

AUR300C

Advanced Ultraviolet Burner Controller

Overview

The AUR300C is a burner controller with a dynamic self-checking function and is used in combination with the AUD300C or AUD500C Advanced Ultraviolet Flame Detector.

This AUR300C controls the built-in flame relay while checking if any malfunction has occurred in the UV detector or the AUR300C by driving the shutter of the UV detector.

If the detector or amplifier circuit fails for any reason, the AUR300C is not automatically energized and secures the safety of the system.

Features

- When any abnormality exists at the start of operation, the start-check relay is not energized, ensuring safety by not generating a signal to the main valve or flame output.
- Operation status can be confirmed by LED displays (power, shutter, start check and flame).
- Flame signal output (0 to 5Vdc) is provided as a standard function. This is useful for burner adjustment and flame status control.



Specifications

Item	Description	
Model	AUD300C12 _ _ _	AUD300C13 _ _ _
Flame failure response time	Nominal 1.5s, (max. 2s) at 3V flame voltage	Nominal 3s, (max. 4s) at 3V flame voltage
Flame voltage range (at rated voltage, room temp, and humidity)	Flame-out detection: 0.0 to 0.6Vdc Flame establishment: 1.5 to 4.0Vdc	
Recommended flame voltage	Stable 2.0Vdc or more	
Compatible flame detector	AUD300C, AUD500C	
Rated power supply voltage	100Vac or 200Vac at 50/60Hz	
Allowable voltage range	85 to 110% of rated power supply voltage	
Power consumption	10W max. (with AUD300C/500C)	
Dielectric strength	1500Vac 50/60Hz 1min or 1800Vac 50/60Hz 1s Application points: Between ground and primary terminals 1 to 8 units (except 9 to 14)	
Insulation resistance	100MΩ min. by a 500Vdc megger Measurement points: Between ground and primary terminals 1 to 8 units (except 9 to 14)	
Induced thunderbolt surge	10kV, 1.2/50μs (JEC-187: 75Ω min. surge impedance) The surge absorber listed hereunder must be connected between the power supply terminal (No. 1 terminal) and the ground. • Recommended surge absorber: Part No. 83968019-001	
Service life	7 years or 100,000 cycles (operation cycles of each relay)	
Ambient temperature	-20 to +60°C	
Storage temperature	-20 to +70°C	
Ambient humidity	90%RH at 40°C max.	
Vibration resistance	4.9m/s ² max., 10 to 55Hz for 2 hours each in X, Y and Z directions	
Mounting posture	Wall mounting (vertical or horizontal mounting)	
Color	White	
Mass	Approx. 1.2kg	

Model selection table

Basic No.	Function	Flame response	Power supply	Additional processing	Description
AUR300C	1				Advanced Ultraviolet Burner Controller
					Fixed
		2			Nominal 1.5s (max. 2s)
		3			Nominal 3s (max. 4s)
			1		100Vac
			2		200Vac
				00	No additional processing
				D0	Inspection certificate provided
				T0	Tropicalization treatment applied
				DT	Tropicalization treatment applied and inspection certification provided

Configuration

● Combined flame detector

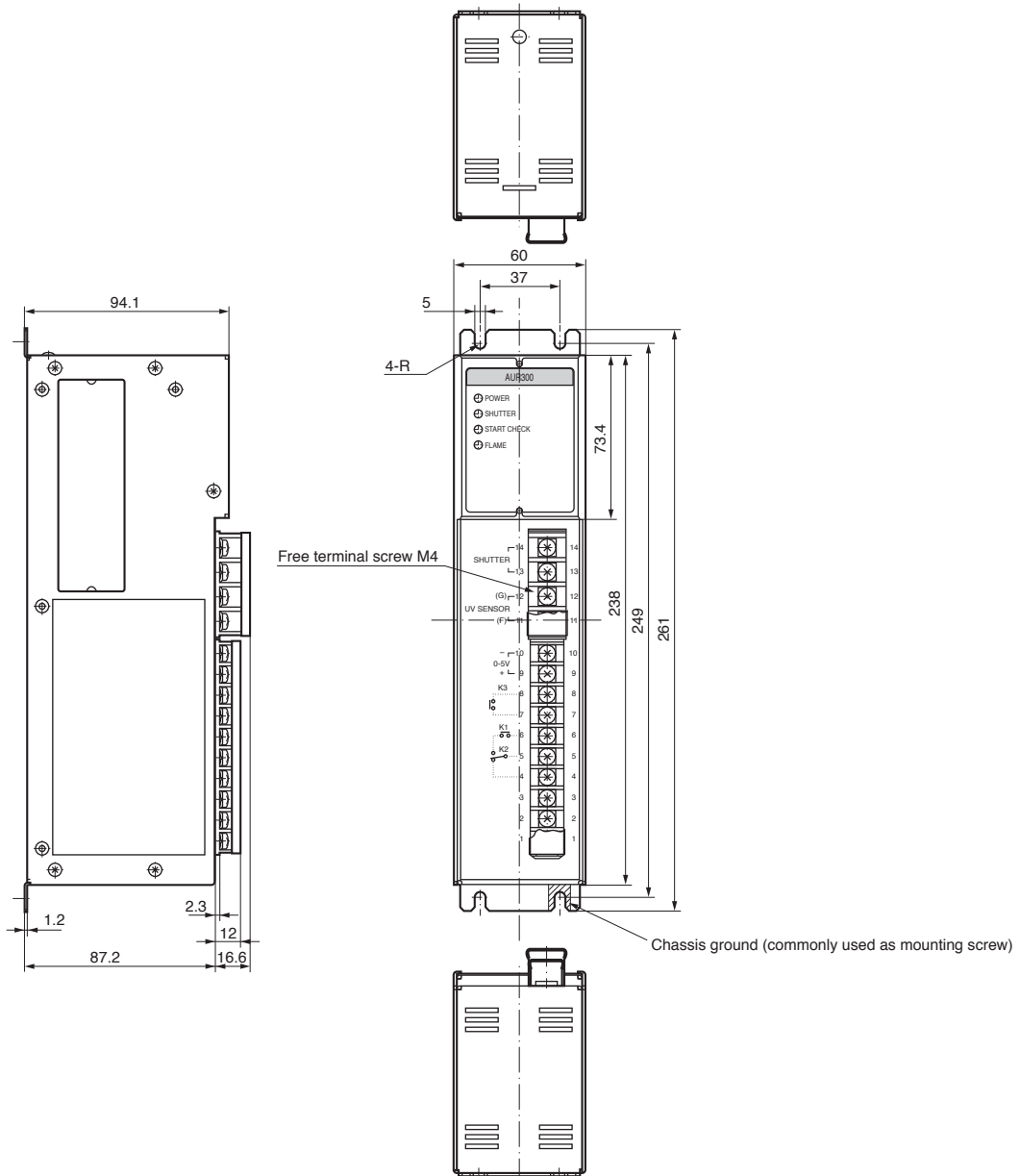
Model No.	Description
AUD300C1000	Advanced Ultraviolet Flame Detector
AUD500C11000	Explosion-proof Advanced Ultraviolet Flame Detector

● Optional parts

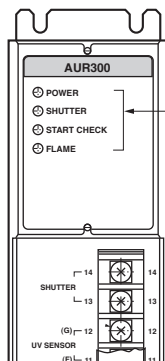
Model No.	Description
FSP300C100	Flame simulator
FSP136A100	Analog flame meter
83968019-001	Surge absorber

Dimensions

(Unit: mm)



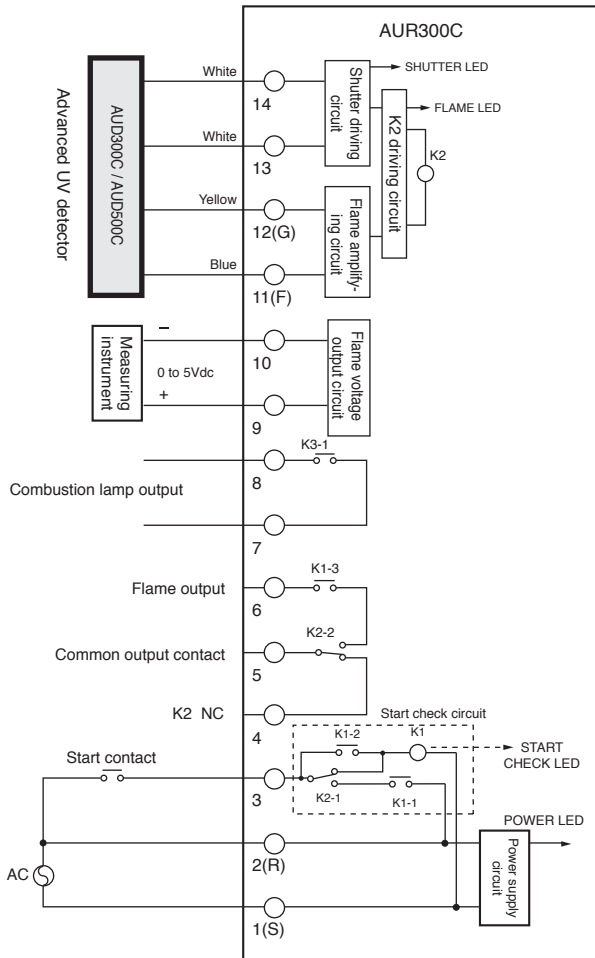
LED indicators



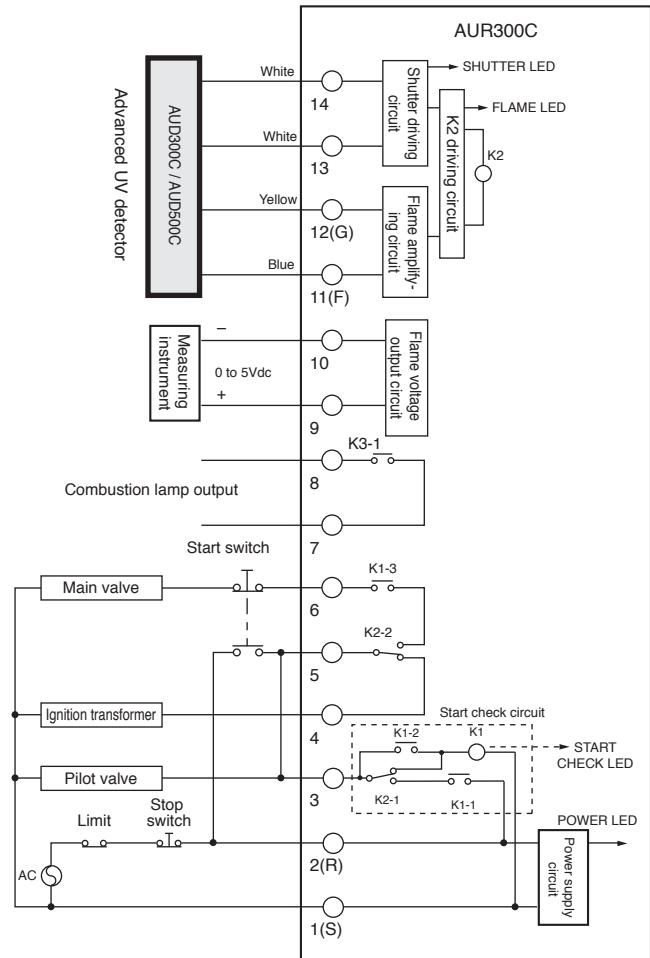
Name	Color	Description
POWER	Green	Lit when power supply is ON
SHUTTER	Green	Lit when shutter is closed
START CHECK	Green	Synchronous with K1 relay (start check)
FLAME	Green	Synchronous with K2 relay (flame detection)

Wiring

● Monitoring of burner flame



● Manual ignition (intermittent pilot)



K1: Start check
K2: Flame detection
K3: Combustion lamp

Terminal No.

Terminal No.	Description	Electrical rating
1	Power supply (S) ground side	100/200Vac 50/60Hz
2	Power supply (R) high-voltage side	
3	Start input	—
4	Flame output (K2)	5A 250V (cos ϕ =1)
5	Common output contact	—
6	Flame output (K1, K2)	5A 250V (cos ϕ =1)
7	Combustion lamp output (K3)	3A 250V (cos ϕ =1) *1
8	Combustion lamp output (K3)	
9	Flame voltage output (+)	0 to 5Vdc *2
10	Flame voltage output (-)	
11	AUD300C F-terminal (blue)	—
12	AUD300C G-terminal (yellow)	
13	AUD300C Shutter (white)	
14	AUD300C Shutter (white)	

*1 Operation is the same as for the K2 relay. (However, since a start-checking function is not provided, do not use for combustion control, but only for combustion monitoring.)

*2 Use a measuring instrument with an input impedance of 100K Ω min. To connect this device, use IV lead wires of 0.75mm² no longer than 10m.

*3 Shutter does not have polarity.

Cautions

- (1) Do not install the flame relay in the following locations:
 - Near the following chemicals or where their vapors are present: ammonia, sulfur, chlorine, ethylene compounds, acid, or any other corrosive gases.
 - Locations subject to water spray
 - Locations subject to continuous vibration
- (2) Before wiring, be sure to turn the power off. Touching terminals by mistake while the power is on may damage the device or result in malfunction, or electrical shock.
- (3) After completing wiring, be sure to check all wiring connections. Incorrect wiring may damage the device or result in malfunction. In particular, as the flame detector (11(F)-12(G) terminals) has polarity, a reversed connection of F and G will result in the malfunction of the detector tube unit.
- (4) Use a dedicated packing case when transporting or storing this detector.
- (5) Do not bundle the power leads together with the flame detector signal lead wires, nor place them in the same conduit. Use independent cables.
- (6) Do not short-circuit the start input (terminals 2 and 3) to operate the device by turning the power supply on or off. This interferes with the device's start-checking function.
- (7) This device must be grounded with a resistance less than 100Ω according to the technical standards for electrical facilities. Be sure to ground the device.
- (8) Make sure that the ignition transformer high-voltage cables are properly connected in order to prevent faulty contacts. If there is a poor contact, radio frequency waves may be generated, resulting in errors from radio interference. Install the ignition transformer directly onto a metal part electrically connected to the burner.
- (9) Protection against induced lightning surge is not provided in this device. When adding surge protection, connect the protection device between terminal No.1 and the ground. Recommended surge absorber: Part No. 83968019-001
- (10) Turning the power supply on and off quickly may result in malfunction. Wait an interval of approx. 3s before turning the device on or off again.
- (11) Electricity may remain in No.11 (F) terminal even after the power supply is turned off. Touching the terminal within 1 min after the power has been turned off might result in electric shock. Do not touch the No.11 (F) terminal soon after the power has been turned off.
- (12) Combustion lamp output operates in the same way as K2. However, since start-checking is not provided, do not use the combustion lamp for combustion control, but only for combustion monitoring.

Please read the "Terms and Conditions" from the following URL before ordering or use:

<http://www.azbil.com/products/bi/order.html>

Specifications are subject to change without notice.

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