

International Business Department
Control Products Headquarters
Advanced Automation Company

No. 04-A-0076E

Date: November 2, 2004
To: Those listed
Issued by: C. C. Chang - International Business Department
Subject: AUR400 and AUR450 Burner Controllers for Industrial Applications
Purpose: To announce the international sales release of the **AUR400** and **AUR450** dynamic self-checking burner controllers, which are used with the **AUD300** advanced UV sensor.

Background: The recently released **AUR300** and **AUR350** advanced UV relays are suitable for manual ignition burners. For automatic ignition burners, the **AUR300/350** user should use external devices for ignition sequence control, but it is difficult to satisfy combustion safety requirements with user instrumentation. The **AUR400** and **AUR450**, which have ignition sequence control, are introduced to provide safety for automatic ignition burners.



Required actions:

- (1) Explain flame safeguard concepts to users when selling the **AUR400/450**, using the CP-PC-1420E Flame Safeguard Controls general catalog.
- (2) For automatic ignition burners, introduce the **AUR400/450**. The **AUR300/350** is suitable for manual ignition burners.
- (3) When a user orders a batch-operation type Protectorelay (**RA890**, **R4750**, **FRS100** or others), check the user's application. For continuous operation burners, suggest the **AUR400/450**.
- (4) The **AUR400** and **AUR450** do not have prepurge timer functions. Use an external hardware timer for prepurge timing.
- (5) When information about a prior job exists, inform CP-IBD as soon as possible.
- (6) Promote sales of **EST** Series Smart Terminals or other Yamatake peripheral devices which enhance the **AUR450's** functions. **EST** sample application software for the **AUR450** is in preparation.

Features:**(1) Safety circuit**

Safety is ensured by a fail-safe start-checking circuit, as required in automatic burner ignition, and by a dynamic self-checking circuit that works with the **AUD300**.

- The ignition sequence is suspended when an abnormality is found before startup. If the abnormal condition continues for more than 10s, the sequence locks out.
- The ignition trial timing never becomes longer even if there is a timer failure, and the pilot valve never keeps flowing the unburned fuel.
- Critical interlock can be monitored by entering the lockout interlock input enabling the safety shutoff and lockout.
- Failures of the flame detection circuit and of the **AUD300** are detected for safety shutoff and lockout.
- With its contact circuit structure, the main valve and ignition transformer are never simultaneously ON even if there is a failure to prevent direct ignition of the main valve.

(2) Ignition sequence

- Models with either 4s or 8s ignition trial timing are available.
- Either intermittent pilot or interrupted pilot (with pilot only timing) are available, depending on how the device is wired.

(3) Instrumentation, usability

- Panel mounting size is minimized.
- The body can be attached and detached by a single touch on the wired subbase.
- Independent voltage-free contact outputs are available for the flame monitor signal and alarm signal.
- Alarm (lockout) can be reset not only by the RST switch on the front panel, but also by an external push-button switch.
- Analog 0 to 5V output for flame voltage is available for burner adjustment or flame condition monitoring.

(4) Maintenance and troubleshooting

Display function

- Status of ignition sequence, flame signal, alarm and event is indicated by LEDs. The FLAME LED changes color (AUR450) depending on the flame voltage level.
- Flame voltage, ignition sequence status, error codes and event codes are displayed on the 7-segment display (AUR450).

Communication function, PC loader (AUR450)

- AUR450 data can be transmitted to the EST Series or other devices via RS-485 communication.
- The AUR450 and Yamatake controllers are connectable to one communication line.
- Up to 15 units are connectable per communication port of the master device.
- A PC loader (soon to be released) monitors operation status, event status and maintenance data.

Selection guide:

AUR400 and AUR450 Dynamic self-checking burner controllers

Model No.	Ignition trial	Flame response	Power voltage	Communication, 7-segment display	
AUR400C8131000	8 ± 1s	3 ± 1s	100Vac	Without communication function and 7-segment display	
AUR400C8132000			200Vac		
AUR400C4131000	4 ± 1s		100Vac		With communication function and 7-segment display
AUR400C4132000			200Vac		
AUR450C8131000	8 ± 1s		100Vac		
AUR450C8132000			200Vac		
AUR450C4131000	4 ± 1s		100Vac		
AUR450C4132000			200Vac		

Optional parts for the AUR400/450

Model No.	Description
Q241A104	Mounting/wiring subbase for the AUR400/450