

LINE DETECTORS FOR SMOKE AND HEAT in high risk environments



ENG

FOREWORD

THIS MANUAL IS A SHORT INFORMATION BOOKLET ON ERROR-FREE INSTALLATION FOR CUSTOMERS WHO HAVE CHOSEN THIS PRODUCT.

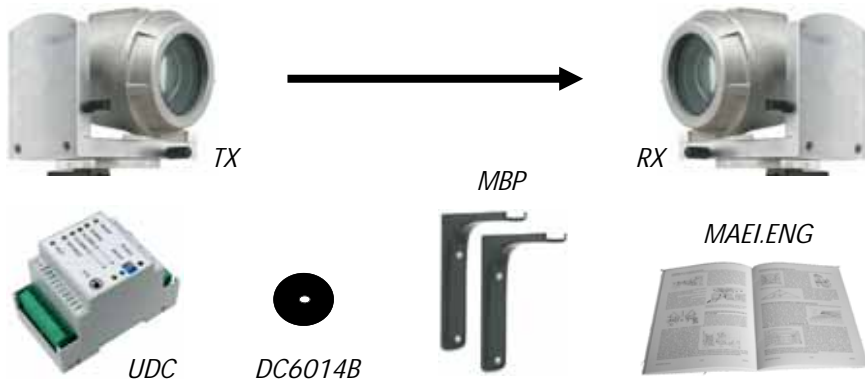
The rules preliminarily considered applicable to this class of product are those provided for in the current national law where it applies to the particular plan for this product's use. It is highly advisable to follow these rules in those parts that apply to the use of line detectors in general (TS EN54-14) and the IEC regulations on potentially explosive atmospheres, as regards electrical parts and power supply. You are also reminded that, in addition to the requirements of said regulations, the system rules provided for by national regulation and all other IEC requirements must also be followed.

NEW CHARACTERISTICS of the ARDEA EExd and ARDEA IP65

- Performance: from 5m up to 100m between the Transmitter and Receiver
- Power supply: 12V or 24V without the need for commutation
- Version S (Smoke) for smoke detection only
- Version SF (Smoke & Fire) for Smoke and Heat detection
- Adjustment and Measurements on "Analysis and Verification Unit" (code UDC) placed in safe place
- Electronic Smoke Alarm Simulator (does not require SAC)
- Maintenance request warning (on Analysis and Verification Unit)
- Outputs to relay Alarm with clean contacts and Fault contact normally closed
- 4-20mA output
- Open-Collector output in case of Alarm
- Interface INT4BA not required
- Receiver unit recognisable at distance
- Container certified INERIS 02 ATEX 0090X EEx d IIC T6 IP66 T 85°C
Ta -20°C/+52°C 0722 II 2GD (ARDEA EExd model)
- Cable holder certified INERIS 03 ATEX 0140X EEx d IIC / EEx e II IP66 II
2GD (ARDEA EExd model)

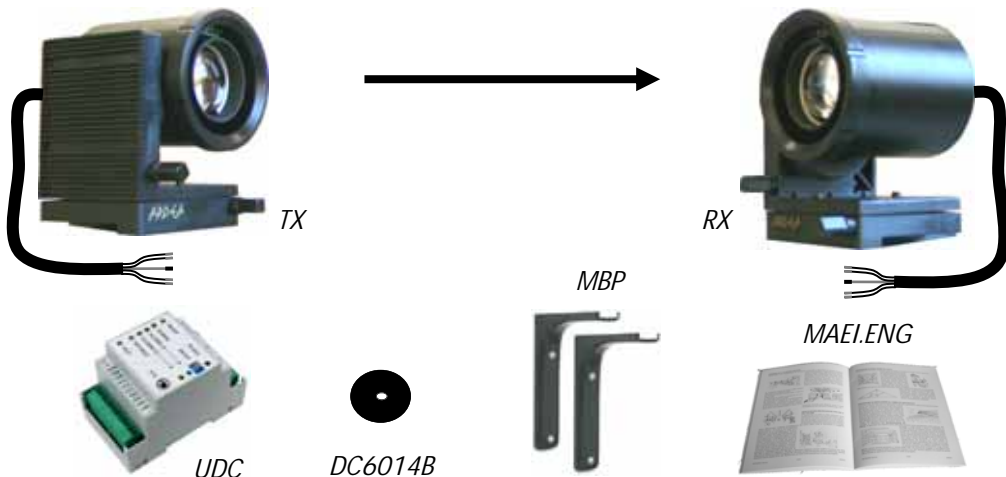
PROVIDED WITH THE ARDEA EEXD SERIES

- ASEX / ASFEX N°1 Transmitter unit and Receiver S / SF pair with cable holder
 MBP N°1 Pair of brackets
 UDC N°1 Analysis and Verification Unit
 DC6014B N°1 Diaphragm for short distance operation (less than 15m)
 MAEI.ENG N°1 Instruction booklet



PROVIDED WITH THE ARDEA IP65

- ASIP / ASFIP N°1 Transmitter unit and Receiver unit S / SF pair with cable holder and 90cm of cable
 MBP N°1 Pair of brackets
 UDC N°1 Analysis and Verification Unit
 DC6014B N°1 Diaphragm for short distance operation (less than 20m)
 MAEI.ENG N°1 Instruction booklet



PRELIMINARY INFORMATION ON INSTALLATION AND USE**1. Validity of supply terms and guarantee terms**

In all circumstances Setronic Verona S.r.l.'s general supply, delivery, packaging, transport and guarantee terms apply, and the conclusion of the contract resulting in this installation of the ARDEA model implies acceptance of these, even if the contract was made by a distributor other than Setronic Verona S.r.l. itself.

You are advised that if Setronic Verona S.r.l. is informed of the installation of detectors that does not comply with the requirements, current regulations, or is in breach of the general and detailed terms of use, or the product is not maintained properly, the guarantee terms may fail to apply and, in extreme case, notice may be given to immediately disable the working detectors until the regulations and requirements are adhered to.

2. Connection to the power supply unit and/or the detector control box

Connections and power supply must be effected from a power supply part and from a certified and/or EN54/2-4 authorised control panel, and the system must be executed in compliance with the rules stated in the IEC-UNI regulations.

3. Installation for the reference class

ARDEA detectors should be installed in buildings with electrical systems that are classified according to the level for which the detector was presented to the Competent Body concerned and as reported in the declaration of compliance. The protection rating it is, however, IP65 (IP66 for the EExd model).

4. Installation in covered areas free from vapours

It is mandatory for ARDEA detectors to be installed in buildings normally enclosed by walls and in any case always with ceilings, since they are suitable for internal use in accordance with the reference standard EN54/12 of CEN TC72.

The detector may not be used in buildings where there is water vapour mist or saturated steam, and the detector may in no case be used outdoors.

5. Installation where there could be toxic or noxious combustion fumes

The customer must inform the manufacturer where the installation is to provide for the detection of fires involving toxic or noxious substances during the accidental distillation of the start of a fire or where system comes within, or could come within, the list of activities subject to the regulations relating to "Major Industrial Risks".

Where there is suitable information, Setronic Verona S.r.l reserves the right, from the pre-contractual stage, to specify additional and different requirements with regard to the characteristics of the selected model or to the performance requirements of the detectors to be installed, while waiting for the customer and/or system planner to express their willingness to comply with these.

6. Detector sensitivity

Since the combustible materials being worked on or stored in the space to be protected may be quite different in different cases, and since the detection depends on the physical characteristics of the start of the fire in relation to the chemical composition of the combustible material in its distillation stage, account must be taken of the following:

- a) The centering of the detector may be reduced to a working surface for the optics equivalent to 1 square metre, along a distance of up to 100 m. *Under certain circumstances the detector's optic must be fitted with a suitable diaphragm for the distance between the transmitter and receiver units*
- b) The sensitivity to be set depends on the chemical compounds to be detected in the case of accidental combustion.
- c) The sensitivity threshold to be set also depends on the speed with which it is possible to detect the start of the fire, taking account of the warnings indicated in the described modes.
- d) The conditions in a), b), c) above may be simultaneously present and all are inseparably linked to the presence of environmental disturbances that may occur in the protected area. The consequence is that the choice of detector sensitivity must be decided on after checks being carried out over a relatively long period (e.g. two weeks), a time within which there must have been no false alarms produced.
- e) ***The occurrence of false alarms is always associated with two factors that merit the utmost attention:***
 - Disturbances to the ambient conditions due to the production of goods or of their handling, transportation or storage.
 - The sensitivity required of the detector for the type of risk involved.
It should be pointed out in this regard that **raising the sensitivity of the detector is never the best response.**

7. The use of suitable installation equipment installation

Remember that to install the two units in the three described Modes, two bore holes have to be made in the protected room's infill structures, at what are often considerable heights from the floor. Since installation must be carried out a few metres from the ground, you are reminded to take all suitable safety measures for the particular situation, using suitably certified ladders, scaffolding etc. that are also maintained in accordance with any regulations.

8. Preparation before installation

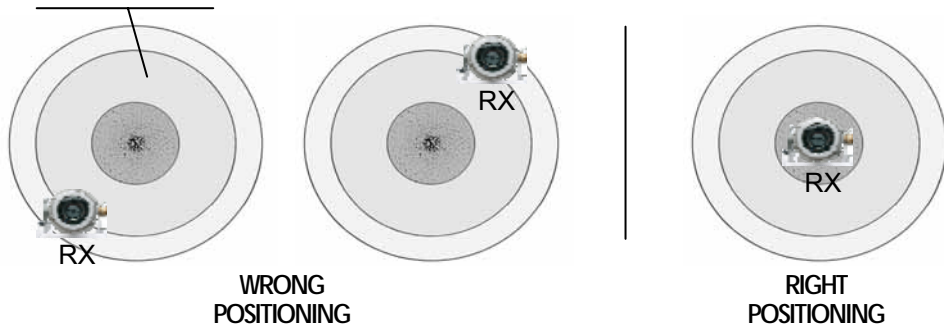
Please read this manual carefully before ascending any scaffolding to start installation work. The booklet is in pocket form, and it is advisable to take it with you onto the scaffolding so it can be consulted as required. Take with you suitable, good quality spare drill bits, wall plugs and screws so you don't have to return to the ground if any get dropped. We recommend you tie a screwdriver to your wrist to stop it falling. Make sure that no colleagues or customer factory staff pause beneath the area you are working. Place barriers around the area where the scaffolding or hoisting equipment is located. Make sure the scaffolding platform is not in front of any kind of doors or entrances to the room of installation from which staff might enter. If it is in front of any such doors, close them and put a sign outside that the door may not be opened during installation. Make sure no fork-lift trucks are being operated when you are working above ground. If you use only one wheeled scaffolding rig, take care to account at all times for its height when moving it from the transmitter unit to the receiver unit. Make sure any equipment and detectors are removed from the scaffolding platform during its movement from one point to the other. Vibration could, during its movement, cause objects to fall from the platform and possibly cause you or your colleagues injury, as well as possibly cause the loss of the product itself. If you use a single wheeled scaffolding rig, take care to account at all times for its height when moving it around. It is easy to bump into lighting installations, wiring systems, ducting and bus ways etc. Apart from the danger to yourself, you could be required to pay compensation for damages.

9. The distribution of the infrared light

The infrared projector emits a cone of light of which only its inner part is actively necessary for the detector's working. The figures show the active part of the infrared radiation emitted as well as that which is "virtually lost". Even the "virtually lost", infrared is however important where there is movement of the structure on which the Transmitter unit is mounted.

The following diagrams show the illumination conditions for the Receiver unit.

IR radiation from the
Transmitter unit



OTHER INSTALLATION INFORMATION

ARDEA detectors work according to the following principles:

- When the infrared signal emitted by the detector is reduced by at least 10dB or when the intensity of the infrared signal received is not sufficient to make the detector work, an electrical **fault** contact is triggered that is different from the fire **alarm** signal. The information will then be sent from the Analysis and Verification Unit to the detector control box.
- If the carrier of the infrared signal emitted by the detector tends to diminish in time with respect to the originally set level, the system will carry out proportional adjustments over the long period.
- If an obstacle breaks the barrier, a fault signal will be triggered electrically and sent to the fire detection control unit.
- On the removal of the obstacle, the detector will go back to normal working within a time of less than 1 second. The control units currently hold the fault in memory so even if the detector returns immediately to normal service on the obstacle's removal, it should be checked that the control unit will locally enable both the visual and sound fault signals.
- When the fire alarm has been given, the detector reset requires electrical disabling (OFF/ON) to at least 1 second, or to when the RESET button on the Analysis and Verification Unit is pressed.
- The detector has Leds to display functional status :
 - CONTINUOUS GREEN : power on
 - GREEN FLASHING : maintenance request
Visible only on the Analysis and Verification Unit (UDC)
 - CONTINUOUS YELLOW : no signal (fault)
 - YELLOW OFF : signal good
 - YELLOW FLASHING : excess signal (saturation);
 - CONTINUOUS RED : pre-alarm (16 seconds)
 - RED FLASHING : fire alarm
- The Analysis and Verification Unit has two alarm sensitivity thresholds with two *independent* relay outputs. It is possible to set two levels of alarm to distinguish the extent of the event concerned.

Height of detection units' installation

The height of the detection units' installation must be worked out in accordance with the national regulations.

The regulation in question, even though it represents a considerable Italian contribution to the current European regulations on the use of this type of detector, will continue to be general as far as specific aspects such as the height of detection installation is concerned.

Chart :

a	b	c	d
C°	m	cm	m
		≥180	
		180	20
		150	
	18		19,5
		130	
			18,5
9°C		115	
10°C			17,5
	12,5	105	
11°C	12		16
	11,5	100	
13°C	11		15,5
16°C	10,5	98	15
	10		
18°C	9,5	93	N
20°C	9		N
22°C	8,5	88	N
23°C	8		N
24°C	7,5	80	N
26°C	7	73	N
	6,5	65	N
27°C	6	60	N
28°C			N
	5,5	50	N
29°C	5		N
30°C	4,5	45	N
	4		N
33°C	3,5		N
35°C		37	N
	2,8	35	N
38°C		32	N
40°C		30	N
		27	N
45°C			N
55°C		25	14
		≤25	

Legend:

- a: Temperature under the roof at 50 cm from the slope of the roof.
- b: Height of the building at the top.
- c: Height of installation of detector from top.
- d: Width of cover (to the right and to the left of the detector) where N is the width in accordance with EN54/14 (=15m).

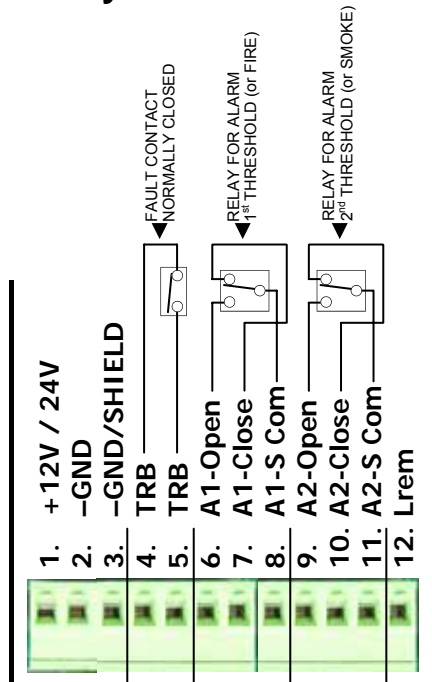
Position the enclosed ruler along the dotted line corresponding to the temperature under the roof (column a). Line the ruler up along the dotted line corresponding the height of the building to be protected (column b). The resulting alignment indicates both the detector installation distance from the top of the roof (column c), and the theoretical width of maximum lateral cover (column d).

Remember that the regulations permit a maximum working width of 15m. The fact that the detector can also detect fires beyond this width, will mean that it will actually reinforce the detecting ability of the next unit and so of both.

Example: Temperature 22°C (column a), height of the building 6m (column b) → detector distance from the top of the roof ~40cm (column c) and normalised width (N) (column d).

It should be noted that this guide is intended to provide assistance taking account only of two variables : the temperature under the roof and the height of the building. The indications are for a building with a double sloping roof with a 20° slope, no natural or forced air ventilation or extraction, heating, air conditioning or pressure variations. Even if only one of these factors applies, the resulting height may have to be increased or reduced. Other considerations must also therefore figure in the calculations where there are a number of variables involved. It is advisable always to carry out a real scale fire simulation to check correct positioning of the detection units in the protected building.

UDC - Analysis and Verification Unit

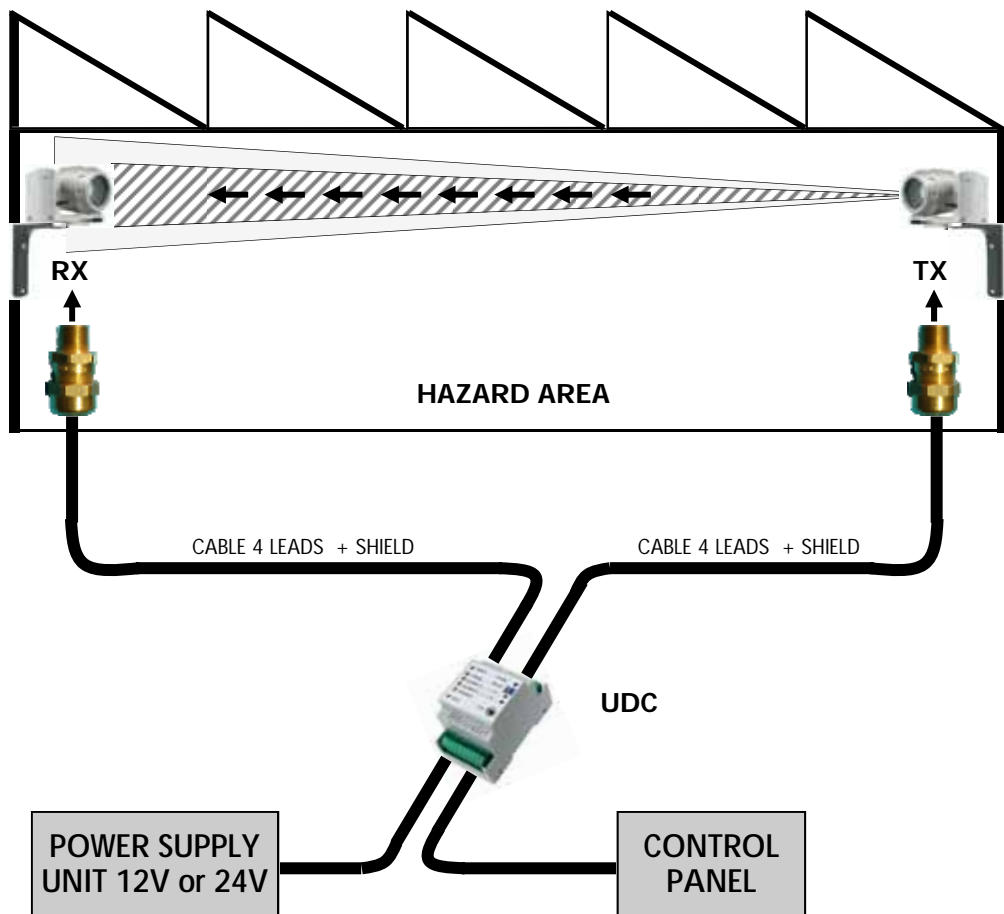


LEGEND

- | | |
|---|--|
| 1. Positive electrical supply | 7. NC alarm contact 1 st threshold |
| 2. Ground | 8. Common alarm contact 1 st threshold |
| 3. Ground / Shield | 9. NO alarm contact 2 nd threshold |
| 4. NC fault contact | 10. NC alarm contact 2 nd threshold |
| 5. NC fault contact | 11. Common alarm contact 2 nd threshold |
| 6. NO alarm contact 1 st threshold | 12. Open-Collector exit alarm |

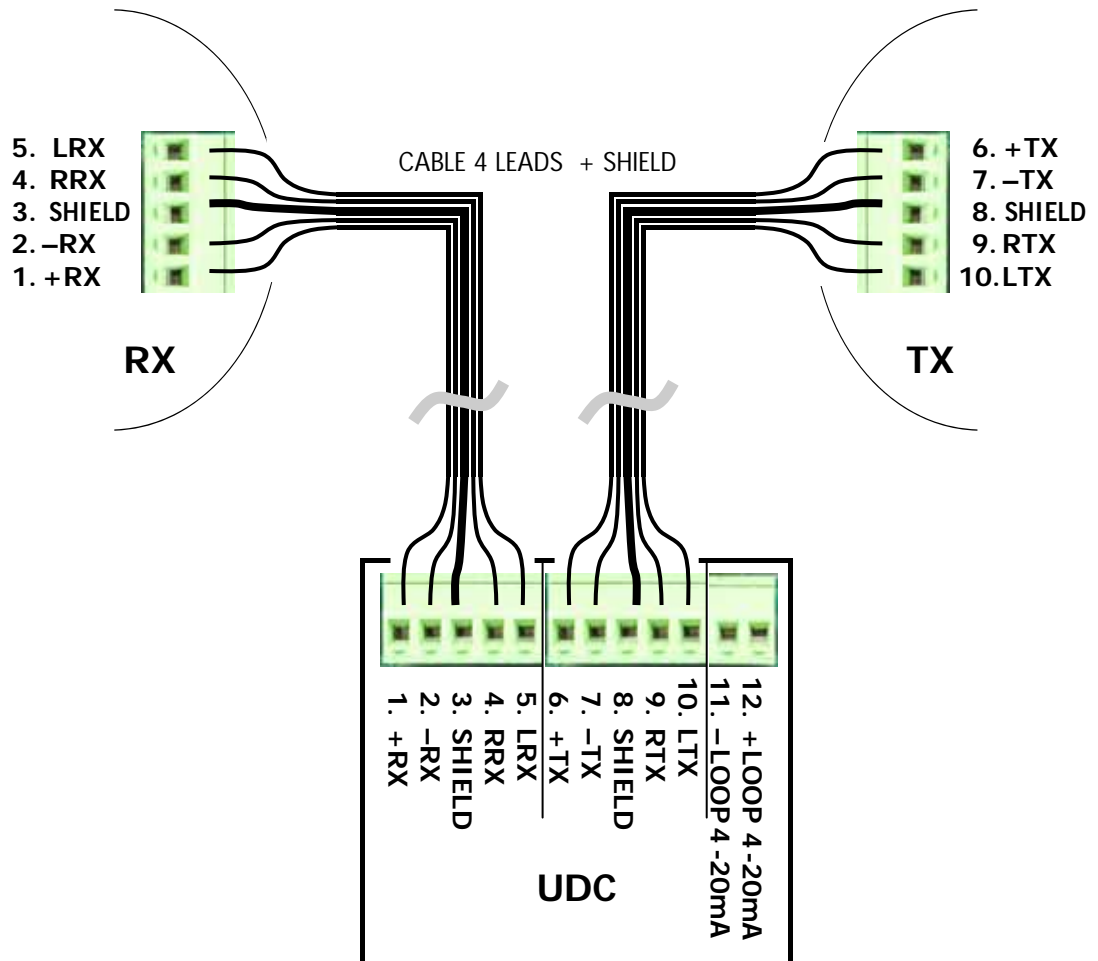
CABLING BETWEEN UDC AND CONTROL BOX

- Connect the UDC as shown.
- Power the UDC with continuous 12V or 24V $\pm 20\%$ applied to terminals (1) and (2). Clamp (3) is internally connected to terminal clamp (2)
- Use terminal clamps (4) and (5) of the fault contact to interrupt the current loop.
- Use the alarm relay contacts (6), (7) and (8) as first action threshold for models S (Smoke alone) or as fire threshold for SF models (Smoke and Heat).
- Use the alarm contact relays (9), (10) and (11) as second threshold for S (Smoke only) models or as Smoke threshold for SF models (Smoke and Heat).
- The terminal clamp (12) is an open-collector output that closes to ground in case of alarm.



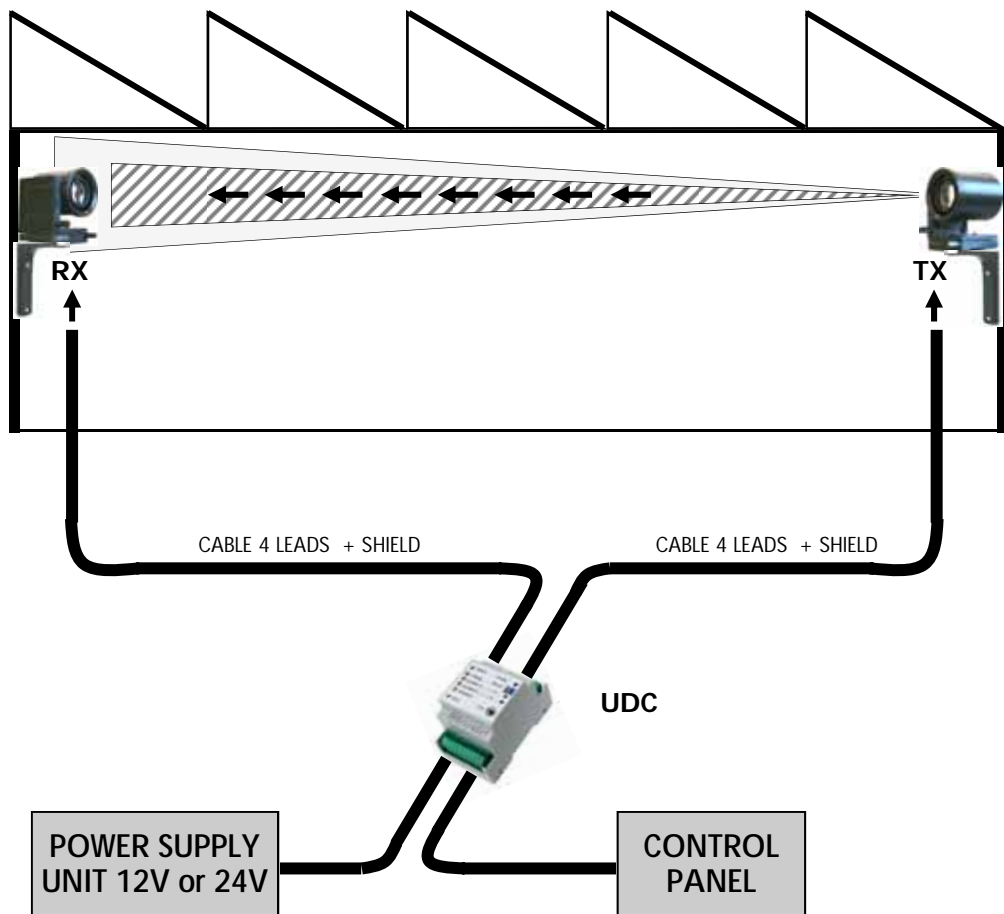
WARNING NOTES ON INSTALLATION

- Before installing the detector, check the walls or surfaces to which the transmitter and the receiver unit will be attached. These must be subject to movements or vibration when the unit is working.
- Do not install the detector in places in which stored goods leave a space of less than 1.20 m beneath the ceiling or roof.
- Keep the whole length of the detector's optical beam path free from obstacles.
- Do not position the detector opposite or close to light sources or direct sunlight or air conditioning/heating systems.
- In problem situations where there are objects in the line of the beam, a diaphragm filter (not included in delivery) can be used with the receiver.
- In *the case of installations where the distance is less than 15 m, insert a diaphragm filter (DC6014B) in the Receiver unit.*



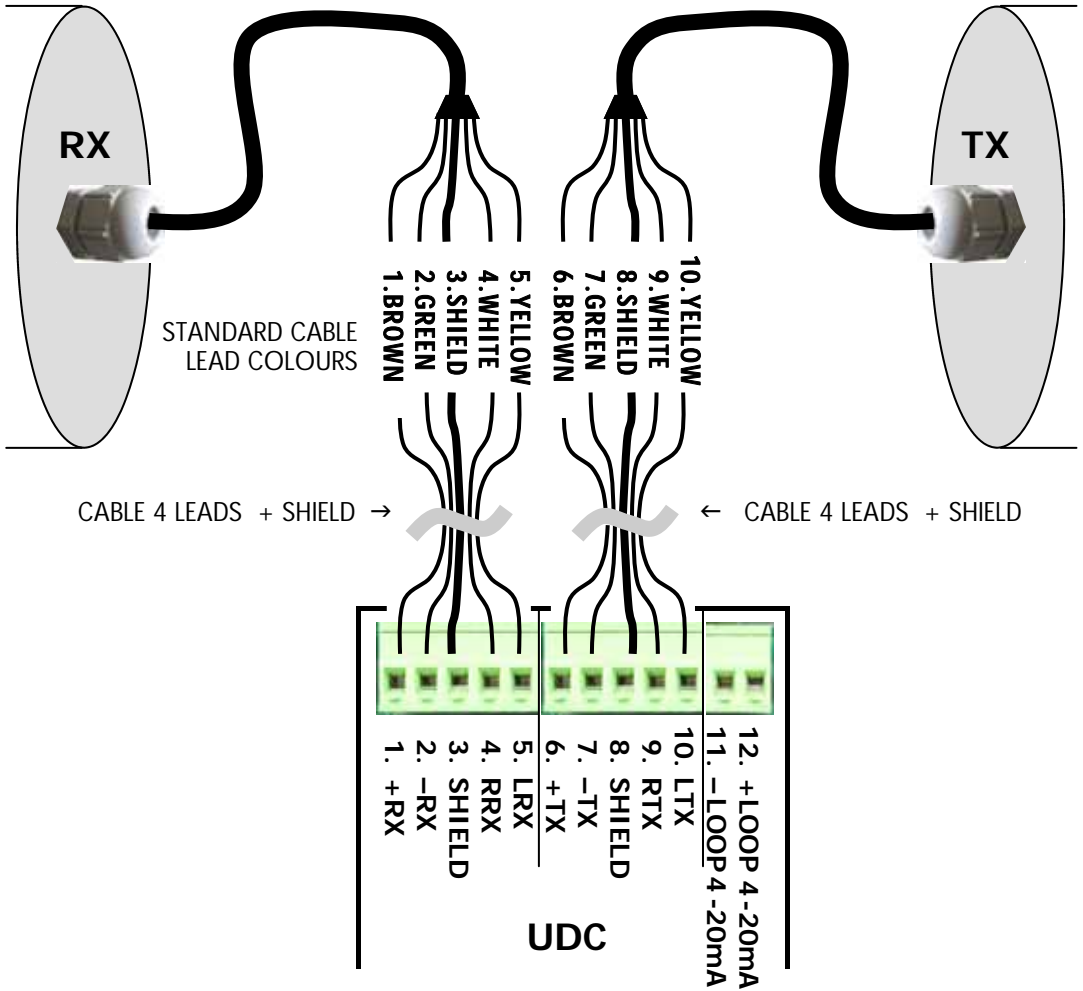
CABLING BETWEEN TX, RX and UDC

- Connect the Transmitter unit and Receiver to the Analysis and Verification Unit according to the diagram.
- Use flame-proof shielded cable with four leads.
- The minimum cross section usable for the cables depends on the length of the cable. Use a section not less than 0.75mm^2 for power supply (+ and -) and for signals, up to a distance of 500m.
For greater distances use larger diameters.



WARNING NOTES ON INSTALLATION

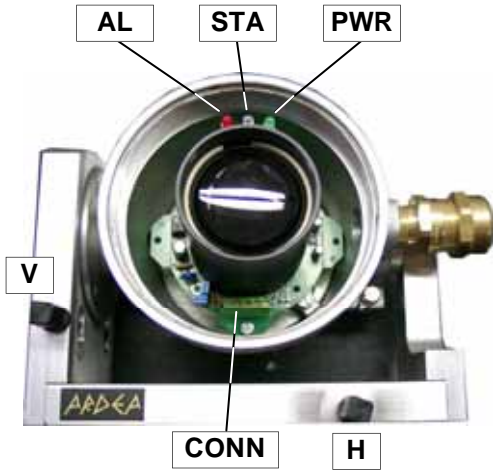
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- Do not install the detector in places in which stored goods leave a space of less than 1.20 m beneath the ceiling or roof.
- Keep the whole length of the detector's optical beam path free from obstacles.
- Do not position the detector opposite or close to light sources or direct sunlight or air conditioning/heating systems.
- In problem situations where there are objects in the line of the beam, a diaphragm filter (not included in delivery) can be used with the receiver.
- *In the case of installations where the distance is less than 20m, insert a diaphragm filter (DC6014B) in the Receiver unit.*



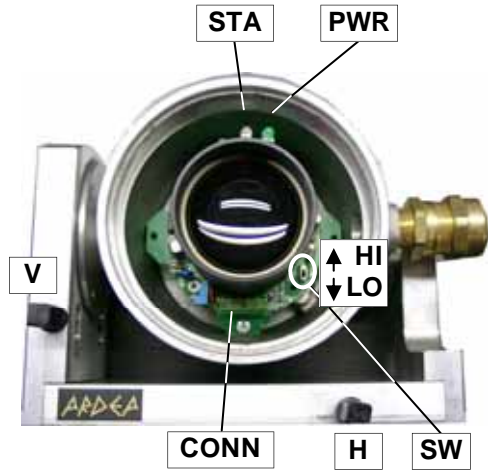
CABLING BETWEEN TX, RX and UDC

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- Use flame-proof shielded cable with four leads.
- The minimum cross section usable for the cables depends on the length of the cable. Use a section not less than 0.75mm² for power supply (+ and -) and for signals, up to a distance of 500m. For greater distances use larger diameters.

ARDEA EExd - RECEIVER



ARDEA EExd - TRANSMITTER



RECEIVER

AL : Alarm Leds (RED).

Normally: Off / Continuously on: in Pre-alarm / Flashing Alarm.

STA : Status Led (YELLOW).

*Normally: Off / Continuously on: Interrupted Beam (Fault) /
Flashing: Signal Excess (Saturation).*

PWR : Power Led (GREEN).

CONN : 5 -pole connector for Electrical supply and Signal.

V : Vertical adjustment knob

H : Horizontal adjustment knob

TRANSMITTER

STA : Status Led (YELLOW).

*Normally: Off / Continuously on: Interrupted Bean (Fault) /
Flashing: Signal Excess (Saturation).*

PWR : Power Led (GREEN)

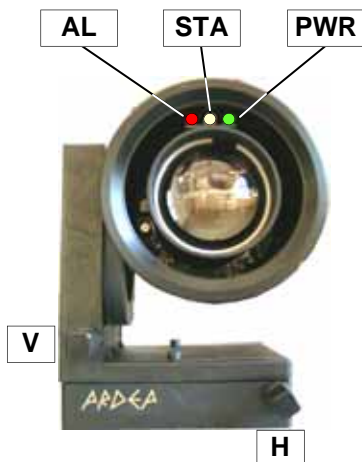
SW : Regulator switch up to about 30m (LO) or up to 100m (HI).

CONN : 5 -pole connector for Electrical supply and Signal.

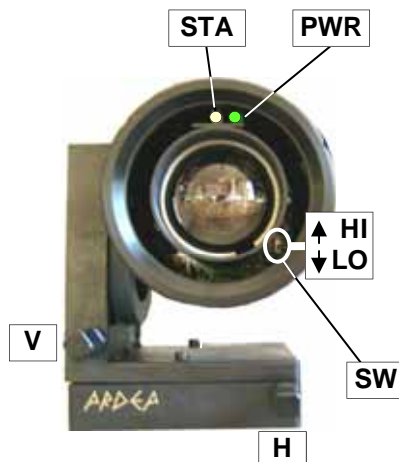
V : Vertical adjustment knob

H : Horizontal adjustment knob

ARDEA IP65 - RECEIVER



ARDEA IP65 - TRANSMITTER

**RECEIVER**

AL : Alarm Leds (RED).

*Normally: Off / Continuously on: in Pre-alarm /
Flashing: Alarm.*

STA : Status Led (YELLOW).

*Normally: Off / Continuously on: Interrupted Beam (Fault).
Flashing: Signal excess (Saturation).*

PWR : Power Led (GREEN).

V : Vertical adjustment knob

H : Horizontal adjustment knob

TRANSMITTER

STA : Status Led (YELLOW).

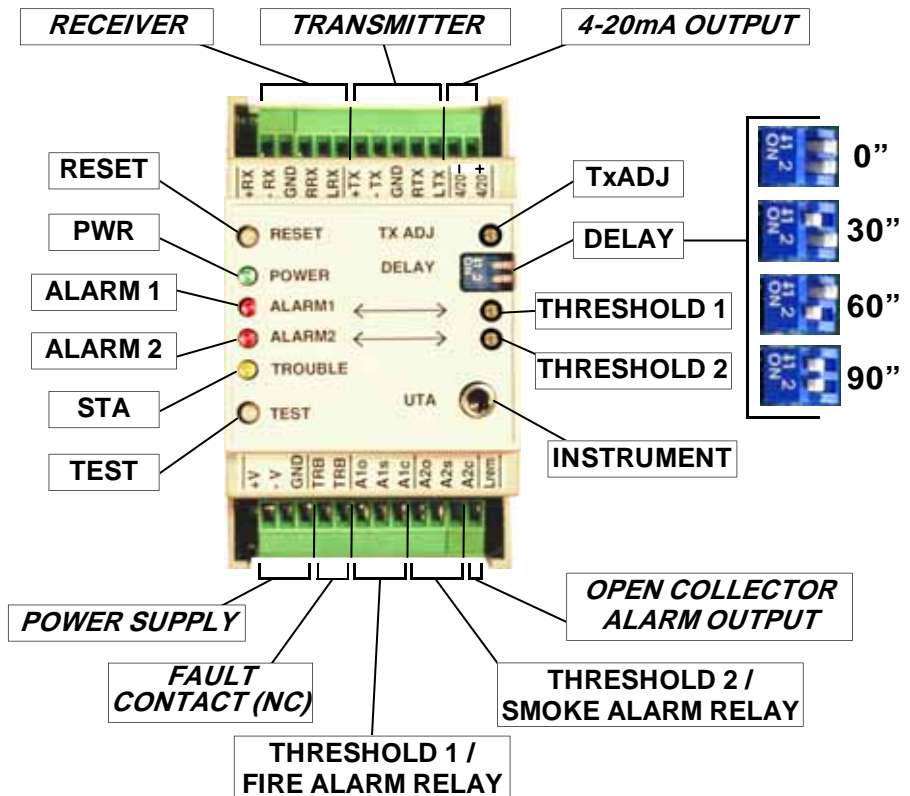
*Normally: Off / Continuously on: Interrupted Beam (Fault) /
Flashing: Signal excess (Saturation).*

PWR : Power Led (GREEN)

SW : Regulation switch up to 50m (LO) or up to 100m (HI).

V : Vertical adjustment knob

H : Horizontal adjustment knob



ANALYSIS AND VERIFICATION UNIT - UDC

RESET : UDC Reset button and Alarm off relay.

PWR : Power Led (GREEN).

Normally: On / Flashing: Maintenance request.

ALARM1 : Alarm Threshold 1 / Fire Led (RED).

Normally: Off / On: Pre-alarm / Flashing: Alarm.

ALARM2 : Alarm Threshold 2 / Smoke Led (RED).

Normally: Off / On: Pre-alarm / Flashing: Alarm.

STA : Status Led (YELLOW).

Normally: Off / Continuously on: Interrupted Beam (fault) / Flashing: Signal excess (saturation).

TEST : Button for *Alarm Simulation* (with UTA98 or ADM instrument).

TxADJ : Transmitter adjustment trimmer.

DELAY : Fault contact timer (see dip-switch settings).

THRESHOLD 1 : 1st threshold / Fire (SF) adjustment trimmer.

THRESHOLD 2 : 2nd threshold / Smoke (S) adjustment trimmer.

LREM : *Open-Collector output* (closes to ground when alarm activated).

INSTRUMENT : UTA or ADM instrument connection socket .

CALIBRATION AND ASSEMBLY PROCEDURE

1. Install the brackets on the wall and attach the detectors. Direct the Transmitter unit and Receiver unit towards each other using the "H" and "V" knobs. Carry out the wiring according to the wiring diagrams in the previous pages.
2. **If the detector is used over a distance greater than 30m in the case of the EExd model or over 50m for the IP65, flick the SW switch on the Transmitter to HI.**
3. *Warning: Always check the connections before switching on the power! Fault danger Close the units' covers.* Power up the system and turn the "TxADJ" trimmer on the UDC through 18 turns *clockwise*. The green PWR Leds on the Tx, Rx and UDC will switch on.
4. The yellow Led "STA" will indicate one of these three conditions:
 - yellow Led **flashing**: the level of infrared received is very high;
 - yellow Led **on**: the level of infrared received is too low;
 - yellow Led **off**: the level of infrared is good.

Only in this phase must the yellow Led off **not** be considered as indicated an acceptable signal. **It is essential to obtain LED flashing.**

5. Go to the Transmitter unit. Keep the vertical adjustment steady and move the device to the right and left with knob "H" e check the how the yellow Led "STA" reacts. You must get to a position in which the yellow Led is flashing or at least off. Position yourself at the centre, where the signal is at its maximum. Repeat for the vertical axis, moving the detector up and down with the knob "V". At end of this stage the yellow Led should be flashing, which means the optimal signal is being received.
6. Now go to the Receiver unit and perform the same procedure as for the regulation of the Transmitter unit. At end of this stage the yellow Led should be flashing, which means the optimal signal is being received.

If you are unable to obtain yellow Led "STA" flashing, check:

- *The position of the switch "SW" on the transmitter unit;*
- *the power supply to the units (Green "PWR" Led on);*
- *having turned the trimmer "TxADJ", on the UDC, through 18 turns **clockwise**;*
- *the connections;*
- *if there are any obstacles between transmitter and receiver*

7. Turn the trimmer "TxADJ" anti-clockwise on the UDC until the yellow Led "STA" stops flashing. In the same way the yellow Leds on the Transmitter unit and receiver unit must switch off.
8. Insert the UTA instrument or the ADM associated with a digital tester in its socket. Observe the environmental interference with the Detector position and find the maximum value displayed.
 - To adjust the threshold 1 (for the model S) or the Fire threshold (for the model SF) position the instrument to Fire and adjust the trimmer for "Threshold 1".
 - To adjust threshold 2 (for model S) or the smoke threshold (for the model SF) position the instrument to Smoke and adjust the trimmer "Threshold 2".

*The thresholds can be adjusted over a wide range. For example, in model S, Threshold 1 can be used as pre-alarm and Threshold 2 as alarm. If the interferences read by the "detector" stay below 50 mV **it is possible to keep the factory threshold:** Threshold 1 = 400 / Threshold 2 = 600.*

Where there are greater levels of interference both thresholds can be proportionally raised. Where interferences are 100mV Threshold 1 can be increased to 500 and Threshold 2 to 700.

ALARM SIMULATION PROCEDURE

It is advisable always to carry out a real scale fire simulation (where possible) to check correct positioning of the detection units in the protected building. This must be performed in compliance with all relevant regulations.

If a real test cannot be performed, the simulator already incorporated in the Analysis and Verification Unit can be used. This, through UTA or ADM instrument, can electrically generate three different types of attenuation. You are reminded that this is a *simulation of a fire and cannot guarantee that the detector is installed correctly.* The UTA or the ADM serve as "*special tools*" to activate the function.

1. Ensure that only the Green Led "PWR" is on on the UDC. If the yellow "STA" Led is on or flashing, carry out the calibration procedure.
2. Press the Reset button for an instant. Wait 30 seconds.
3. Insert the UTA98 instrument or ADM (even without multimeter) in its jack and switch it on.
4. To set the attenuation level, use the "Detector" (minimum attenuation) selection or "Fire" (strong attenuation) on the instrument used.
5. Keep the TEST button on the front of the UDC pressed to start the simulation.
6. The red alarm Leds must light up on the Receiver and the UDC.
7. After about 16 seconds from when the red Led goes on it will start flashing and the corresponding relay will switch.
8. You can now release the TEST button. Switch off the UTA or ADM and remove the jack. Press RESET to make the barrier operational again.

MAINTENANCE REQUEST WARNING

The detector has a function which, analysing the signal received over a long period, it will give a maintenance request if this falls slowly. The drop in the signal of this kind is an indication that there is dust on the front of the device or that the detector has moved out of alignment.

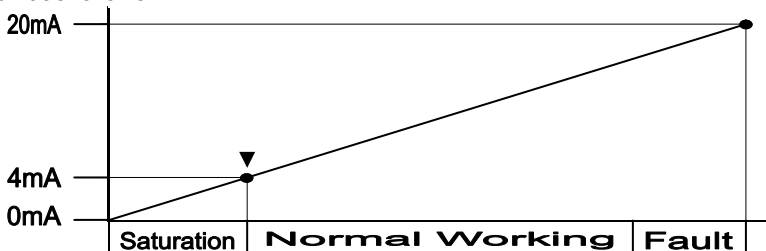
The detector will respond by a flashing or a continuous Green power Led on the UDC. In addition the fault contact (TRB) will open to signal the event to the control box.

For this reason, if there is a fault in the control box, you should also check the Green Led on the UDC.

Once correct alignment or the right signal level has been re-established, the Green Led will return to continuously on and the fault contact will close.

CURRENT OUTPUT AND OPEN COLLECTOR OUTPUT

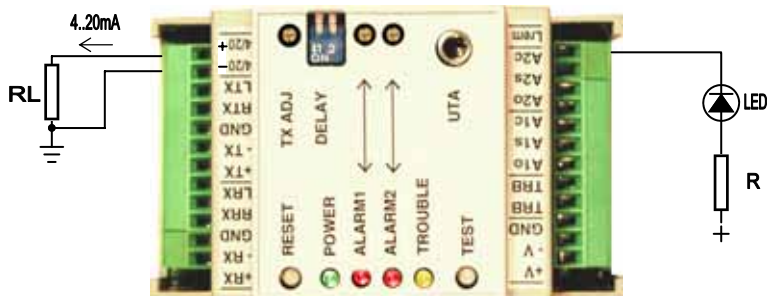
The current output with 4-20mA protocol is proportional to the infrared signal received from the Receiver unit as follows:



The triangle indicates the work point, i.e. the point where the signal is when the calibration is complete. There will be 4mA at this point.

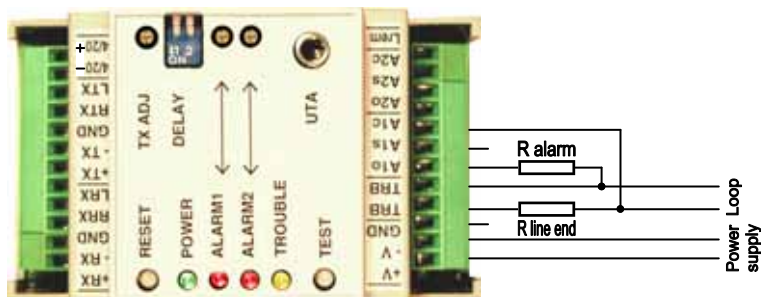
If the signal drops, down to complete blockage of the ray, it will be 20mA.

The open-collector output closes to ground a charge connected to the terminal clamp (max. 100mA) each time the detector signals an alarm. This output can be used to run an Led, an external buzzer or small signal relay.

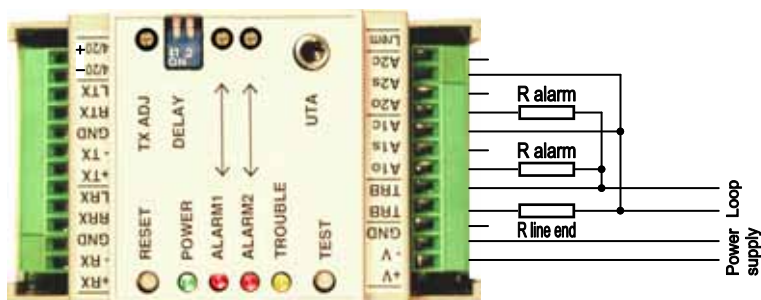


EXAMPLE OF CONNECTION TO CONVENTIONAL / COLLECTIVE CONTROL PANEL

Connection to one alarm output only:



Connection to two alarm outputs:



NOTE: The resistances to be used are taken from the characteristics indicated in the manuals of the control boxes used. By way of example, you may have the following values:
 $R_{line-end}$: 4,7K Ω / 3,3K Ω e R_{alarm} 1K Ω o 680 Ω ; $R_{line-end}$: 47K Ω e R_{alarm} 33K Ω ;
 $R_{line-end}$: 4,7K Ω / 47K Ω e R_{alarm} 0 Ω (short circuit); $R_{line-end}$: 47K Ω e R_{alarm} 18K Ω

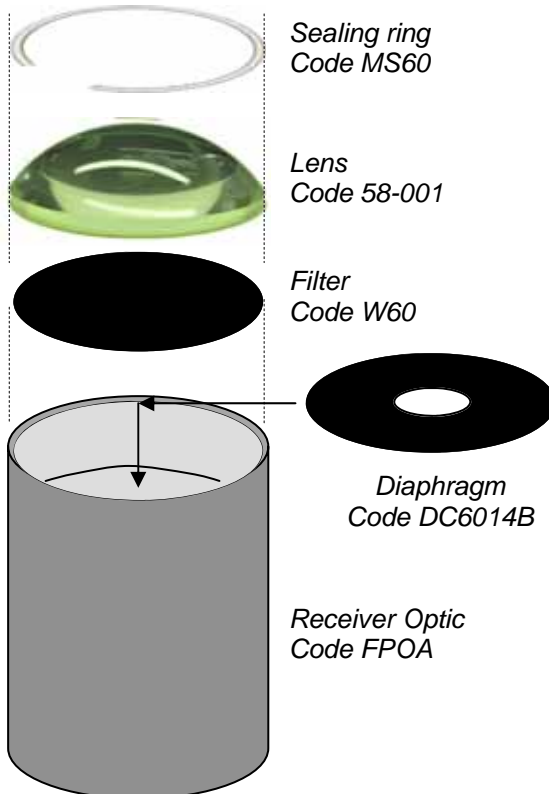
DIAPHRAGM FOR SHORT DISTANCES

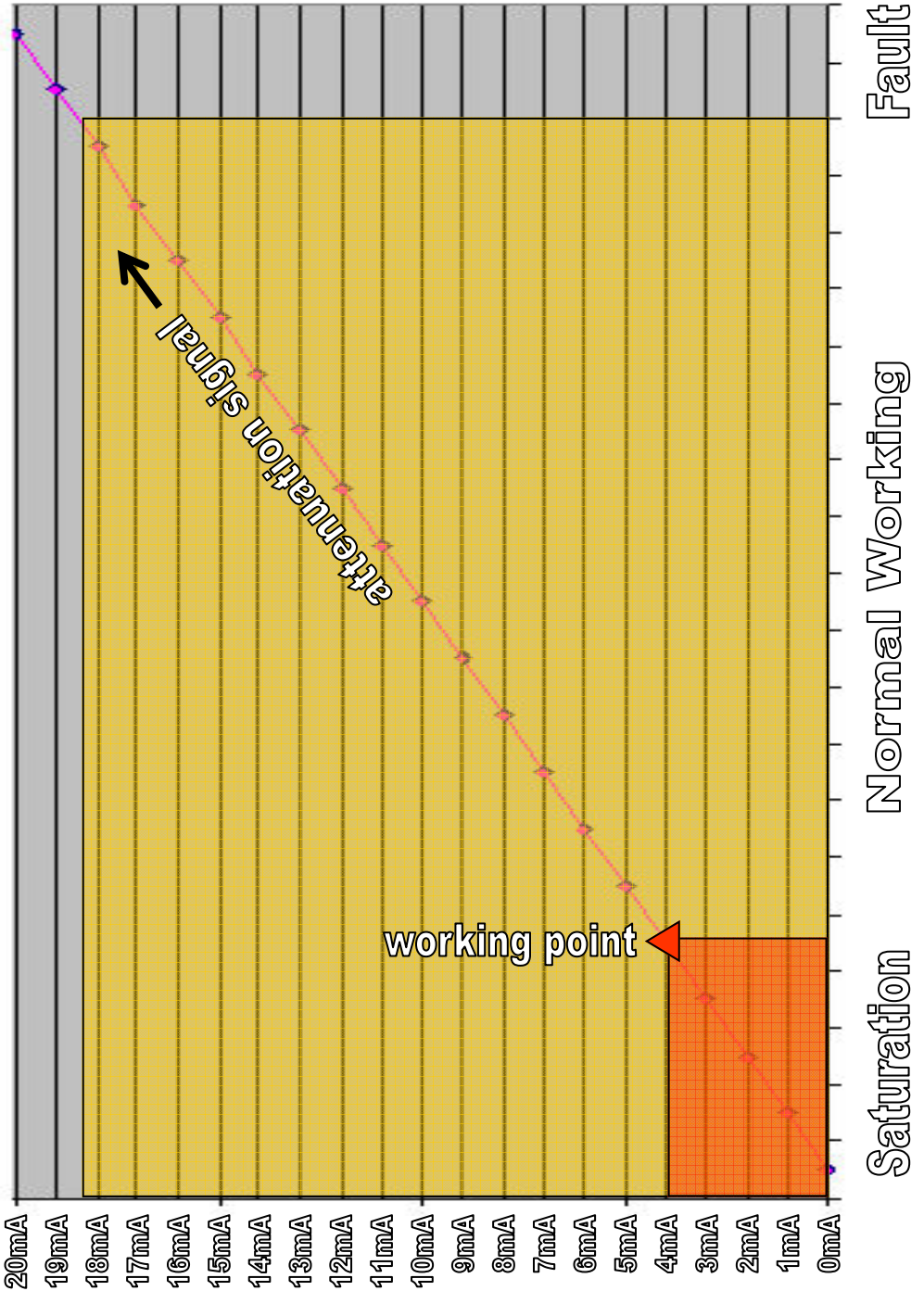
The diaphragm is an optical filter able to assure the proper working of the detector in short distance installations.

- It is installed on ARDEA EExd when the distance between the Transmitter and the Receiver is less than 15m
- On the ARDEA IP65 it should be installed when the distance between Transmitter and Receiver is less than 20m

INSTALLING THE DIAPHRAGM (ONLY ON THE RECEIVER UNIT)

- It is advisable to carry out the operation at ground level.
- Switch off power from the detector and unscrew the Receiver unit's front cover.
- Use a straight screwdriver to remove the seal ring.
- Remove the lens and black filter, taking care not to drop it or dirty them with your hands.
- Insert the 14 mm diaphragm (included) in the Receiver's optics so that it is in its slot.
- Re-assemble the parts with the reverser procedure.





CHARACTERISTICS of the Transmitter and the Receiver

- Aluminium casing (UNI4514) with EEx d IIC T6 protection
- Compliance with CENELEC EN50.014, EN50.018
- INERIS 02 ATEX 0090X certified
- Protection rating: IP66
- Borosilicate front glass
- Aluminium support
- Die-cast aluminium bracket
- Detector body size: 22cm (W) x 19cm (H) x 17cm (D)
- Bracket size: 18cm x 13cm
- Brass cable holder EEx-d IIB IIC EEx-e II
- Cable holder compliance with CENELEC EN50.014, EN50.018, EN50.019
- Cable holder INERIS 03 ATEX 140X certified
- Protection rating of cable holder: IP66
- Cable holder thread: 1/2" - PG13.5
- MAX input cable diameter: Ø10.5mm
- Temperature of working: -20°C ÷ +55°C / Storage temp.: -25°C ÷ +70°C
- Total weight per unit: 4.6kg (x2)

CHARACTERISTICS of the Analysis and Verification Unit - UDC

- Self-extinguishing noryl casing with DIN bar support
- Container size: 53mm (W) x 90mm (H) x 59mm (D)
- Terminal leads size: 16÷28 AWG
- Temperature of working: -20°C ÷ +55°C / Storage temp.: -25°C ÷ +70°C

ELECTRICAL CHARACTERISTICS

- Power supply from 12V dc to 24V dc ±20%
- Maximum power absorption of current @24V
with "SW" switch at LO for short distances (5m ÷ 30m)
 - * Normal Operation : 37mA
 - * Alarm 1 threshold : 51mA
 - * Alarm 1+2 threshold : 62mA
 - * Alarm 1+2 th. & Trouble : 68mA
- Maximum power absorption of current @24V
with "SW" switch at HI for long distances (30m ÷ 100m)
 - * Normal Operation : 52mA
 - * Alarm 1 threshold : 63mA
 - * Alarm 1+2 threshold : 76mA
 - * Alarm 1+2 th. & Trouble : 83mA

CHARACTERISTICS of the Transmitter and the Receiver

- Anodised black aluminium container
- Protection rating: IP65
- Glass front filter
- Aluminium and glass nylon support
- Die-cast aluminium bracket
- Detector size: 12.5cm (W) x 17cm (H) x 15cm (D)
- Bracket size: 18cm x 13cm
- Polyamide cable holder
- Protection rating of cable holder: IP65
- Cable holder thread: PG9
- MAX input cable diameter: Ø6mm
- Cable length provided in delivery: ~90cm
- Temperature of working: -20°C ÷ +55°C / Storage temp.: -25°C ÷ +70°C
- Total weight per unit: 1.7kg (x2)

CHARACTERISTICS of the Analysis and Verification Unit - UDC

- Self-extinguishing noryl casing with DIN bar support
- Container size: 53mm (W) x 90mm (H) x 59mm (D)
- Terminal leads size: 16÷28 AWG
- Temperature of working: -20°C ÷ +55°C / Storage temp.: -25°C ÷ +70°C

ELECTRICAL CHARACTERISTICS

- Power supply from 12V dc to 24V dc ±20%
- Maximum power absorption of current @24V
with "SW" switch at LO for short distances (5m ÷ 50m)
 - * Normal Operation : 37mA
 - * Alarm 1 threshold : 51mA
 - * Alarm 1+2 threshold : 62mA
 - * Alarm 1+2 th. & Trouble : 68mA
- Maximum power absorption of current @24V
with "SW" switch at HI for long distances (50m ÷ 100m)
 - * Normal Operation : 52mA
 - * Alarm 1 threshold : 63mA
 - * Alarm 1+2 threshold : 76mA
 - * Alarm 1+2 th. & Trouble : 83mA

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Reference edition mod. MAEI.ENG - Rev. 00

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CERTIFIED COMPANY



ASSOCIATE



SETRONIC Verona S.r.l.

Via F. Da Levanto, 14/b

37138 VERONA (Italy)

Tel. +39-0458347777 - Fax +39-0458347778

www.setronicverona.com

E-mail: info@setronicverona.com

