

Light barrier amplifier

IMX-A2033...

Features

- Multichannel amplifier with modulated infrared light
- 2-channel installation system for tight assembly without cross talk
- Range up to 40 m (131 ft)
- Automatic Level Control (ALC) according to assembly distance and direction
- High immunity to ambient light and interference from other light barriers
- Test function to check installation and signal strength
- Adjustment assistance for easy adjustment of the sensor heads
- Switch-on and switch-off delay
- Switching mode light/dark switchable
- Four basic transmit levels
- One transistor output (NPN/PNP) for each channel
- Transmitter and receiver connections are short-circuit proof
- 11-pin DIN railmounting socket for simple installation

Ordering Table

| Supply voltage | Order code |
|----------------|------------------|
| 230 V AC | IMX-A2033/230VAC |
| 115 V AC | IMX-A2033/115VAC |
| 24 V AC | IMX-A2033/24VAC |
| 24 V DC | IMX-A2033/24VDC |

| Accessories | Order code |
|----------------------------|------------|
| 11-pin DIN mounting socket | ISO1 |
| Protective enclosure | PanBox 1x2 |
| Retaining clip | RTC11 |

Safety Instructions



Warning!

The infrared light barriers IMX-A2033... are not safety systems and should not be used as such systems. The devices are not to be used for applications, where personal safety is dependent on their function.

Short Description

The 2-channel automatic multiplexer is an processor controlled amplifier with an integrated analysis unit. Up to two transmitters and receivers can be connected to each unit without possibility of cross talk. The automatic gain setting and the adjustment assistance enables the user to simplify the installation and work.

The amplifier has for each channel one transistor output (NPN/PNP) and a yellow status LED.

All channels can be switched independently from each other to the different working conditions. To make fine adjustments to the sensitivity of the amplifier based on the range and contamination level of the application, the user may switch to different transmit levels using DIP switches.

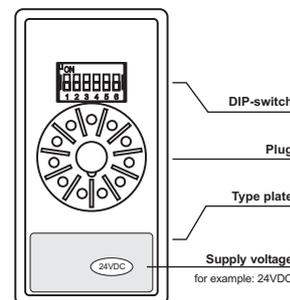
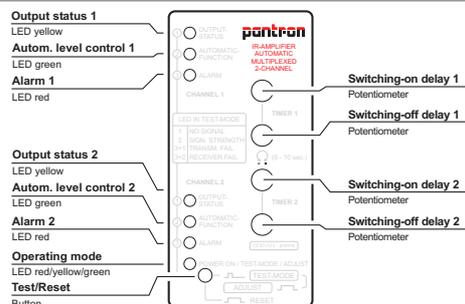
A control unit, which can be activated by simply pressing a button, is used to determine malfunctions in the transmitter or the receiver.

If nothing is defective, the test function shows the signal quality by flashing an LED from 1 to 10 times. The flashes are proportional to the received signal.

Infrared transmitters and receivers in different, compact and robust designs are described in the sensor heads datasheet.



Device Overview



DIP-switch setting

| DIP-switch | 1 | 2 | 3 | 4 | 5 | 6 |
|------------|--------------------------------|-----|--------------------------|--------------------------------|-----|--------------------------|
| | basic transmit level channel 1 | | switching mode channel 1 | basic transmit level channel 2 | | switching mode channel 2 |
| high2 | ON | ON | dark | ON | ON | dark |
| high1 | ON | OFF | light | ON | OFF | light |
| low2 | OFF | ON | light | OFF | OFF | light |
| low1 | OFF | OFF | light | OFF | OFF | light |

Factory setting is marked in dark grey

Switching logic

| Beam status | Switching mode | Output status | |
|-------------|----------------|---------------|-------------------|
| | | Indicator | Transistor output |
| | light | | 0 V |
| | dark | | 24 V DC |
| | light | | 24 V DC |
| | dark | | 0 V |

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IMX-A2033...

Technical Data (at 20 °C / 68 °F)

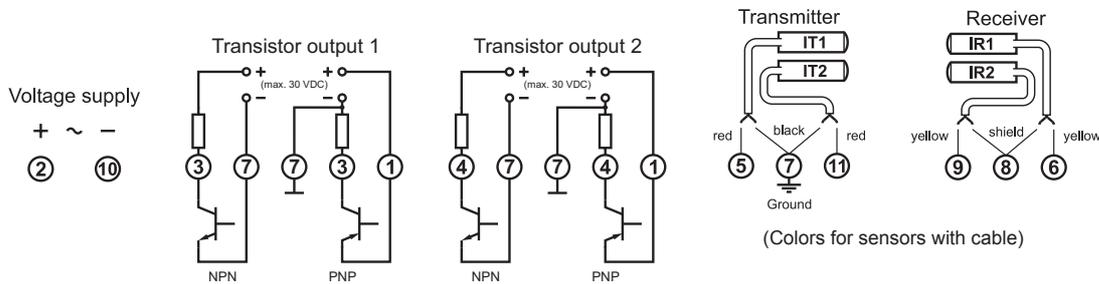
| | | | | |
|-------------------------------|---------------------------------|--------------------------|--|---|
| Supply voltage ...AC | 230/115/24 V AC / ±10% | | Relay output | — |
| Supply voltage ...DC | 24 V DC / ± 10% | | Transistor output | 1 NPN/PNP contact per channel |
| Power consumption (max.) | ...AC: 5,1 VA | ...DC: 2,6 W | Switching data (max.) | 30 mA / 30 V DC |
| Power loss (max.) (EN 61439) | ...AC: n. a. | ...DC: 2,6 W | Reaction time T _{ON} / T _{OFF} | 8 ms / 8 ms |
| max. Range (through beam) | Receiver IRL-... | Receiver IR-..., IRH-... | Alarm output | — |
| Transmitter IT-..., ITL-... | 7 m (ft) | 13 m (ft) | Test input | — |
| Transmitter IT-...HP, ITH-... | 9 m (ft) | 20 m (66 ft) | MTBF (EN/IEC 61709) | 1,7 · 10 ⁶ h (T _{ambient} = 40 °C / 104 °F) |
| Transmitter ITA-... | 15 m (ft) | 40 m (131 ft) | Operating temperature | -25 °C ... 60 °C (-13 °F ... 140 °F) |
| Operating basis | modulated IR-light | | Storage temperature | -40 °C ... 80 °C (-40 °F ... 176 °F) |
| Transmit frequency | 4,0 kHz | | Housing material | Plastic |
| System power | automatic | | Housing protection | IP 40 |
| Switching behavior | light / dark | | Mounting | 11-pin DIN socket |
| Basic transmit level | Low 1 / Low 2 / High 1 / High 2 | | Mounting orientation | free |
| Switching delay | 0 ... 10 s | | Dimensions | 40,0 x 76,5 x 78,5 mm |
| Multiplex speed | 4 ms | | | |

Connection Diagram



Before connecting the amplifier, look on the type plate and check if the power supply is the same as the connection value. Other values can impair the unit functions or destroy the amplifier.

Caution! The AC-supply devices are isolated from main. A grounded connection on the low voltage side is required (PIN 7).



Dimensions (in mm)

