YAMATAKE

Specification

Flame Safeguard Control

Advanced Ultraviolet Sensor AUD300C

The AUD300C 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 Advanced Ultraviolet Relay. Any malfunction that has occurred in the AUD300C or AUR300C amplifier circuit can be detected by the accurate dynamic self-checking function of the built-in shutter driven by the relay, thus facilitating highly reliable combustion control.

■ Features

- Maintenance parts such as the tube unit and shutter unit can be handled as a single unit, thereby simplifying replacement and maintenance.
- As a flame sensor, the AUD300C is compact and light weight, thus, facilitating installation.
- Excellent environmental specifications. Ambient temperature 120°C, IP66, vertical mounting possible and wiring distance 200m max.

■ 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 AUR300C)
Self-checking cycle	Approx. 75 cycles/ min.
Insulation resistance	Between flange unit mounting conduit and F-terminal (or blue lead wire), between flange unit mounting conduit and G-terminal (or yellow lead wire), between flange unit mounting conduit and S1-terminal (or white lead wire), between flange unit mounting conduit and S2-terminal (or white lead wire): 50MΩ min. by 500Vdc megger at the above each location. (The AUD10 tube unit must be dismounted.)
Dielectric strength	Between flange unit mounting conduit and F-terminal (or blue lead wire), between flange unit mounting conduit and G-terminal (or yellow lead wire), between flange unit mounting conduit and S1-terminal (or white lead wire), between flange unit mounting conduit and S2-terminal (or white lead wire): 1500Vac for 1 min or 1800Vac for 1 sec at the above each location. (The AUD10 tube unit must be dismounted.)
Ambient temperature	–20 to +120°C while sensing flames (while shutter opening and closing) 100°C max. while sensing no flames (while shutter kept open continuously)
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
Pressure resistance for flange	350kPa
Protection	IP66 (except an electric wiring pipe mounting conduit)
Mounting position	–45 to +90° (in vertical direction)
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. 200 m
Materials	Main body: Heat resistant resin (PPS + PPE + GF40) Mounting section: Aluminum
Main body color	Purple
Weight	Approx. 450g
UV tube effective service life	UV tube to be replaced after 25,000 hours of use or the specified lifespan (3 years) marked on UV tube

■ Model No.

Model No.	Description
AUD300C1000	Advanced UV Sensor
AUD300C100D	Advanced UV Sensor with inspection certificate

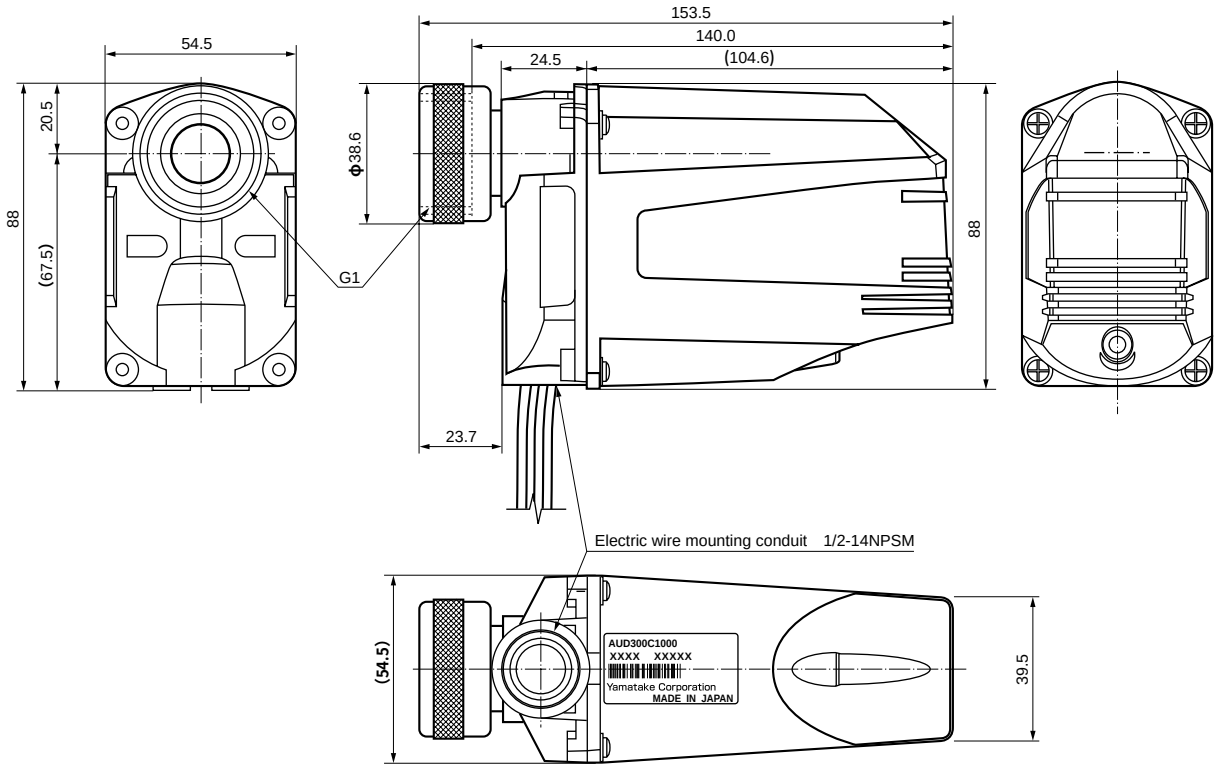
■ Maintenance/optional parts

Model No.	Description
AUD10C1000	Tube unit
AUD50A1000	Shutter unit
81409780-001	Bushing 1 x 3/4

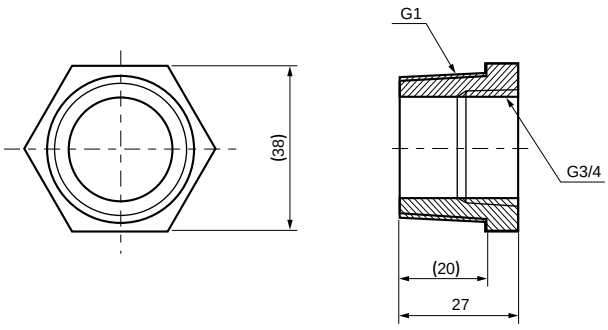
■ Dimensions

● Body

(Unit: mm)

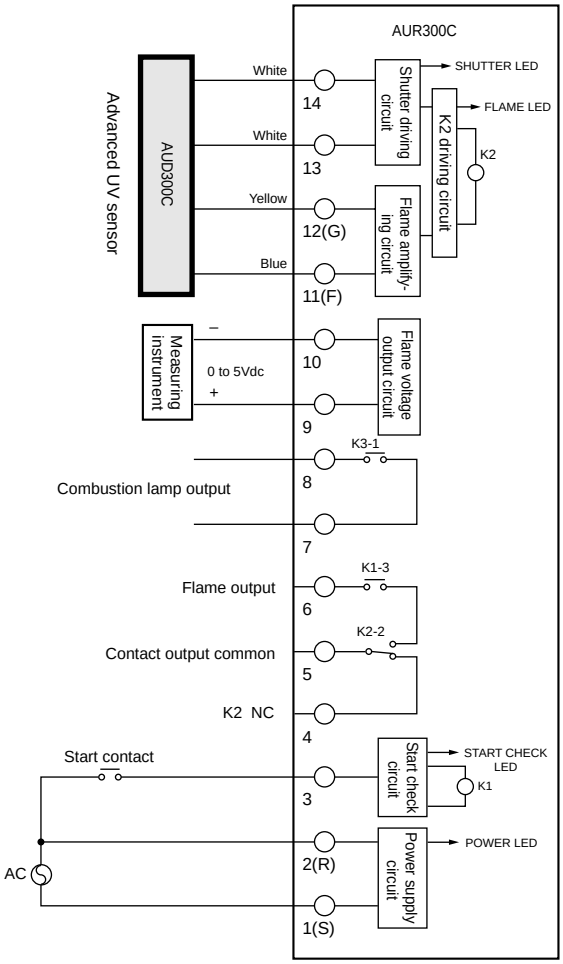


● Bushing

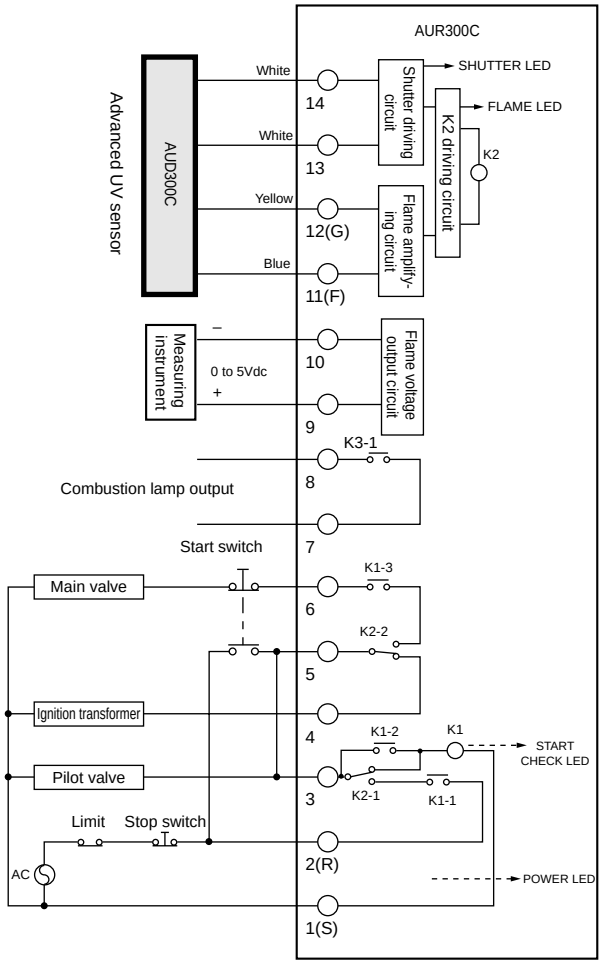


■ Wiring

● Burner flame monitoring



● Manual ignition type (interrupted pilot)



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

Cautions

(1) The flame sensor has an important role for safety in monitoring the burner flame.
Please adhere the procedures for safe usage stated in the user's manual.

(2) Do not mount the flame sensor in the following locations:
- Locations near special chemicals or in atmospheres containing ammonia, sulfur, chlorine, ethylene compounds, acid, or any other corrosive gases.
- Locations subject to continuous vibration

(3) When used in atmospheres where an UV ray source exists other than the flame, take countermeasures so that no other UV ray other than that of 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 sensor has polarity. Correctly connect the wiring to the terminals indicated on the device (F-terminal and G-terminal). The attached blue cable is F-terminal, and yellow cable is G-terminal.

(6) Use a dedicated packing case when transporting or storing this sensor.

(7) Do not bundle the power leads together with the flame sensor 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 a poor contact, radio frequency waves may be generated and this could cause errors from radio interference. Install the ignition transformer directly onto a metal portion electrically connected to the burner.

(9) The flame sensor is made of a glass tube. Do not subject it to vibration or shock. In particular, when transporting combustion equipment, be sure to pack the sensor in a dedicated packing case.

⚠ CAUTION

The product has been designed, developed and manufactured for general purpose applications for machinery and equipment. The product shall be handled with extra caution to provide fail-safe and/or redundant design in the applications that require strict safety as those listed below.

- applications pertaining to the protection of human life

- applications pertaining directly to controlling transportation equipment and machinery (start/stop control, etc.)

- applications pertaining to aircraft - applications pertaining to spacecraft - applications pertaining to nuclear reactors

Do not use this device in applications where the device's functions are directly responsible for human safety.

Specifications are subject to change without notice.

YAMATAKE

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