Description

With the SmartConnex™ control system, the control and motor drive modules of a feeder are combined into one component and are integrated directly into the feeder. Instead of a central control panel, each feeder has its own K-Tron Control Module (KCM). Connection between weigh feeders, operator interface and smart I/O is via an industrial network.

With its tight integration into the feeder, the KCM can be pre-wired and pre-tested in K-Tron's manufacturing plant. This eliminates much of the wiring previously required at installation. The KCM comes with all the software your feeder will need for either batch or continuous applications. It supports all types of K-Tron feeders that are equipped with SFT II and SFT III load cells. This includes loss-in-weight feeders/batchers with DC motors, stepper motors or vibratory drives. The KCM also supports weigh belt feeders with DC motors, the Smart Flowmeter and PID applications. An AC motor interface is also available (separate AC drive needed).

The K-Tron Control Module offers the following advanced features:

- Screw speed modulation: patented algorithm that can improve the short-term feeder accuracy on single screw feeders at low feed rates (below 60 screw rpm) by predicting the periodic pulsation and modulating the screw speed to reduce the error.
- Integrated refill control for self contained vacuum loaders or single central receivers.
- Software Version Management: all software for the feeding system components such as load cells, motor drives, ActiFlow, etc. is included in the KCM software. Once a new software version is uploaded to the KCM it automatically manages any updates to the other components.

Mechanical Options

The KCM is available in a sanitary stainless steel housing for use in pharmaceutical or food applications (the standard KCM housing is extruded anodized aluminium, the cover is polyester powder coated cast aluminum).

Communication with the host system

Connection to the plant's own host system can take place directly from the K-Tron Control Module. Optional protocols currently available for the KCM include:

- Modbus RTU, Modbus +, Modbus/TCP
- Allen Bradley DF1
- DeviceNet
- Ethernet/IP
- Profinet DP, Profinet

Communication directly at the KCM

The KCM has an RS232 data port for communicating with a PC. Data queries or software upgrades can be done directly between the feeder and a notebook computer via a standard RS232 connection. K-Tron offers various Microsoft Windows® tools for diagnostics, maintenance and parameter backup.

When the KCM is equipped with an Ethernet board a fully functional user interface is available for maintenance operations via any web browser using HTTP.
**Operation**

Function keys are marked with easily recognized symbols and text. From the Home Page, the operator can view the feeder’s operational status and process parameters. Pressing the NEXT key scrolls down one line.

**Symbol Keys**
- **GRAV/VOL** operation shift
- **Home** to process view
- **Escape** from points in menu or levels
- Displays programming menus
- **Scrolling through screens**
- **Enter setpoint**
- Totalizer value
- **Alarm view/acknowledge**
- **Start**
- **Stop**
- **Enter**

**Operation status** (Run, Stop, Wait, etc)
**Operation symbol** and current time
**Input mode** (Local, Direct, etc)
**Operation parameters**

**Environmental conditions**
- Zone classifications: suitable for general purpose, ATEX 3D or NEC Class II Div 2, Gr. F&G
- Ambient temperature range: 0° to 50°C (32° to 122°F)
- Storage temperature range: -25° to 80°C (-13° to 176°F)
- Max. humidity: 95% at 35°C (95°F) non-condensing
- Protection: IP 66, NEMA 4

**Dimensions [mm (in)]**
- Standard Aluminum Housing
- Stainless Steel Housing (option)

**Technical Data**

**Power supply**
- **Supply Voltage:** 115 V AC, 50-60Hz or 230 V AC, 50-60Hz
- **Max. power consumption:**
  - 450W DC Drive: 500W
  - 1600W DC Drive: 1700W
  - Stepper Drive: 110W
  - Vibratory Drive: 150W
  - AC Motor Interface: 50W

**Electrical standards**
- Electromagnetic radiation: EN50081-2
- Electromagnetic interference immunity: EN50082-2
- Electrical safety: EN 61010-1

**Approvals**
- CE

**Display**
- 3.5” TFT color LCD display

**Languages**
- EN, DE, FR, ES, IT (standard)
- CN, JP, TR, PL, RU, KR (option)

**Output Specifications**
- **Output power:**
  - 450W DC Drive: 450W
  - 1600W DC Drive: 1600W
  - Stepper Drive: 50W
  - Vibratory Drive: 120W
  - AC Motor Interface: n/a
- **Speed turndown:** 100:1 (except AC drives)
- **Digital Outputs:** 3 Relays plus 4 open collectors
- **Analog Output:** 0-20mA, 4-20mA, or 0-10V (shunt < 500 Ω, Max 10 VDC)
- **Digital Inputs:** 4 x 5V CMOS plus 2 x 24V inputs
- **Analog Input:** 0-20mA, 4-20mA, 0-5V or 0-10V
- **Frequency Input:** 0-20 KHz (Max 12 VDC)

**Caution:** these measurements are for general reference only. Please consult dimensional drawing for exact measurements.