

Flame Safeguard Control Advanced Ultraviolet Detector AUD300C2000

The AUD300C2000 is a flame detector designed to sense the ultraviolet radiation produced by the combustion of gas or oil burner fuels.

This detector is used in combination with the dedicated AUR300C/AUR350C Advanced Ultraviolet Relay. Any malfunction that has occurred in the UV detector or UV relay can be accurately detected by the dynamic self-checking function of the built-in shutter driven by the relay, thus facilitating highly reliable combustion control.



■ Features

- Replacement parts such as the tube and shutter can be handled as a single unit, thereby simplifying replacement and maintenance.
- As a flame detector, the AUD300C2000 is compact and lightweight, allowing easy installation.
- Excellent environmental specifications. Ambient temperature to 100°C, IP66, vertical mounting possible and wiring distance up to 200m.

■ Specifications

Item	Description
Applicable flames	City gas, Natural gas, Propane gas, Kerosene, Heavy oil, Coke oven gas, Hydrogen, Chlorine, Ammonia, Naphtha, Ethylene, etc.
Shutter voltage	Approx. 24Vdc (supplied from AUR UV relay)
Self-checking cycle	Approx. 75 cycles/ min.
Insulation resistance	Between flange unit mounting conduit and F-terminal (or blue lead wire), G-terminal (or yellow lead wire), S1-terminal (or white lead wire), and S2-terminal (or white lead wire): 50MΩ min. by a 500Vdc megger at each of the above locations. (The AUD10 tube unit must be dismantled.)
Dielectric strength	Between flange unit mounting conduit and F-terminal (or blue lead wire), G-terminal (or yellow lead wire), S1-terminal (or white lead wire), and S2-terminal (or white lead wire): 1500Vac for 1 min or 1800Vac for 1 sec at each of the above locations. (The AUD10 tube unit must be dismantled.)
Ambient temperature	-20 to +100°C while sensing flames (while shutter is opening and closing)
Ambient storage temperature	-20 to +70°C
Ambient storage 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
Impact resistance	300m/s ² in vertical and horizontal directions
Pressure resistance for flange	350kPa
Protection	IP66 (except for electric wiring pipe mounting conduit)
Mounting direction	-45 to +90° (vertical mounting)
Mounting	G1 (at the mounting section for sighting pipe)
Lead wires	AWG18 heat resistant silicone cables, with 2.4m color lead wires
Electric wire pipe mounting conduit	1/2-14NPSM
Flame signal wire requirements and extension distance	Requirements: 600V vinyl insulation wires, IV wires with 2.0 mm ² , max. 200m
Materials	Main body: Heat-resistant resin Mounting section: Aluminum
Main body color	Purple
Weight	Approx. 630g
UV tube effective service life	Replace after 25,000 hours of use or the specified lifespan (3 years) marked on UV tube

Model No.

Model No.	Description
AUD300C2000	Advanced UV Detector
AUD300C200D	Advanced UV Detector with inspection certificate

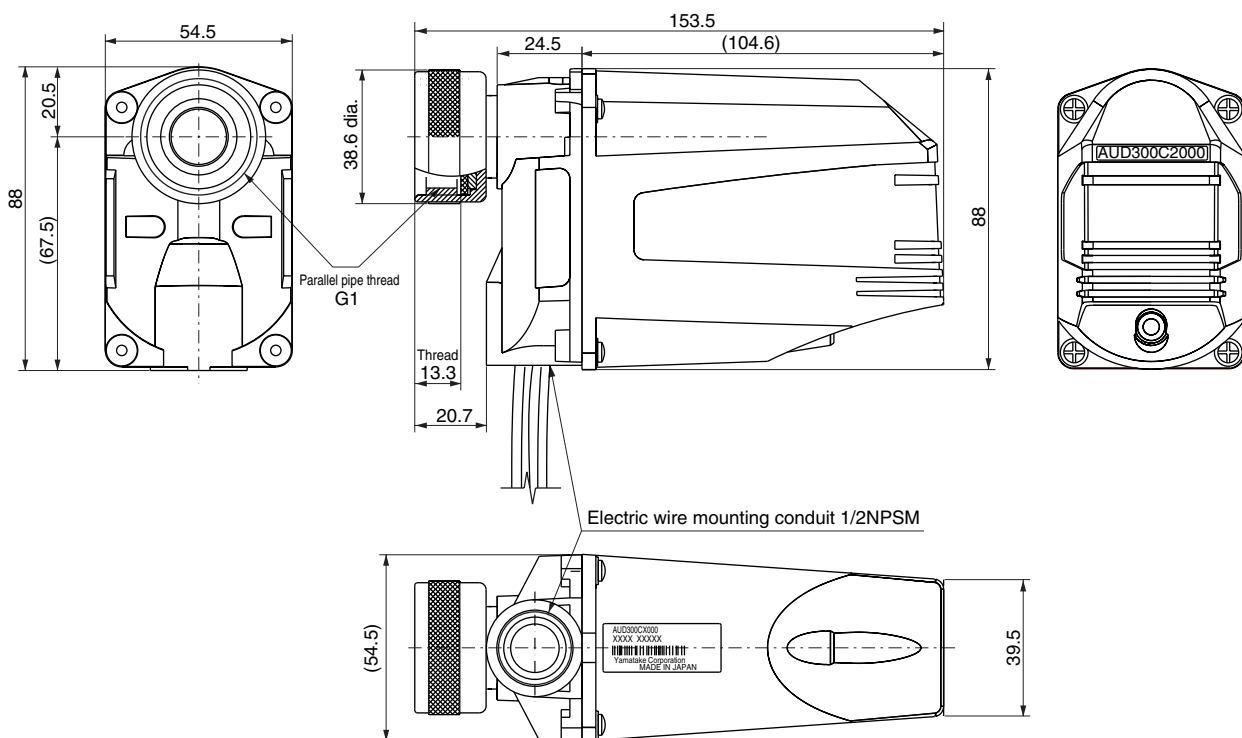
Replacement/optional parts

Model No.	Description
AUD10C2000	Tube unit
AUD50A2000	Shutter unit
81446925-002	Cover
81409780-001	Bushing 1 x 3/4

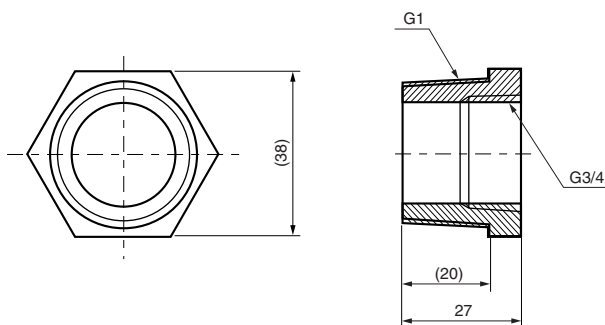
Dimensions

Body

(Unit: mm)



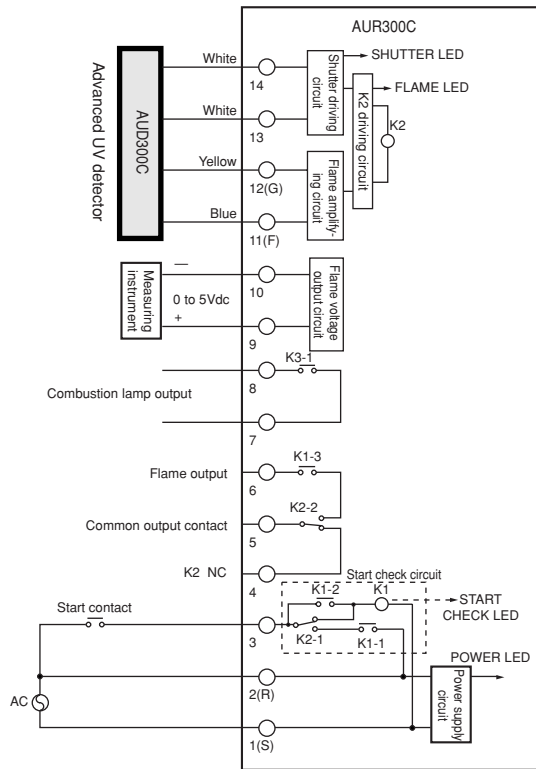
Bushing



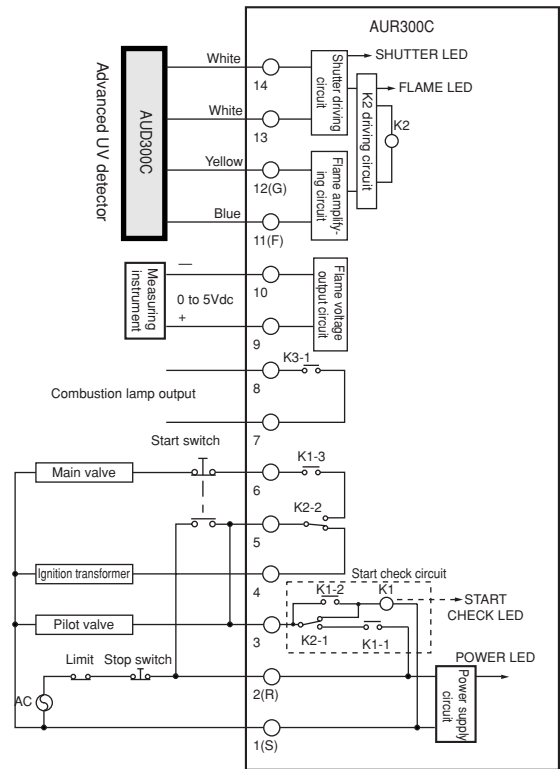
■ Wiring

1. Combination with AUR300C

● Burner flame monitoring



● Manual ignition type (intermittent pilot)



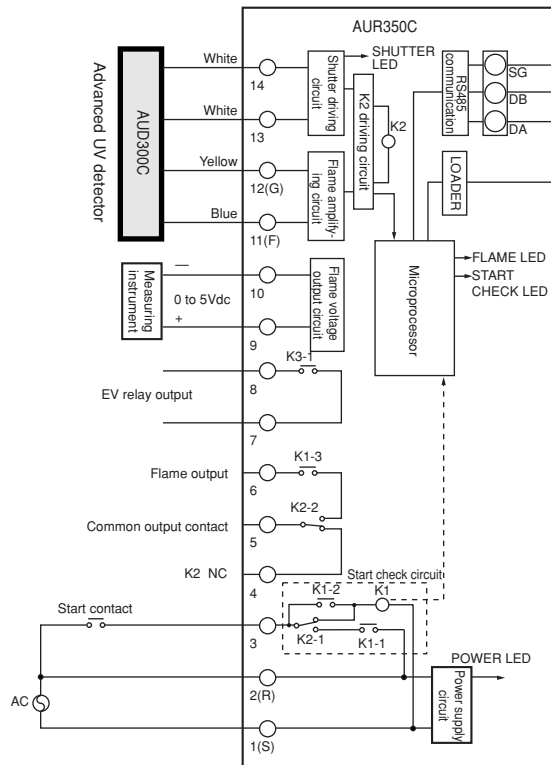
K1: Start check
K2: Flame detection
K3: Combustion lamp

! Handling Precautions

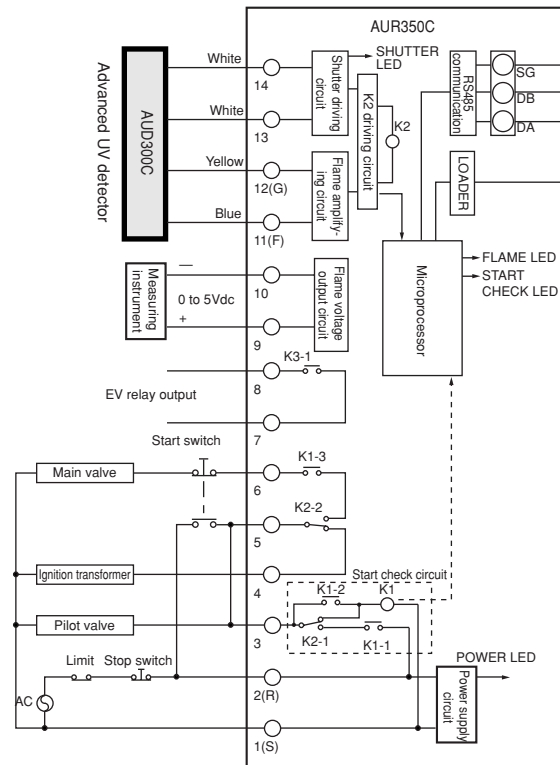
- If the high-voltage side (H) of the power supply is distinguished from the grounded side (G), the high electrical potential side (H) is connected to terminal 2 (R) and the grounded side (G) to terminal 1 (S).
- When necessary, use an overload prevention device with the power supply.

2. Combination with AUR350C

● Burner flame monitoring



● Manual ignition type (intermittent pilot)



Handling Precautions

- If the high-voltage side (H) of the power supply is distinguished from the grounded side (G), the high electrical potential side (H) is connected to terminal 2 (R) and the grounded side (G) to terminal 1 (S).
- When necessary, an overload prevention device is used for the power supply.
- For wiring of the power supply, use a JIS C 3306 compliant electric cable having a cross sectional area of 0.75 mm² or more (wire diameter: 0.18mm, number of strand wires: 30).
- Connect a flat FS4.8-series connector (AMP's 187-series receptacle or equivalent) to one end of the electric cable and make the wiring as short as possible.
- When the equipment stops for 4 hours or more, the playback data is deleted.

Cautions

- (1) The flame detector has an important role in maintaining safety by monitoring the burner flame. Please adhere to the procedures for safe usage stated in the user's manual.
- (2) Do not mount the flame detector 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 continuous vibration
- (3) When used where a UV ray source exists other than the flame, take precautions so that no UV ray other than that of the burner is detected.
- (4) Before wiring, be sure to turn the power off. Touching terminals by mistake while the power is on might result in electric shock or malfunction.
- (5) The flame detector has polarity. Correctly connect the wiring to the terminals indicated on the device (F-terminal and G-terminal). The attached blue cable is for the F-terminal, and the yellow cable is for the G-terminal.
- (6) Use a dedicated packing case when transporting or storing this detector.
- (7) Do not bundle the power leads together with the flame detector signal lead wires, nor place them in the same conduit. Use independent cables.
- (8) Make sure that the ignition transformer high-voltage cables are properly connected in order to prevent faulty contacts. If there is poor contact, radio frequency waves may be generated and this could cause errors from radio interference. Install the ignition transformer directly onto a metal surface electrically connected to the burner.
- (9) The flame detector contains a glass tube. Do not subject it to vibration or shock. In particular, when transporting combustion equipment, be sure to pack it in a dedicated packing case.

RESTRICTIONS ON USE

This product has been designed, developed and manufactured for general-purpose application in machinery and equipment. Accordingly, when used in the applications outlined below, special care should be taken to implement a fail-safe and/or redundant design concept as well as a periodic maintenance program.

- **Safety devices for plant worker protection**
- **Start/stop control devices for transportation and material handling machines**
- **Aeronautical/aerospace machines**
- **Control devices for nuclear reactors**

Never use this product in applications where human safety may be put at risk.

Specifications are subject to change without notice.

YAMATAKE

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