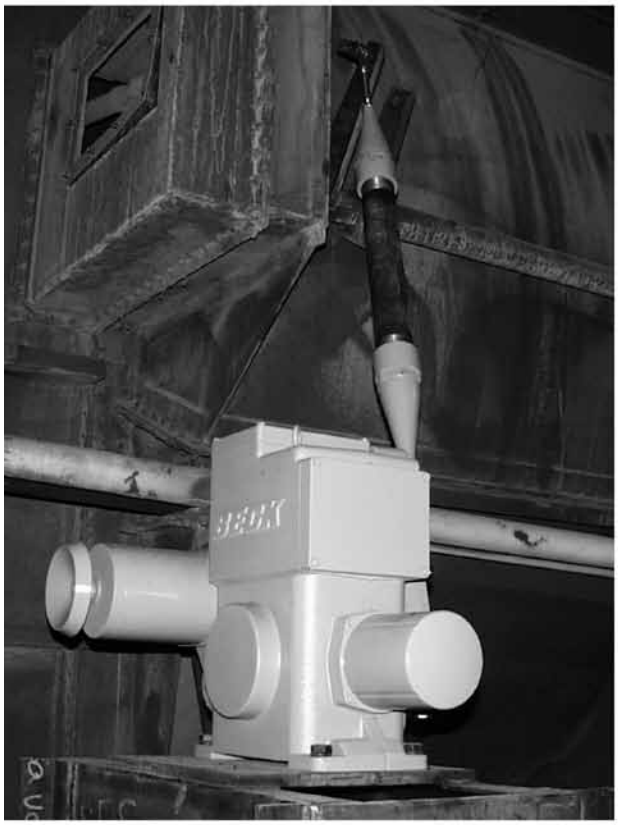
80-1103-00
Rev. 01.7

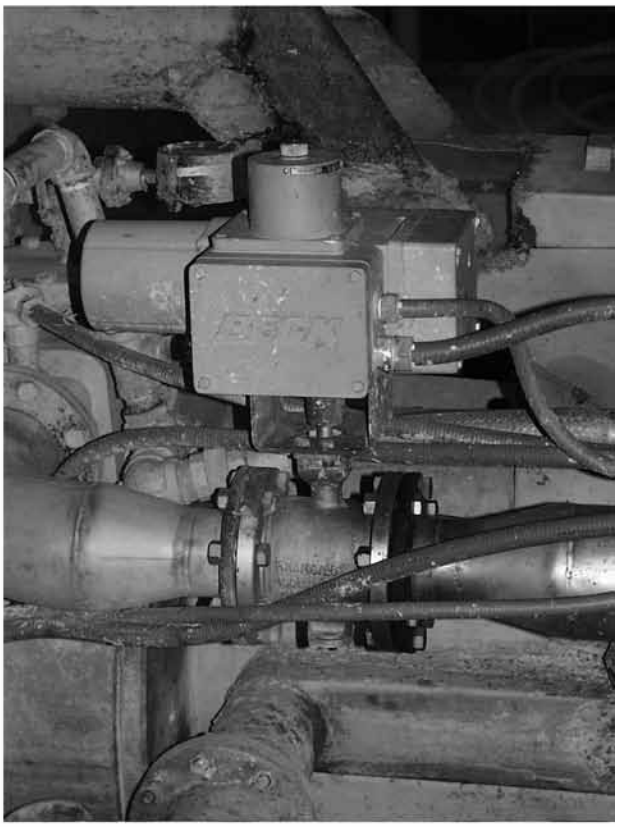
EXCERPT

MODELS 11-1_9
11-2_9
11-3_9
11-4_9

BECK®

INSTRUCTION MANUAL





ELECTRIC ACTUATORS FOR INDUSTRIAL PROCESS CONTROL

DIGITAL CONTROL MODULE (DCM-2)

INPUT: DIGITAL CONTROL MODULE (DCM-2)

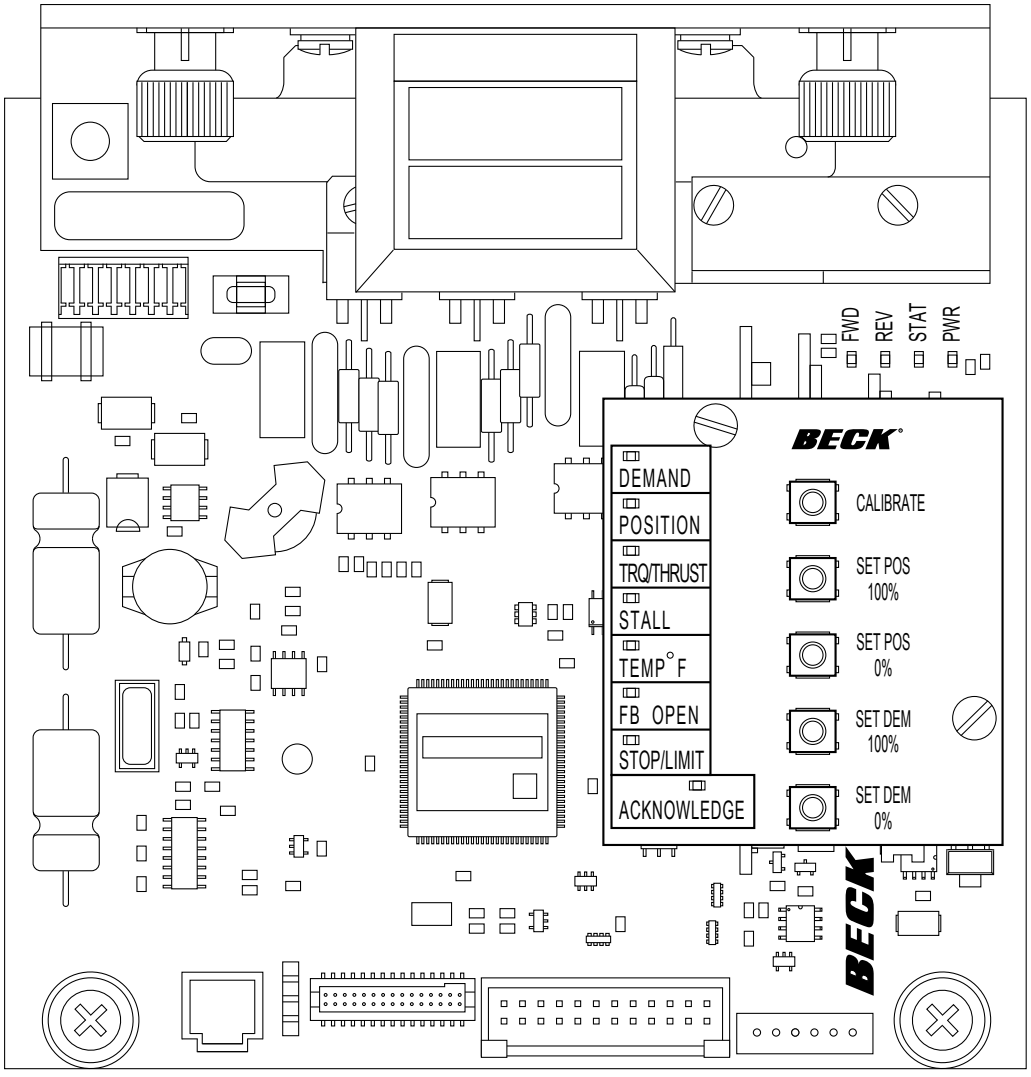
Beck modulating drives are equipped with a precision, digital control module (DCM-2) designed to receive conventional 4–20 mA or 1–5 V dc control signals directly—eliminating the need for contact protection devices, relays, switches and reversing starters.

The DCM-2 modulates the drive output shaft in response to an analog Demand input signal and is designed to operate continuously in temperatures up to 185°F (85ºC).

The DCM-2 provides intelligent calibration, easy drive setup changes, and diagnostic information. A **Local interface** provides quick pushbutton setup and diagnostics without the need for a handheld or remote device (see page 23). A **HART communications interface** allows remote access of all features and information (see page 36). A **Serial interface** also allows for drive configuration changes, drive information reporting and to assist in troubleshooting (see page 66).

The DCM-2 permits two or more Beck drives to be operated by a single signal source. See pages 29 and 57 for details on split range operation.

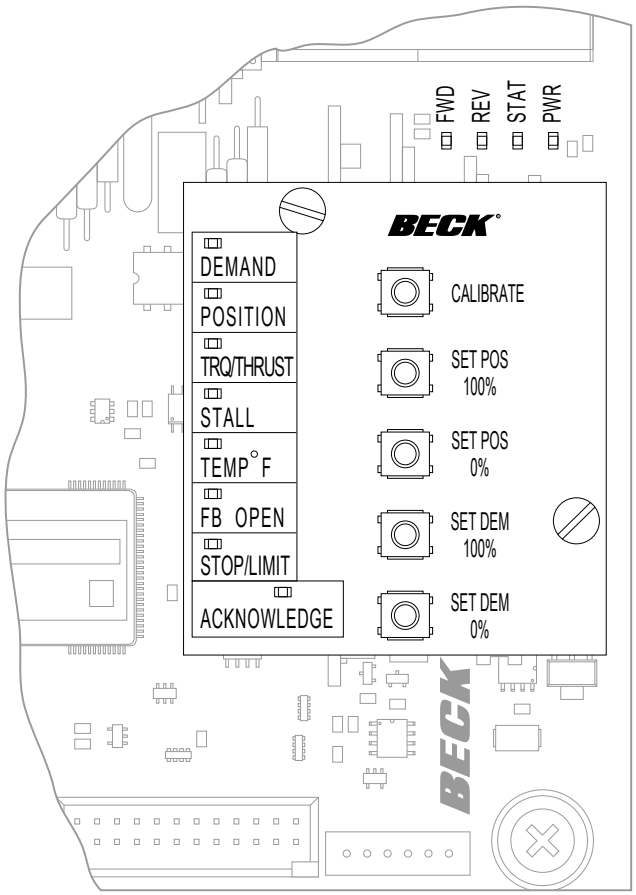
A square function is available to position the drive's output shaft proportionally to the square of the input signal. This function is factory configurable (specify at time of order) or may be configured using the HART interface (see page 46) or Serial interface (see page 70).



DCM-2 LOCAL INTERFACE *Operation*

OVERVIEW

The DCM-2 customer interface panel (pictured below) allows the user to easily calibrate the drive and troubleshoot conditions. The following information provides an overview of the DCM-2 customer interface panel features.



NOTE: Beck drives are shipped from the factory set up and calibrated to customer specifications placed at the time of order and are ready for installation.

Overview LEDs

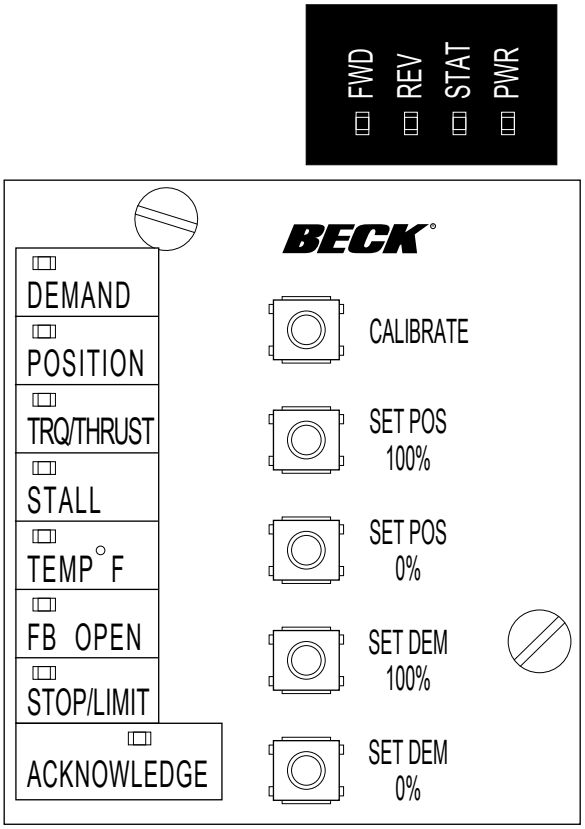
The four LEDs, as highlighted below, indicate the present state of the drive.

FWD
: This LED is lit when the drive is receiving a Demand signal greater than its position.

REV
: This LED is lit when the drive is receiving a Demand signal smaller than its position.

STAT
: This LED is lit when additional status is available. For details regarding possible conditions, see “Status Indication LEDs” on page 24.

PWR
: This LED is lit when power is applied to the drive. This LED pulses from bright to dim indicating the DCM-2 is fully operational.



DCM-2 LOCAL INTERFACE *Operation*

Status Indication LEDs

When the "STAT" LED is lit, the applicable status indication LED(s) (pictured below) will light to reveal the condition(s) as described below. An alarm is also available at terminal E. When the condition is corrected, the status will automatically reset. Each status LED is described below, with a more detailed explanation of the function provided on page 21.

DEMAND
: Loss of the Demand input signal.

POSITION
: The CPS Position signal to the DCM-2 is out of the calibrated range limits. The lower limit is –5% and the upper limit is 105% of the calibrated range. This LED may also indicate a CPS or internal wiring failure.

TRQ/THRUST
: This LED indicates that excessive torque is present (over 105% of the drive rating). This LED is functional only when the drive is equipped with optional torque sensing.

STALL
: The drive is in a stall condition and stall protection has been activated.

TEMP °F.
: Drive's internal temperature is outside of rating.

FB OPEN
: External position Feedback signal is enabled, but not wired to an external load or the wiring has failed between the drive and the monitoring device.

STOP/LIMIT
: Handswitch is in "STOP" position or the drive is at a limit and is not in balance.

Pushbutton Controls

The five pushbuttons (pictured below) on the DCM-2 customer interface panel are used for calibration. When pressing a pushbutton, pressure should be maintained until the "ACKNOWLEDGE" LED lights; this confirms receipt of the pushbutton command. See the Calibration section, beginning on page 25, for further explanation of the calibration procedures. Pushbutton functions are as follows:

CALIBRATE
: A safety feature, this button must be pressed and held while pressing the pushbuttons described below to set the Position and Demand signal limits.

CAUTION

Pressing the following buttons may change calibration and cause the drive to reposition.

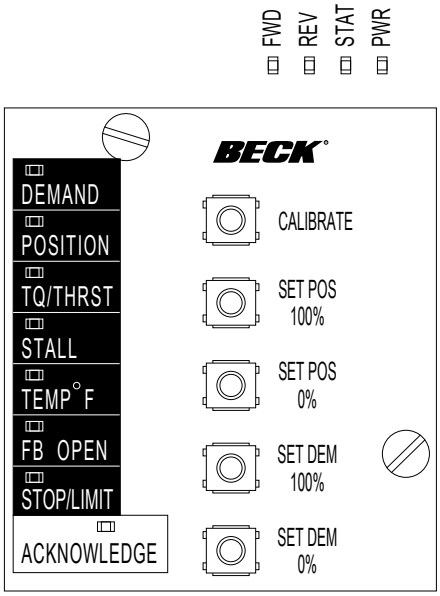
SET POS 100%
: Press to set the desired 100% position for drive movement (this will correspond to a 100% Demand signal).

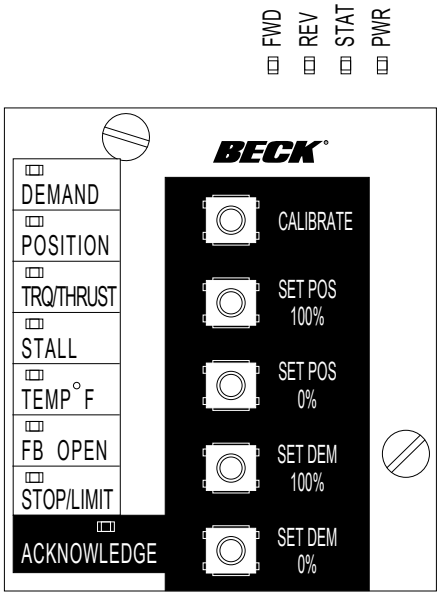
SET POS 0%
: Press to set the desired 0% position for drive movement (this will correspond to a 0% Demand signal).

SET DEM 100%
: Press to set the Demand input signal that corresponds to 100% Demand.

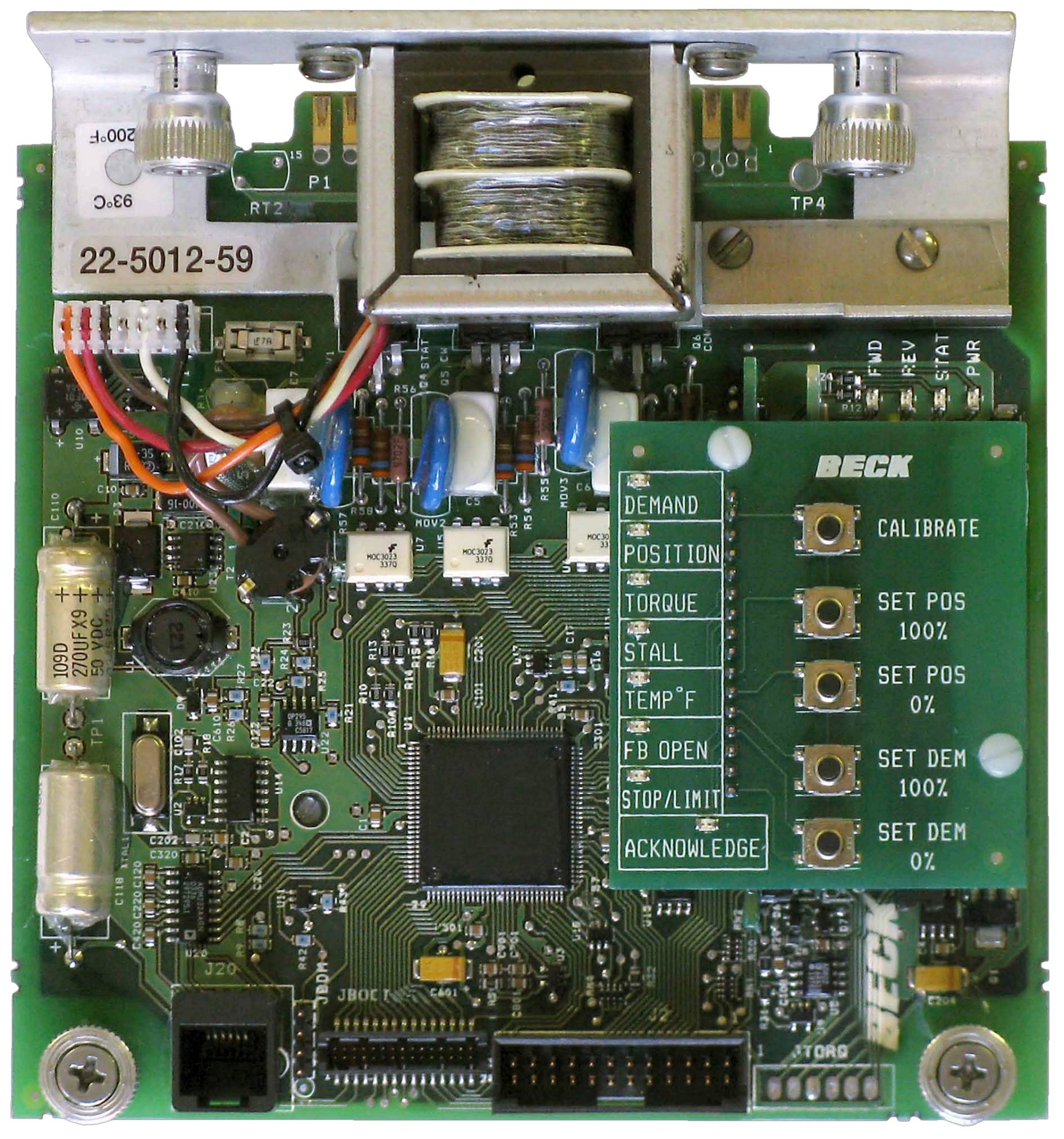
SET DEM 0%
: Press to set the Demand input signal that corresponds to 0% Demand.

Status Indication LEDs





Pushbutton Controls


22-5012-59
200°F
93°C
P1
RT2
TP4
BECK
DEMAND
POSITION
TORQUE
STALL
TEMP°F
FB OPEN
STOP/LIMIT
ACKNOWLEDGE
CALIBRATE
SET POS
100%
SET POS
0%
SET DEM
100%
SET DEM
0%
FWD
REV
STAT
PWR
109D
270UFX9
50 VDC
MOC3023
337Q
J20
JBOOT
JTORQ