

Description and Application

For enhanced output options and for devices that cannot be conveniently powered directly from a standard controller universal 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 digital output to a relay contact or triac output and to provide “Hand-Off-Auto” and feedback functions. The **HPO-6704** converts a standard 0–10 VDC output to a 4–20 mA output. The **HPO-6702/6704** enhance the respective analog output with “Hand-Off-Auto” and feedback functions while providing an adjustable potentiometer for override settings while in the “Hand” position.

Each output board (except HPO-670x-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 to indicate when the output is turned On either manually or automatically.

Features

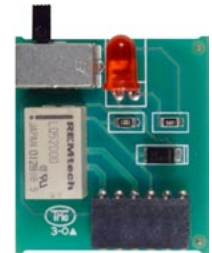
- ◆ A variety of output types
- ◆ A slide switch (except HPO-670x-1) for manual or automatic control (“Hand-Off-Auto”)
- ◆ An LED to indicate output status
- ◆ Optical isolation between the controller and the load, plus zero-cross switching (HPO-6701 triac)
- ◆ Mechanical isolation between the controller and the load (HPO-6703/6705 relays)
- ◆ A potentiometer to adjust the voltage or current output while in the “Hand” (only) override position (HPO-6702/6704)



HPO-6702
(0–10 VDC)
HPO-6704
(4–20 mA)



HPO-6701
(Triac)



HPO-6703
(NO Relay)
HPO-6705
(NC Relay)

Models

Analog (DC Voltage or Current) Outputs

- HPO-6702 0–10 VDC analog with adjustable override potentiometer
- HPO-6704⁽³⁾ 4–20 mA (@ 10 VDC) current loop with adjustable override potentiometer

Relays (AC or DC)⁽²⁾

- HPO-6703⁽¹⁾ Relay, normally open contacts
- HPO-6705 Relay, normally closed contacts

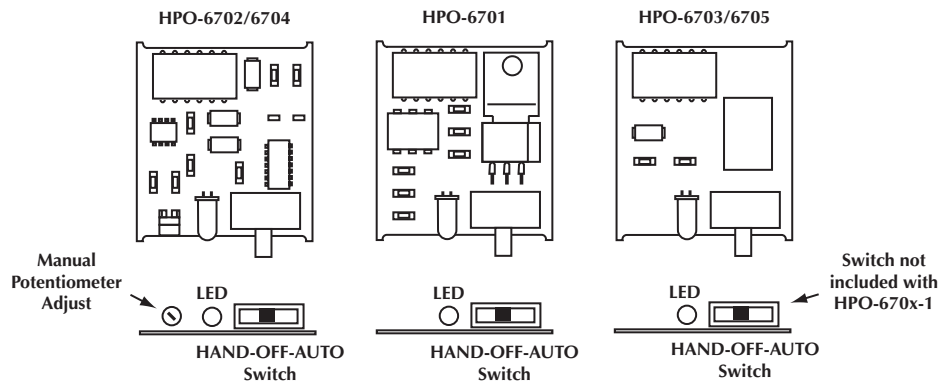
Triac (AC)⁽²⁾

- HPO-6701⁽³⁾ Triac output w/ zero-cross switching

⁽¹⁾NOTE: HPO-6703-1 is always in auto mode and **without** the manual slide switch.

⁽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: 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.



Specifications

Outputs	(All circuits are power limited and non-supervised)
Analog (DC) with short protection	
HPO-6702	0–10 VDC, 100 mA maximum, adjustable override pot.
HPO-6704	4–20 mA, 100 ohms min. to 500 ohms max., adjustable override pot. (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)	30 VAC/VDC, 2 A max., power factor 0.4
HPO-6703	Normally open
HPO-6705	Normally closed
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)
Regulatory	(For HPO-6701/6704 only) UL 916 Energy Management Equipment listed UL 864 Smoke Control Equipment listed (UUKL)
Mounting Size	Rack mount in controller slots 1.23 x 1.38 inches (31.2 x 35.1 mm)
Weight	3 ounces (85 grams)
Ambient Limits	
Operating	32 to 120° F (0 to 40° C)
Shipping	–40 to 140° F (–40 to 60° C)
Humidity	0 to 95% RH, non-condensing

Accessory/Repair Parts

The following accessory/repair parts are available for controllers or expansion modules with **metal and older “side-mounting” plastic cases** (e.g., BAC-A1616BC, CAN-A168EIO, BAC/KMD-5831, KMD-5205, KMD-5221/KMD-5270). They are not applicable to current model controllers with raised plastic cases (e.g., BAC/KMD-5801/5802).

- HPO-6802 Output board raised cover with labels—**required** to secure the boards in “metal-case” controllers
- 883-319-01 Replacement rack insert for controllers
- 902-305-02 Replacement flat cover



Maintenance

No routine maintenance is required. Each component is designed for dependable, long-term reliability and performance. Careful installation will also ensure long-term reliability and performance.

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KMC Controls, Inc.

19476 Industrial Drive
New Paris, IN 46553
574.831.5250

www.kmcccontrols.com; info@kmcccontrols.com