See The TECO Difference!

TECO MAGIC III

Rotating Sensing Disk Consistency Transmitter Pre-Calibrated with SMART + HART

BOLT-IN REPLACEMENT FOR BTG®

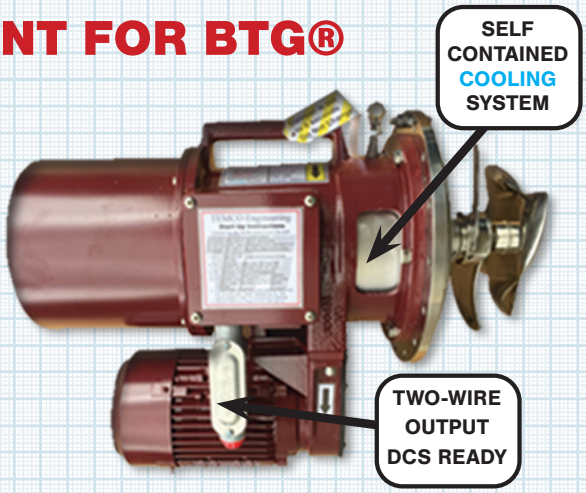
PRODUCT SUMMARY

Magic III transmitter measures consistency by sensing the change in sheer force with the rotating sensor. The torque required to turn the Magic III's rotating sensor varies in proportion to the consistency. As the consistency increases, more torque is required to turn the sensor. Conversely, as the consistency decreases, the less torque is required. The Magic III measures the torque and produces an output proportional to the consistency. This system is faster-responding than a feed back coil system, so the Magic III senses and responds to consistency changes faster than other consistency transmitters.

Magic III's SMART feature has ten available response curves to match the nonlinear pulp response curves. This gives higher accuracy than traditional linear response curves because it adjusts for higher sensitivity at low consistency and lower sensitivity at higher consistency.

Magic III's HART feature uses digitally set upper and lower range values. With any HART compatible device, you can program or read the loop's current output and consistency value anywhere the 4mA to 20mA wires run; from the control room to the transmitter.

The **Magic III** measures consistency by drawing a continuous flow of stock past the sensor at a constant velocity. The motor driven propeller provides the steady flow so the sensor is immune to velocity changes. Changes in output are, therefore, purely a function of changes in consistency. Also, since the sensor is "outside the pipe", it doesn't get damaged by "logs" or anything else in the stock line. The Magic III is long-lasting.



FEATURES & BENEFITS

- HART Compatible
  - Bi-directional communication enhances diagnostics and configuration and provides quick visibility into the device
  - Early warnings and problem detection minimizes impact of deviations and prevents costly shutdowns
- SMART motor driven consistency transmitter
  - High sensitivity to consistency changes ensures accurate and responsive measurements
  - Velocity immunity eliminates the need for velocity compensation or increasing pipe size
- Self-contained cooling system eliminates the need to run cooling water to the sensor
- Seals lubricated by heat transfer fluid No lubricant required
- Long meter life
- Loop Powered 24 volts
  - Simplified wiring requires only one pair of wires for both power and output
  - Transmission that outperforms voltage signals over long distances and noisy environments

Thompson Equipment Company
125 Industrial Avenue
New Orleans, LA 70121

+1 504-833-6381
sales@teco-inc.com

24 Hour Technical Support
+1 800-528-8997 or support@teco-inc.com

TECO THOMPSON EQUIPMENT COMPANY

www.TECO-inc.com

TECO

MAGIC III

DESCRIPTION

Magic III measures consistency by sensing changes in torque, and converting it into a 4mA to 20mA reading like any rotary consistency transmitter. The degree of torque applied to the rotary disk affects the distance (air gap) between the torque arm and the proximity sensor. A change in distance between the torque arm and the proximity sensor changes the inductance. This change in inductance affects the frequency of the oscillator circuit which affects the amount of voltage drop across a coil / capacitance circuit. A two wire core processor with HART protocol converts this voltage change to a 4mA to 20mA current signal which is independent of load or supply voltage. A digital filter is built in for signal damping if necessary. A proximity sensor is used for temperature compensation.

SPECIFICATIONS

Sensitivity	**Better than +/- 0.025% as % consistency**
Consistency	**Range adjustments made in % consistency from any HART Protocol adjustment device such as a Meriam ™, Rosemount™ (375, 475) SMAR™ or Emerson AMS Trex Communicator. Sensing - Standard motor driven disc and shaft to generate torque from consistency changes**
Pulp Curves	**Furnish-specific calibration curve, 1 to 7% installed in transmitter, additional curves available**
Torque Sensing	**Non-Contact Inductive coupling with Stationery Proximity Sensor; approximately .030 in Air Gap**
Power	**2-wire, 24-29 volts DC, minimum 250 ohm loop resistance**
Sensing Motor	**Standard 3 phase 440 vac @ 60 Hz. Optional 575 vac motor is available**
Output Signal	**4-20 mA (limited to 23 mA) into 350 ohm max. load @ 24 volts,700 ohms @ 29 volts**
Output Dampening	**Digital 1.5 to 100 seconds (5 sec. factory setting)**
Output Test Points	**4 to 20 ma. Equal Upper & Lower Range**
Repeatability	**+/- 0.3 % full scale (constant operating conditions)**
Operating Conditions	**Max. stock Temp. 140 °F - Ambient Temp. 140°F. Max. Process Pressure @ 257°F**
Materials: Wetted Parts	**316 S/S - Housing: Aluminum**
Seal Cooling	**Self-Contained cooling using heat transfer fluid. No external water required**
MAGIC III Upgrade	**Can be installed on any existing pneumatic or electronic BTG ® transmitter**

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QR code to come

SCAN for more information!