I-Stop Model*

### Crown Protection

Derrick designs generally incorporate extra space at the crown area to allow for safer operation of the traveling block in an area that is hard for the driller to see, and also to allow for potential traveling block over run of the upper mechanical stop caused by high block ascending speeds near the crown.

Fitting portable top-drives to rigs reduces this extra space increasing the possibility of the traveling block impacting the crown. By installing the TBC, safe and accurate operation of the Traveling Block is maintained to the maximum upper block travel limit. The TBC eliminates the problem of over running the top stop by monitoring and controlling the blocks ascending velocity when the traveling block is being operated near the crown. This allows the traveling block's upper travel limit to be safely moved closer to the crown, eliminating the necessity of adding extra derrick height.

### Floor Protection

Protecting the floor has always been difficult because block speed must be continually monitored and controlled to prevent the drawworks brakes from being overrun. Because the Traveling Block Controller is an intelligent kinetic energy monitoring system it ensures that the safe and accurate operation of the traveling block is maintained all the way to lower block travel limit. When the traveling block is descending, the TBC monitors the block's position. When the traveling block reaches the absolute lower limit, the drawworks mechanical brake is set.

