HPO-6700 Series

Output Override Boards

DESCRIPTION

For enhanced controller output options (such as manual control, using large relays, or for devices that cannot be powered directly from a standard output), install a relevant HPO-6700 series output override board (in supporting controller models only).

The **HPO-6701/6703/6705** boards are designed to convert a binary/digital output to a **relay** contact or **triac** output and to provide "Hand-Off-Auto" control and feedback functions. These boards provide:

- **Optical isolation** between the controller and the load, plus zero-cross switching (HPO-6701 triac).
- **Mechanical isolation** between the controller and the load (HPO-6703/6705 relays).

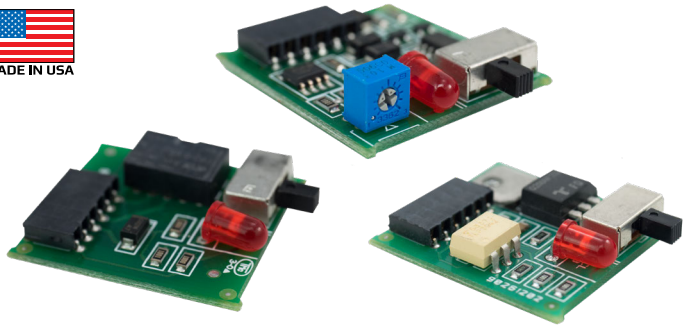
The **HPO-6702** enhances the analog **voltage output** with a "Hand-Off-Auto" control while providing an adjustable **potentiometer** for override settings while in the "Hand" position.

The **HPO-6704** converts a standard analog voltage output to a **4–20 mA** output with "Hand-Off-Auto" control while providing an adjustable **potentiometer** for override settings while in the "Hand" position. (Since the HPO-6704 supplies the power, it will not work with a 4–20 mA device that also supplies its own power.)

Each output board (except HPO-6703-1) has an accessible three-position slide switch for selecting the **"Hand-Off-Auto"** functions. While in the "Hand" position, the output is manually energized, and the controller is provided with a feedback signal to indicate the output has been overridden. While in the "Off" position, the output is manually de-energized, and the controller is provided with a feedback signal to indicate the output has been overridden. While in the "Auto" position, the output is under the command of the controller.

Each output board also has a red **LED** indicator that is On when that board's output is turned On (either manually or automatically).

MADE IN USA



MODELS

Analog (DC Voltage or Current) Outputs

HPO-6702	0–10 VDC with an adjustable override potentiometer for "Hand" output
HPO-6704[1]	4–20 mA DC (@ 10 VDC) current loop with an adjustable override potentiometer for "Hand" output

Relays (AC or DC)[2]

HPO-6703[3]	Relay, Normally Open contacts (AC or DC)
HPO-6705	Relay, Normally Closed contacts (AC or DC)

Triac (AC)[2]

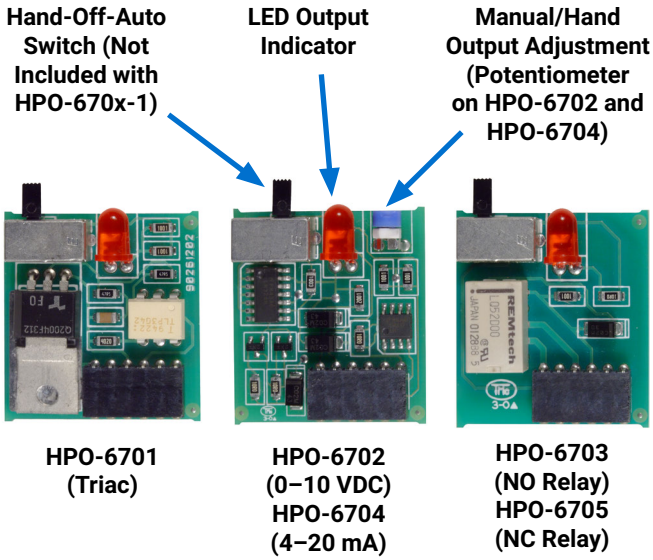
HPO-6701[1]	Triac output w/ zero-cross switching (AC only)

[1]**NOTE:** Only the HPO-6701 and HPO-6704 are approved for **smoke control** applications. See Smoke Control Manuals 000-035-08 (BACnet) and/or 000-035-09 (KMDigital) for more information.

[2]**NOTE:** Connecting 24 volts to an analog ground will result in improper operation and may result in equipment damage. **With the HPO-6701 triac and HPO-6703/6705 relays, use only the Switched Common terminal (in the same output bank as the output terminal) on the controller instead of Ground for the signal common.** Switched Common output terminals are unconnected in the controller unless an appropriate override output board is installed, and they are isolated from the grounds used for the universal output analog circuitry in the controller.

[3]**NOTE:** HPO-6703-**1** is always in auto mode and does not have the manual slide switch.

SPECIFICATIONS



Outputs

NOTE: All circuits are power limited and non-supervised.

Analog (DC) with short protection

HPO-6702	0–10 VDC, 100 mA maximum, adjustable override potentiometer
HPO-6704	4–20 mA, 100 ohms min. to 500 ohms max., adjustable override potentiometer **(since the HPO-6704 supplies the power, it will not work with a 4–20 mA device that also supplies its own power)**

Relay (AC/DC)

HPO-6703	Normally open, 30 VAC/VDC, 2 A max., power factor 0.4
HPO-6705	Normally closed, 30 VAC/VDC, 2 A max., power factor 0.4

Triac (AC)

HPO-6701	Zero-cross switching, optical isolation, 12 VAC min. and 30 VAC max. voltage, 20 mA min. current and max. current = 1 A for 1 board (0.8 A max. for 2 boards, 0.6 A for 3–4 boards, and 0.5 A for 5–8 boards)

Warranty

KMC Limited Warranty	5 years (from mfg. date code)

Regulatory Approvals

(HPO-6701/6704 Only)	UL 916 Energy Management Equipment listed UL 864 Smoke Control Equipment listed (UUKL)

NOTE: Only the HPO-6701 triac and HPO-6704 4–20 mA boards are approved for smoke control applications. See Smoke Control Manuals 000-035-08 (BACnet) (**BACnet**) and/or 000-035-09 (KMDigital) (**KMDigital**) for more information.

Physical Characteristics

Mounting	Rack mount in controller slots
Size	1.23 x 1.38 inches (31.2 x 35.1 mm)
Weight	3 ounces (85 grams)

Environmental Limits

Operating	32 to 120° F (0 to 40° C)
Shipping	–40 to 140° F (–40 to 60° C)
Humidity	0 to 95% relative humidity (non-condensing)

ACCESSORY

HPO-6802

Output board raised cover with labels—it is **required** for controllers or expansion modules with **metal and older "side-mounting" plastic cases** (e.g., BAC-A1616BC, CAN-A168EIO, BAC-5831, KMD-5831, KMD-5205/5221/5270). It is not applicable to current model controllers with raised plastic cases (e.g., BAC-5901, CAN-5901, BAC-5801/5802, KMD-5801/5802).

MAINTENANCE

Maintenance is not required. Each component is designed for dependable, long-term reliability and performance. Careful installation will also ensure long-term reliability and performance.

SUPPORT

For information about installation and operation, see:

- **HPO-6700 Series Output Override Boards Installation Guide**
- **(Video) KMC Controls' HPO-6700 Series Override Boards (Overview and Operation)**
- **(Video) KMC Controls' HPO-6700 Series Digital Override Boards (Triac/Relay Selection and Wiring)**
- **(Video) KMC Controls' HPO-6700 Series Analog Override Boards (0–10 VDC and 4–20 mA Selection and Wiring)**

Additional resources are available on the web at **www.kmccontrols.com**. To see all available files, log-in to the KMC Partners site.

 Specifications and design are subject to change without notice