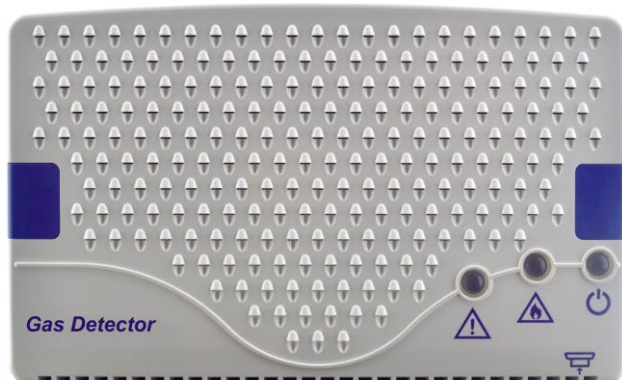


ML-292X SERIES, 24V DC, GAS DETECTORS (LPG/NATURAL GAS)

ML-292X-R SERIES, 24V DC, GAS DETECTORS (LPG/NATURAL GAS) WITH 10A ALARM RELAY

ML-292X-RS SERIES, 24V DC, GAS DETECTORS (LPG/NATURAL GAS) WITH 10A AND 0.5A ALARM RELAYS

LPG GAS DETECTORS



NATURAL GAS DETECTORS



It is designed **to detect gas leaks** in enclosed areas such as houses, garages, and similar indoor environments, and to provide audible and visual alarms. The detectors must not be used in open or semi-open areas such as terraces and balconies.

Classification: **Type 1 (devices designed for use in residential or light industrial environments)**

The **ML-221X / ML-222X series** is compatible with all conventional fire alarm panels.

It operates with a **24V DC** supply voltage via an external power source.

GENERAL FEATURES

- Compliant with **EN 50194-1, EN 50270, and EN 61000-6-3** standards
- Capable of detecting LPG/Methane gases within a **50 m²** area using a single detector
- Provides alarm when the gas concentration reaches **(15±5)% LEL alarm threshold**
- Model options available for detecting **LPG (Butane + Propane) and Natural Gas (Methane)**
- **For relay models with 10A relay:** relay output capacity of **10A-250V AC / 5A-30V DC**;
for relay models with 0.5A relay: relay output capacity of **100mA 50V DC**
- High sensitivity detection with **semiconductor sensor technology**
- Available in **relay and non-relay versions**
- Model option with built-in **short circuit isolator**
- **IP42D** protection rating
- Status indicators: **Green – Power, Red – Alarm, Yellow – Fault LEDs**
- **Test Button** for checking LED, Buzzer, and Relay functions
- Compatible with **Maxlogic series** conventional fire alarm panels
- **Navy blue frame color** for models detecting **LPG**
- **Orange frame color** for models detecting **Natural Gas**

DETECTOR OPERATION

- When the device is powered on, the Power LED lights up. During the warm-up period (180 seconds), the Yellow (Fault) and Red (Alarm) LEDs flash. At the end of this period, the detector becomes ready for gas detection.
- All fault conditions are indicated by the Yellow "Fault" LED on the detector. The Alarm LED and internal buzzer can be tested using the "Test" button on the device.
- Throughout its operation, the detector performs periodic self-calibration to ensure more stable detection performance.

Functionality Check for Natural Gas and LPG Detectors

While the "Power LED" is on, bring a lighter (without igniting it) close to the gas inlet of the device. Apply gas to the detector for less than 30 seconds. If the device enters alarm mode, the test is considered successful. It is recommended to perform this test once a month.

INSTALLATION AND MOUNTING

Methane (Natural Gas) Detectors

Natural gas, which is mainly composed of methane, is lighter than air and rises toward the ceiling in the event of a leak. Therefore, natural gas detectors should be installed 5–15 cm below the ceiling and approximately 150 cm away horizontally from the gas source. (See Installation Diagram, Figure A)

LPG (Butane + Propane) Detectors

LPG, composed of butane and propane, is heavier than air and tends to accumulate near the ground during a leak. Therefore, LPG detectors should be installed 15–25 cm above the floor level and approximately 150 cm away horizontally from the gas source. (See Installation Diagram, Figure B)

TECHNICAL FEATURES

Common Features:

Power Consumption	Operating Temperature & Relative Humidity	Alarm Sounder	Visual Alarm	Body
3W	(-10°C) – (55°C), %0-95 Rh (non-condensing)	Piezoelectric buzzer, 85dB/1m	Alarm Led (Red), Fault Led (Yellow)	ABS
Protection Class	Dimensions (mm)	Sensor Type	Service Life	Color
IP42D	150x95x50	Semiconduct	5 years	White

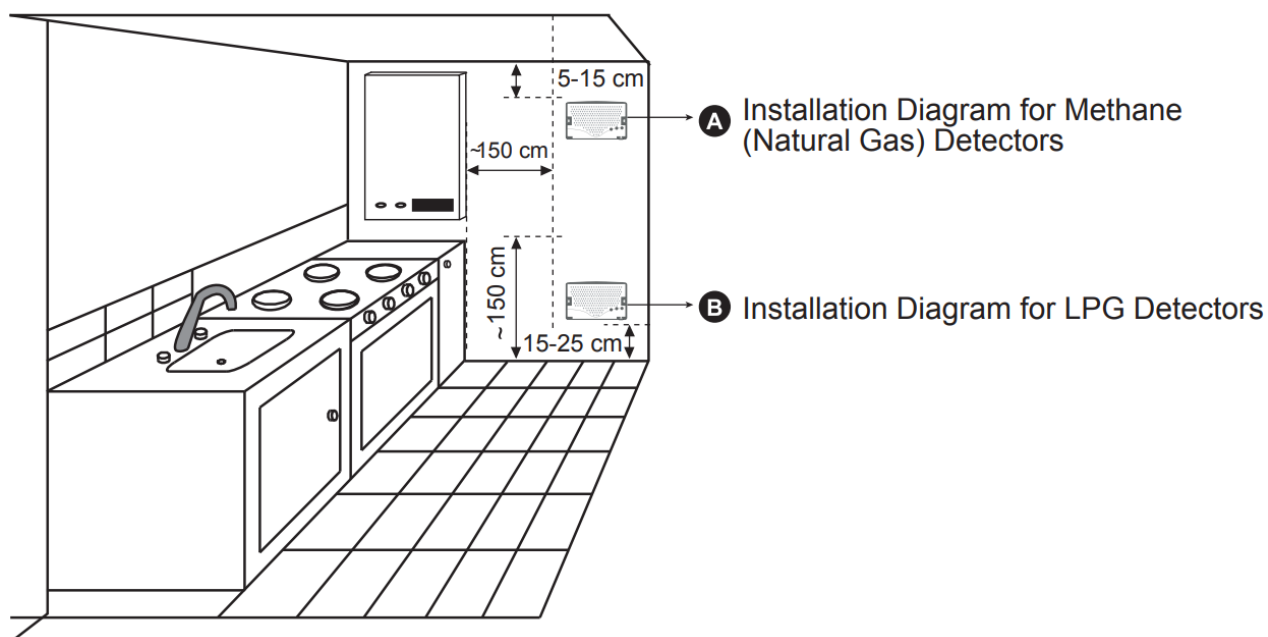
Features Varying by Model

	ML-292L	ML-292L-R	ML-292L-RS	ML-292M	ML-292M-R	ML-292M-RS
Model Type	Conventional	Conventional	Conventional	Conventional	Conventional	Conventional
Gas Type	LPG Border Color: Navy Blue	LPG Border Color: Navy Blue	LPG Border Color: Navy Blue	Natural Gas Border Color: Orange	Natural Gas Border Color: Orange	Natural Gas Border Color: Orange
Alarm Level	%(15±5) LEL	%(15±5) LEL	%(15±5) LEL	%(15±5) LEL	%(15±5) LEL	%(15±5) LEL
Power Supply Voltage	24V DC (21V – 30V DC)	24V DC (21V – 30V DC)	24V DC (21V – 30V DC)	24V DC (21V – 30V DC)	24V DC (21V – 30V DC)	24V DC (21V – 30V DC)
Relay Output	No Relay	10A 250V AC 5A 30V DC	Relay 1: 10A 250V AC 5A 30V DC Relay 2: 100mA 50V DC	No Relay	10A 250V AC 5A 30V DC	Relay 1: 10A 250V AC 5A 30V DC Relay 2: 100mA 50V DC
Weight (approximate)	200g	200g	200g	200g	200g	200g
Warm-up Time	180s	180s	180s	180s	180s	180s
Alarm Duration	<30s	<30s	<30s	<30s	<30s	<30s
Fault Duration	<4min	<4min	<4min	<4min	<4min	<4min

MODELS

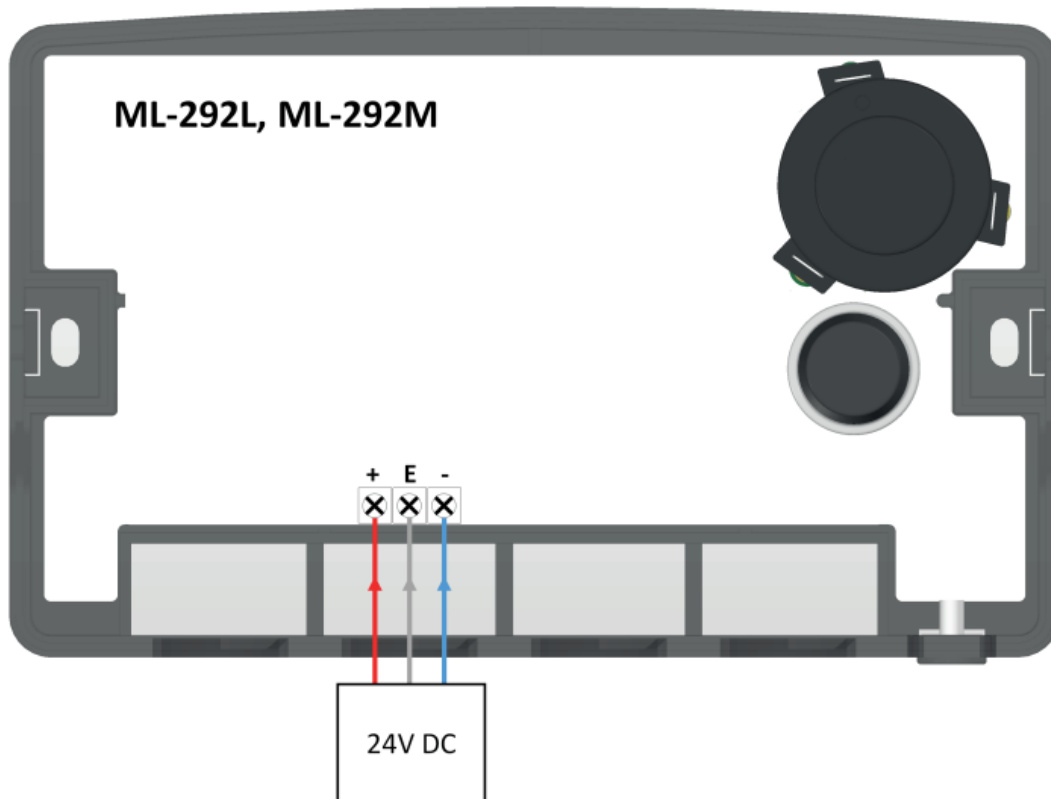
Model	Description
ML-292L	Maxlogic Gas Detector, LPG, 24V DC
ML-292L-R	Maxlogic Gas Detector, LPG, 24V DC, 10A Alarm Relay
ML-292L-RS	Maxlogic Gas Detector, LPG, 24V DC, 10A and 0.5A Alarm Relays
ML-292M	Maxlogic Gas Detector, Methane (Natural Gas), 24V DC
ML-292M-R	Maxlogic Gas Detector, Methane (Natural Gas), 24V DC, 10A Alarm Relay
ML-292M-RS	Maxlogic Gas Detector, Methane (Natural Gas), 24V DC, 10A and 0.5A Alarm Relays

MOUNTING SCHEME

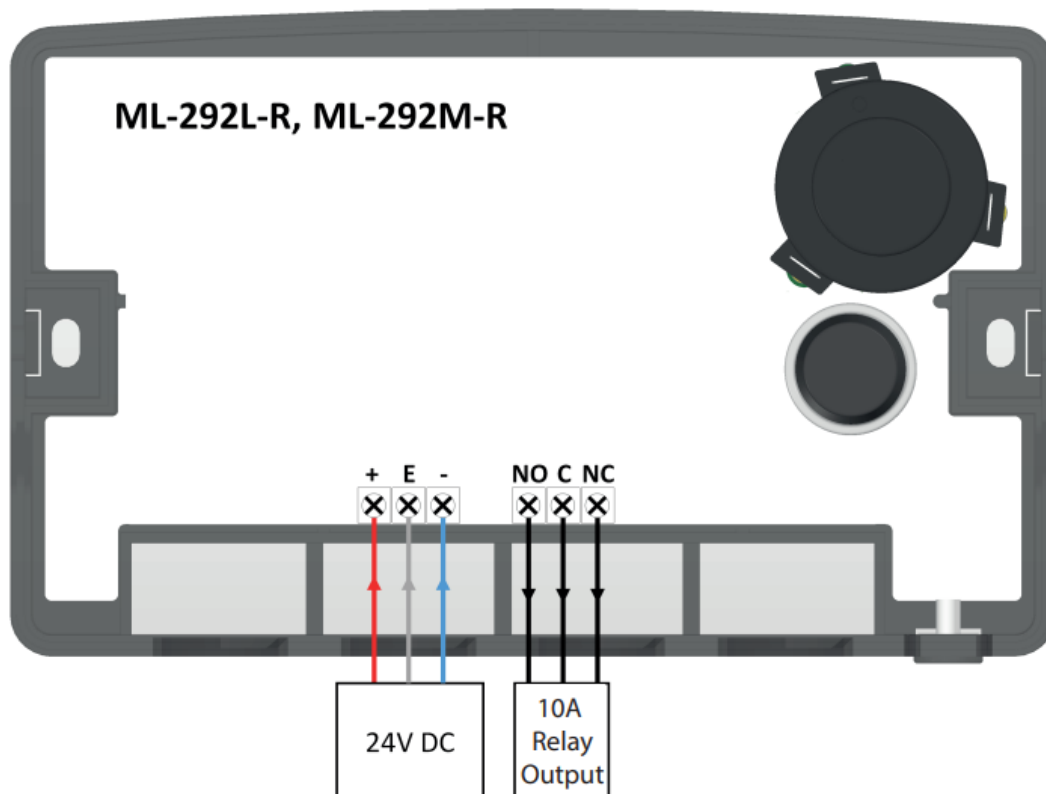


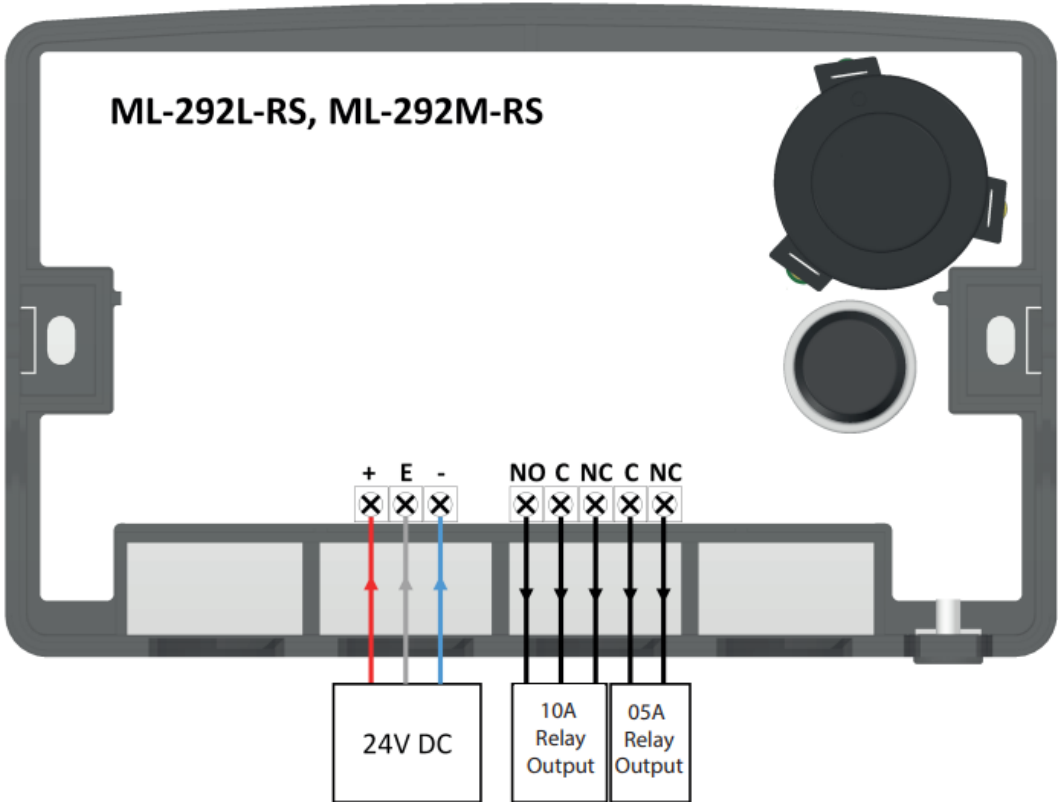
CONNECTION SCHEME

ML-292L, ML-292M



ML-292L-R, ML-292M-R



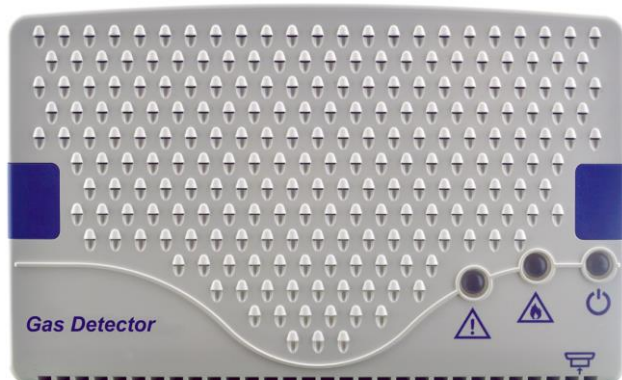


ML-293X SERIES, 230V AC, GAS DETECTORS (LPG/NATURAL GAS)

ML-293X-R SERIES, 230V AC, GAS DETECTORS (LPG/NATURAL GAS) WITH 10A ALARM RELAY

ML-293X-RS SERIES, 230V AC, GAS DETECTORS (LPG/NATURAL GAS) WITH 10A AND 0.5A ALARM RELAYS

LPG GAS DETECTORS



NATURAL GAS DETECTORS



It is designed **to detect gas leaks** in enclosed areas such as houses, garages, and similar indoor environments, and to provide audible and visual alarms. The detectors must not be used in open or semi-open areas such as terraces and balconies.

Classification: **Type 1 (devices designed for use in residential or light industrial environments)**

The **ML-221X / ML-222X series** is compatible with all conventional fire alarm panels.

It operates with a **230V AC** supply voltage via an external power source.

GENERAL FEATURES

- Compliant with **EN 50194-1, EN 50270, and EN 61000-6-3** standards
- Capable of detecting LPG/Methane gases within a **50 m²** area using a single detector
- Provides alarm when the gas concentration reaches **(15±5)% LEL alarm threshold**
- Model options available for detecting **LPG (Butane + Propane) and Natural Gas (Methane)**
- **For relay models with 10A relay:** relay output capacity of **10A-250V AC / 5A-30V DC**;
for relay models with 0.5A relay: relay output capacity of **100mA 50V DC**
- High sensitivity detection with **semiconductor sensor technology**
- Available in **relay and non-relay versions**
- Model option with built-in **short circuit isolator**
- **IP42D** protection rating
- Status indicators: **Green – Power, Red – Alarm, Yellow – Fault LEDs**
- **Test Button** for checking LED, Buzzer, and Relay functions
- Compatible with **Maxlogic series** conventional fire alarm panels
- **Navy blue frame color** for models detecting **LPG**
- **Orange frame color** for models detecting **Natural Gas**

DETECTOR OPERATION

- When the device is powered on, the Power LED lights up. During the warm-up period (180 seconds), the Yellow (Fault) and Red (Alarm) LEDs flash. At the end of this period, the detector becomes ready for gas detection.
- All fault conditions are indicated by the Yellow "Fault" LED on the detector. The Alarm LED and internal buzzer can be tested using the "Test" button on the device.
- Throughout its operation, the detector performs periodic self-calibration to ensure more stable detection performance.

Functionality Check for Natural Gas and LPG Detectors

While the "Power LED" is on, bring a lighter (without igniting it) close to the gas inlet of the device. Apply gas to the detector for less than 30 seconds. If the device enters alarm mode, the test is considered successful. It is recommended to perform this test once a month.

INSTALLATION AND MOUNTING

Methane (Natural Gas) Detectors

Natural gas, which is mainly composed of methane, is lighter than air and rises toward the ceiling in the event of a leak. Therefore, natural gas detectors should be installed 5–15 cm below the ceiling and approximately 150 cm away horizontally from the gas source. (See Installation Diagram, Figure A)

LPG (Butane + Propane) Detectors

LPG, composed of butane and propane, is heavier than air and tends to accumulate near the ground during a leak. Therefore, LPG detectors should be installed 15–25 cm above the floor level and approximately 150 cm away horizontally from the gas source. (See Installation Diagram, Figure B)

TECHNICAL FEATURES

Common Features:

Power Consumption	Operating Temperature & Relative Humidity	Alarm Sounder	Visual Alarm	Body
3W	(-10°C) – (55°C), %0-95 Rh (non-condensing)	Piezoelectric buzzer, 85dB/1m	Alarm Led (Red), Fault Led (Yellow)	ABS
Protection Class	Dimensions (mm)	Sensor Type	Service Life	Color
IP42D	150x95x50	Semiconduct	5 years	White

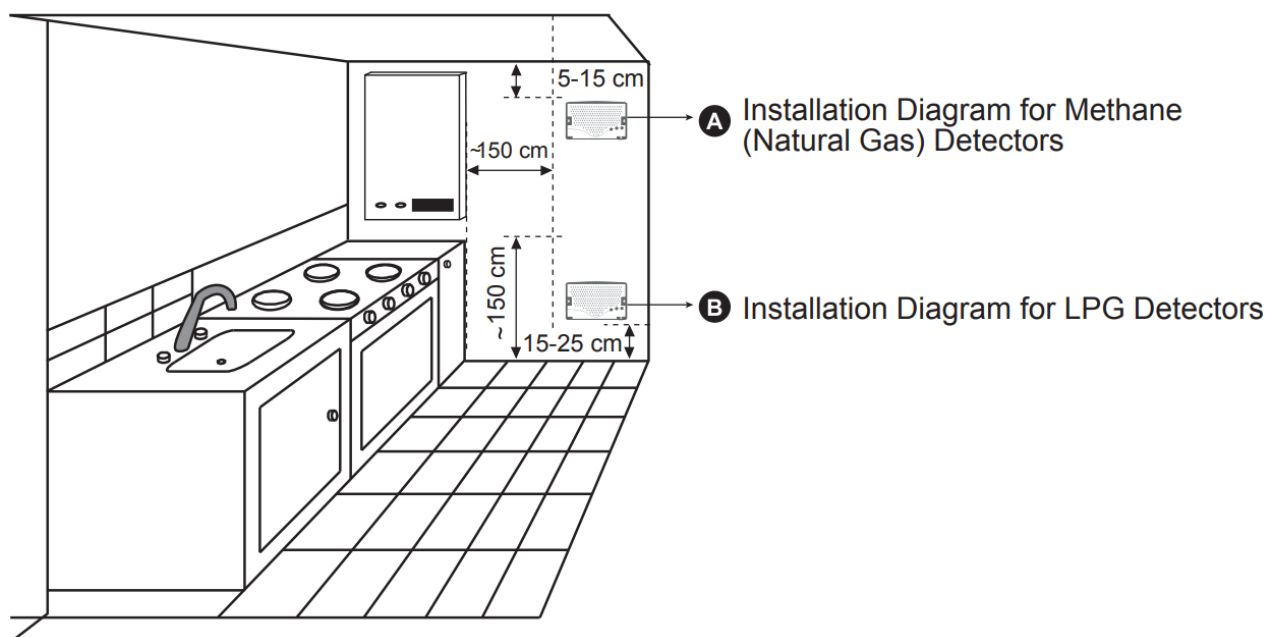
Features Varying by Model

	ML-293L	ML-293L-R	ML-293L-RS	ML-293M	ML-293M-R	ML-293M-RS
Model Type	Conventional	Conventional	Conventional	Conventional	Conventional	Conventional
Gas Type	LPG Border Color: Navy Blue	LPG Border Color: Navy Blue	LPG Border Color: Navy Blue	Natural Gas Border Color: Orange	Natural Gas Border Color: Orange	Natural Gas Border Color: Orange
Alarm Level	%(15±5) LEL	%(15±5) LEL	%(15±5) LEL	%(15±5) LEL	%(15±5) LEL	%(15±5) LEL
Power Supply Voltage	230V AC (+10%, -15%)	230V AC (+10%, -15%)	230V AC (+10%, -15%)	230V AC (+10%, -15%)	230V AC (+10%, -15%)	230V AC (+10%, -15%)
Relay Output	No Relay	10A 250V AC 5A 30V DC	Relay 1: 10A 250V AC 5A 30V DC Relay 2: 100mA 50V DC	No Relay	10A 250V AC 5A 30V DC	Relay 1: 10A 250V AC 5A 30V DC Relay 2: 100mA 50V DC
Weight (approximate)	200g	200g	200g	200g	200g	200g
Warm-up Time	180s	180s	180s	180s	180s	180s
Alarm Duration	<30s	<30s	<30s	<30s	<30s	<30s
Fault Duration	<4min	<4min	<4min	<4min	<4min	<4min

MODELS

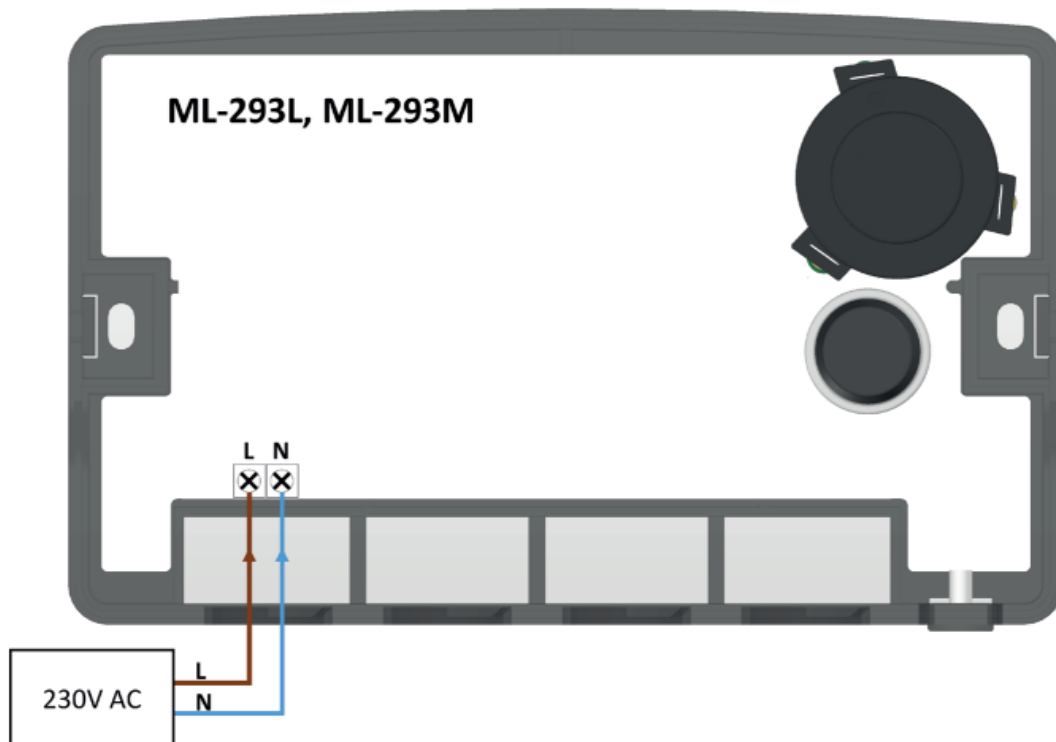
Model	Description
ML-293L	Maxlogic Gas Detector, LPG, 230V AC
ML-293L-R	Maxlogic Gas Detector, LPG, 230V AC, 10A Alarm Relay
ML-293L-RS	Maxlogic Gas Detector, LPG, 230V AC, 10A and 0.5A Alarm Relays
ML-293M	Maxlogic Gas Detector, Methane (Natural Gas), 230V AC
ML-293M-R	Maxlogic Gas Detector, Methane (Natural Gas), 230V AC, 10A Alarm Relay
ML-293M-RS	Maxlogic Gas Detector, Methane (Natural Gas), 230V AC, 10A and 0.5A Alarm Relays

MOUNTING SCHEME

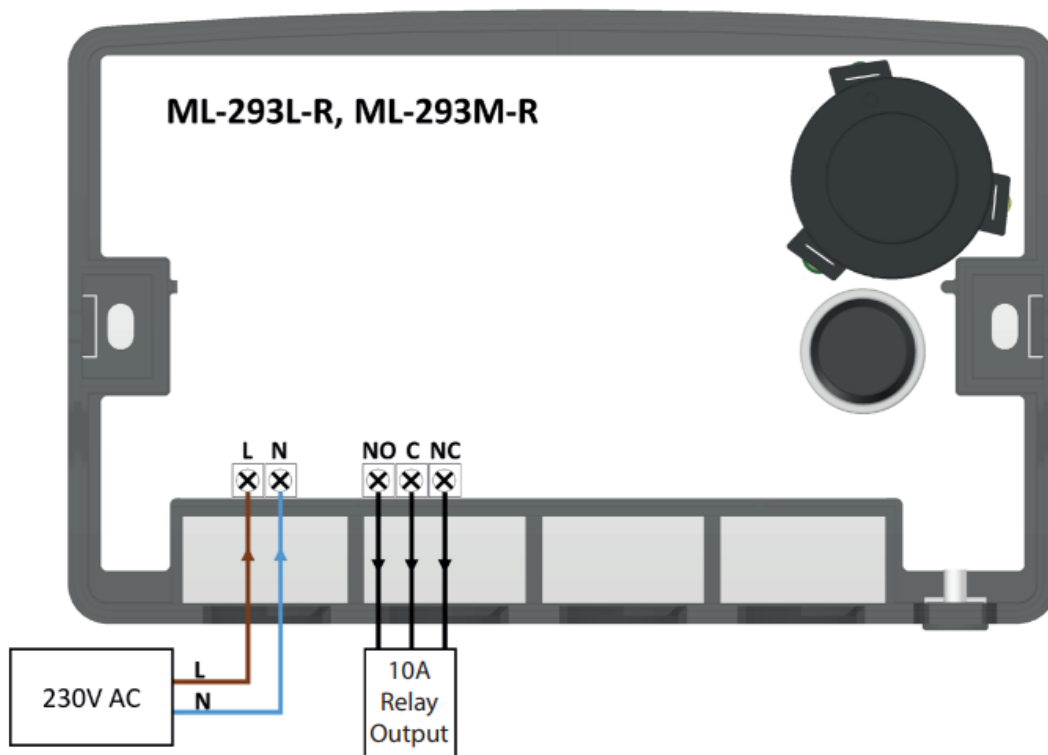


CONNECTION SCHEME

ML-293L, ML-293M



ML-293L-R, ML-293M-R



ML-293L-RS, ML-293M-RS

