

M9000-200 Commissioning Tool

Description

The M9000-200 Commissioning Tool combines accurate and reliable technology in a user-friendly, yet economical package. This unit provides four control signals to drive floating, on/off, proportional, and resistive input actuators. LEDs display feedback voltages and indicate mode selection and auxiliary switch positioning.

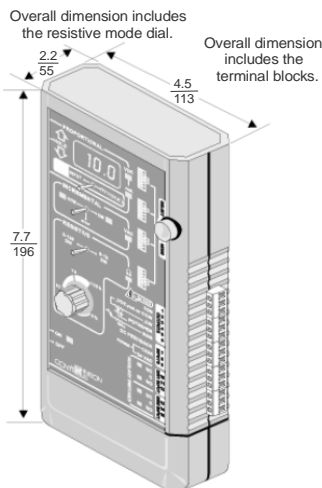
The Commissioning Tool saves on installation time and is compatible with Johnson Controls actuators and most competitors' models. A plug-in transformer (included) or 24 VAC (nominal) power supply used with the Commissioning Tool enables it to output

AC voltage, DC voltage, current, or resistance for powering up and controlling an actuator. It requires no controller hook-up, which makes equipment calibration, setup, and adjustment a quick and easy process.

Refer to the *M9000-200 Commissioning Tool Product Bulletin (LIT-2681073)* for important product application and single point of contact information.

Features

- universally compatible with all present Johnson Controls and most competitors' actuators and other voltage, current, or resistance controlled equipment
- compact, portable, hand-held unit (shoulder strap included) allows easy handling in the field
- pushbutton selectable output/feedback modes provide users with a complete testing device; no separate instruments are required for field testing
- digital and LED feedback displays provide user with clearly readable voltage and auxiliary switch feedback in dimly lit conditions
- plug-in terminal block test lead connections can accommodate easy interchangeability of multiple sets of test leads



Dimensions (in./mm)

Applications

- provides resistive, voltage, and current signals for calibration and/or installation of floating and proportional actuators
- functions as a DC voltmeter
- tests and adjusts auxiliary switches
- provides bias signal for testing and setup of resistive feedback

Selection Chart

| Code Number | Description |
|-------------|--|
| M9000-200 | Commissioning Tool |
| M9000-200-0 | Commissioning Tool without Carrying Case |

Accessories

| Code Number | Description |
|-------------|--------------------------|
| M9000-210 | Set of 5 Terminal Blocks |



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Technical Specifications

| M9000-200 Commissioning Tool | |
|---------------------------------|--|
| Power Requirements | Commissioning Tool: 24 VAC nominal (20 to 30 VAC) at 50/60 Hz, 3 VA, Class 2 Plug-in Transformer: 120 VAC at 60 Hz |
| Input DC Feedback | 0 to 30 VDC |
| Electrical Connections | Screw Terminals for 24 to 12 AWG Transformer Plug: 0.08 in. (2.11 mm) diameter pin, 0.25 in. (6.35 mm) diameter plug |
| Input Impedance | Voltmeter: 1 Megohm (nominal) |
| Output Signal | AC Power: 24 VAC nominal (20 to 30 VAC), 25 VA maximum (Terminals 1 and 2) Output AC voltage is equivalent to the input AC voltage and frequency. Resistive: 0 to 135 ohms $\pm 7\%$, 2W or 0 to 1k ohms $\pm 5\%$, 2W (Terminals 3, 4, and 5) Proportional: Voltage - 0 to 10 VDC (500 ohms minimum); 0 to 20 VDC (6.8k ohms minimum) (Terminals 2 and 3) Current - 0 to 20 mA (680 ohms maximum) (Terminals 2 and 3) Incremental: 24 VAC nominal (20 to 30 VAC), 25 VA maximum (Terminals 2, 3, and 4) Output AC voltage is equivalent to the input AC voltage and frequency. Bias: 5 VDC with 330 ohm series resistor (Terminal 6) |
| Accuracy | $\pm 2\%$ of full scale at 77°F (25°C) |
| Resolution | 0.1 VDC, 0.1 mA |
| Auxiliary Switch Testing | Provides 24 VAC at 4 mA to auxiliary switch contacts (dry contacts only) |
| Response Time | Proportional, Voltage: 0 to 20 VDC in 20 seconds Proportional, Current: 0 to 20 mA in 20 seconds |
| Ambient Conditions | Operating |
| | Storage |
| Dimensions (H x W x D) | Commissioning Tool (overall): 7.7 x 4.5 x 2.2 in. (196 x 113 x 55 mm) Transformer: 2.8 x 1.9 x 2.2 in. (71 x 48 x 56 mm) Carrying Case: 10.4 x 12.7 x 4.2 in. (263 x 322 x 107 mm) |
| Weight | Commissioning Tool: 0.9 lb (0.4 kg) Transformer: 1.2 lb (0.5 kg) Carrying Case: 2.0 lb (0.9 kg) |
| Total Shipping Weight | 5.4 lb (2.5 kg) |