G
Технические характеристики

Dupline Separator
Type G 3282 2002

- Separates primary and secondary side of Dupline®, if a short circuit is detected
- Uses 2 channels
- Channel coding by GAP 1605
- H2 Housing
- For mounting on DIN-rail in accordance with EN 50 022

Product Description

The G3282 2002 is a Dupline® bus separator, which can detect short circuits on the Dupline® bus. When a short circuit is detected, it disconnects the secondary side of the Dupline® bus.

The Dupline® bus separator is part of the smarthouse concept. It is designed to be used in installations where one MGG is used to control/monitor several apartments. If a short circuit appears, only the faulty part of the Dupline® bus will be disconnected from the Dupline® bus.

Ordering Key

G 3282 2002 230

Type: Dupline®
H2 Housing
Surveillance unit
2 channels
Voltage
Supply

Type Selection

Supply:	Ordering no.
230 V	**G 3282 2002 230**

Output Specifications

1 output	
Dupline® out	Dupline®
Load	50 mA

Note: The separator works in installations with a max cabel resistance on maximum 200 Ω. This is aproximately 2000 meter with the use of 0.75 mm² wire.

Supply Specifications

Supply	230 VAC
Power Consumption	Typ. 2.5 W

General Specifications

Power supply	230 VAC ± 15% Galvanic separation from Dupline® Bus
Power consumption	2.2 VA
Dupline®	Dupline®
Dimensions	36 x 77 x 70

General Specifications (cont.)

Housing	H2-housing
Output settling time / total delay	< 2 sec.
Indication Dupline® on short (secondary side)	Red
Supply ON LED	Green
Dupline® carrier LED (primary side)	Yellow
Relay data Contact maximum switching current	3A
Contact resistance	< 100 mΩ (measuring conditions 10 mA/20mV)
Max. Switching voltage	250 VAC
Contact material	Silver, nickel, gold-covered
Addressing	GAP1605
Environment Degree of protection	IP 20
Pollution degree	3 (IEC 60664)
Operating temperature	0° to +50°C
Storage temperature	-20° to +85°C
Humidity (non-condensing)	20 to 80% RH
Weight	200 g

Dupline®
Fieldbus | *Installationbus*

Dupline® I/O

I/O1 is an input, which will transmit on the primary side when a short circuit occurs on the secondary side of the seperator.

I/O5 is an output on the secondary side of the separator. If the load on the Dupline® bus is to high, the Dupline® address on I/O5 is activated and the relay opens.

Wiring Diagram

Dupline® primary   Dupline® secondary

D+   D+
D-   D-

| 1 | 2 | 3 | 4 |

Dupline®
bus separator
G32822002

| 21 | 22 |

D: Signal wire

SUPPLY
230VAC

Dimensions (mm)

H2-housing

36
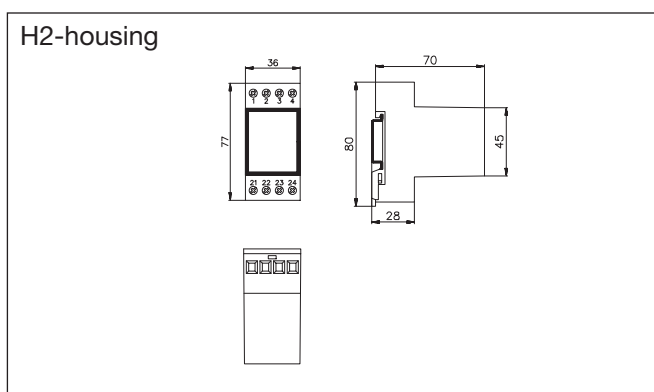
77

70

80   45

28
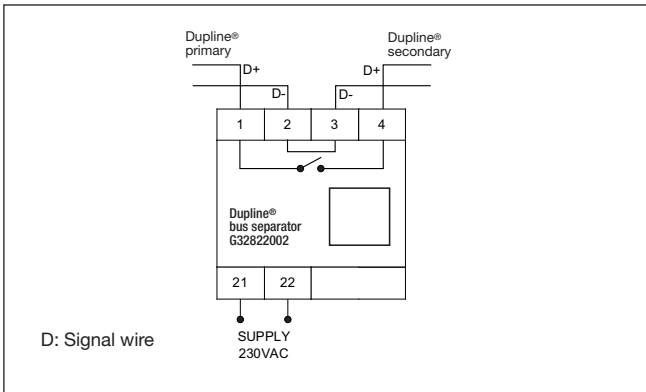
Mode of operation

G 3282 2002 230 is a Dupline® bus separator for short circuit detection and signal disabling.

The primary side of the system is connected to the main Dupline® signal.

The Dupline® net which has to be monitored for short circuit detection, is connected to the secondary side of the system.

The system will disable the secondary side if the Dupline® bus is short-circuited. When the short circuit is located and removed the G 3282 2002 230 will automatically close the relay and go to normal position.

When the system detects a short circuit on the secondary side it will transmit on the channel programmed for I/O 1, on the primary side.

I/O 5 is the monitored channel on the secondary side and has to be programmed to a legal channel that is never used in the Dupline® installation. This is part of the short circuit detection.

If the system is used with a master generator, the address programmed for I/O 5 has to be set as a push-button. If more than one Dupline® bus separator is used on the same Dupline® bus, each of the separations must have its own unique I/O 1 address. I/O 5 can use a common Dupline® address, but must be assigned.

Note: If a Gap is connected to the G 3282 2002 230 it will disable the Dupline® out signal.

Operation information:
If the primary Dupline® bus is disconnected, the relay is in a undefined position for approx. 2 sec. The relay will open and close with 1 kHz.

Light Intensity Sensor
Type G 4311 1120

Dupline®
Fieldbus | Installationbus

- AnaLink transmitter with built-in light intensity sensor
- Measuring range: 0.1 LUX to 100 kLUX
- Uses only 1 channel
- Channel coding by GAP 1605
- Easily mountable
- Supplied by Dupline®

Product Description

The analog light transmitter G43111120 makes it possible to convert analog light values to be transmitted on the Dupline® bus.
The light value can be transmitted in parallel on 8 channels, which are independently programmable, and can thereby be compared to 8 different threshold values in the Channel Generator G38900015 version 2.02 and activate field units accordingly. The design of the LUX makes it possible to mount the sensor discreetly, e.g. on walls.
No external power supply is required, since the sensor is supplied from the Dupline® signal wires.

Ordering Key

G 4311 1120

Type: Dupline®
LUX- housing
Transmitter
No. of Channels
No. of Inputs
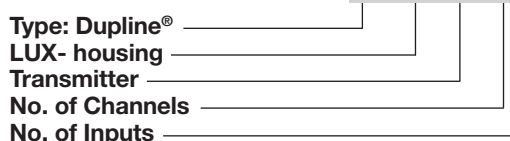
Type Selection

Supply	Ordering no.
By Dupline®	**G 4311 1120**

Supply Specifications

Power Supply	Supplied by Dupline®
Rated operational current	typ. 750 µA

Sensor Specifications

Light measuring range	0.1 LUX to 100 kLUX
Characteristic deviation	-10% to + 10%
Measuring errror over temp. range	-30% to + 30%
Response time	6s to 34s

General Specifications

Channel programming	By GAP 1605 and special cable GAP-TPH-CAB
Channel assignment	1 channel, freely programmable
Environment	
Degree of protection	IP 44
Operating temperature	-10 to +60°C (14 to +140°F)
Connection	
Screw terminal	Pin 1: GND (grey)
	Pin 2: Dupline® (red)
Housing	
Material Housing	Lexan (Polycarbonate)
Plug	Nylon
Color	Translucent / Offwhite
Dimensions (W x H x D)	40 x 83 x 43 mm

Dupline®
Fieldbus | *Installationbus*

Mode of Operation

Dupline® channel allocation
The LUX sensor transmits the light value using the AnaLink principle, i.e. the sensor usually transmits the value serially on one channel. When several threshold values are to be configured for the same light value, it is possible to transmit the value on up to 8 channels. If not all 8 channels are used, the unused channels can remain un-programmed.

The LUX sensor transmits its Analink value logarithmically. If the LUX value is transferred to an external unit, this unit must support the following logarithmic function:
$$LUX = 0.1 \cdot 10^{\left(\frac{3 \cdot Analink}{128}\right)}$$

Mounting
As a rule, the G4311120 LUX sensor should be mounted where the outdoor light comes into the room to be monitored, e.g. on the wall where the windows are to be darkened by roller blinds. If the sensor is overshadowed by an overhang of the roof or similar, this will increase the darkness at the sensor, which in connection with a dimmer function will cause the dimmer to switch on prematurely and to switch off too late.

An optical feedback of the lighting to the LUX must be avoided to the greatest possible extent, since the light affecting the sensor when the lighting is switched on can cause a switch on/switch off cycle.

When selecting the place of monitoring, environmental effects (dust, dirt, snow) must also be taken into consideration, since in the long run they can reduce the light sensitivity of the LUX.

Dimensions

All dimensions in mm
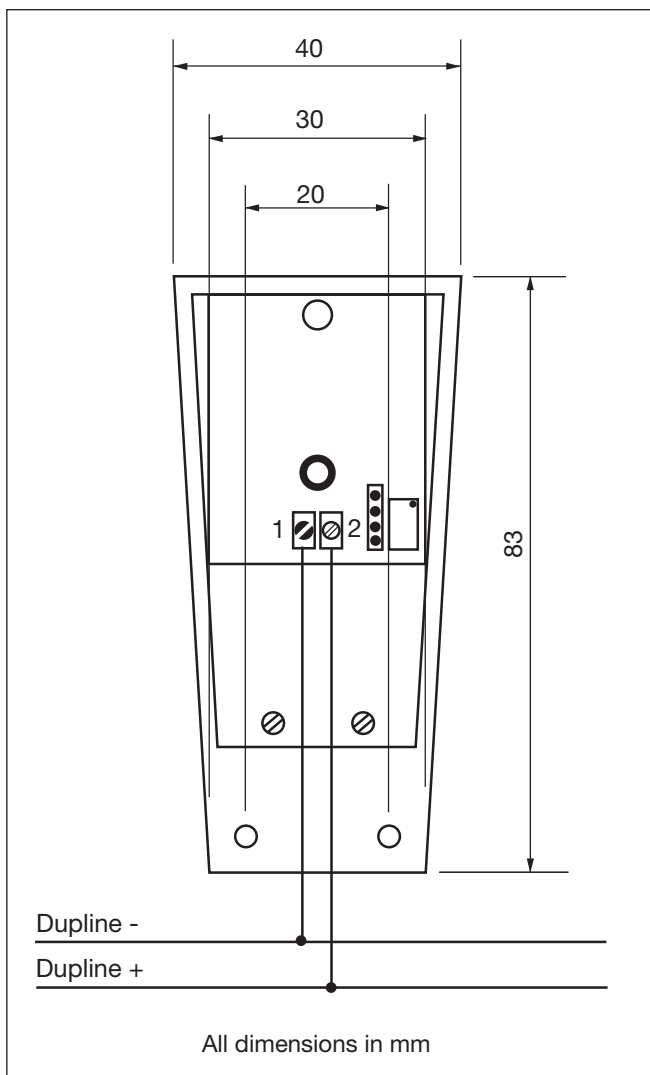
Accessories

Programming cable
to GAP 1605   GAP-TPH-CAB

Remote Transceiver Type G 8840 5549

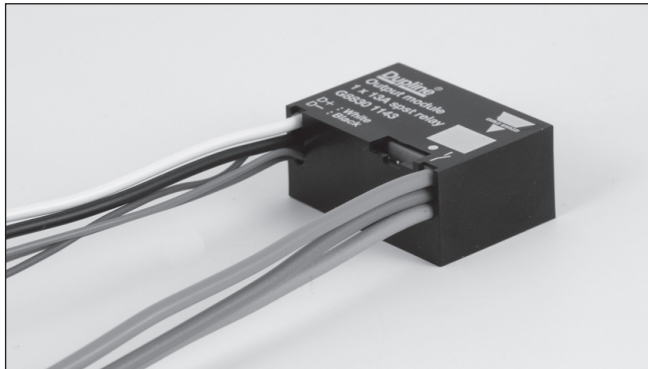**CARLO GAVAZZI**

- Small-sized transceiver
- Output load: 8 A/63 VAC
- Powered via Dupline®
- Address coding by GAP 1605
- 3 contact inputs
- 1 tamper channel

Product Description

The Dupline® decentralised transceiver has a built-in SPDT relay for control of a load of up to 8 A/63 VAC. The module is especially designed for applications requiring a flexible, decentralised installation with a separate power and signal (control) bus. The compact size of the module makes it fit in small enclosures.

Ordering Key

G 8840 5549

Type: Dupline® ⎯⎯⎯⎯⎯⎯⎯⎯
Housing ⎯⎯⎯⎯⎯⎯⎯⎯
Transceiver ⎯⎯⎯⎯⎯⎯⎯⎯
No. of channels/in- and outputs ⎯⎯⎯⎯⎯⎯
Output type ⎯⎯⎯⎯⎯⎯⎯⎯

Type Selection

Ordering no.

G 8840 5549

Output Specifications

Output	1 SPDT relay
Contact ratings (Ag/Ni 90/10)	μ (micro gap)
Resistive load	8 A/63 VAC
	8 A/24 VDC
	0,8 A/63 VDC
Mechanical lifetime	> 2x10⁶ operations
Electrical lifetime	> 1x10⁶ operations/ 24 VDC 2A
	> 1x10⁵ operations/ 24 VDC 8A
Minimum load (recommended)	10 mA/12 V
Operating frequency	≤ 60 operations/minute
Response time	1 pulse train

Electrical lifetime: $> 1 \times 10^6$ operations/ 24 VDC 2A; $> 1 \times 10^5$ operations/ 24 VDC 8A. Mechanical lifetime: $> 2 \times 10^6$ operations.

Supply Specifications

Supplied by Dupline®	
Normal consumption	≤ 1.6 mA
Charge consumption	≤ 3.1 mA (for max 1 s after relay state change)
Power-on delay	Typ. 2 s
Power-off delay	≤ 1 s

Input Specifications

Inputs	3 contacts + one tamper channel (I/O 5-8)
Open loop voltage	2 to 3 VDC
Short-circuit current	25 μA
Operating time for signal "1"	≤ 1 pulse train + 10 ms
Operating time for signal "0"	≤ 1 pulse train + 110 ms
Contact resistance	≤ 1 kΩ
Cable length	≤ 3 m
Dielectric Voltage	
Inputs - Dupline®	None
Inputs - Output	≥ 200 VAC (rms)
Dupline® - Output	≥ 200 VAC (rms)

General Specifications

Environment	
Pollution degree	3 (IEC 60664)
Operation temperature	0° to +50°C (32° to 122°F)
Storage temperature	-50° to +85°C (-58° to 185°F)
Humidity (non-condensing)	20 to 80%
Housing	
Material	Noryl GFN 1, black
Dimensions (h x w x d)	26 x 39 x 17 mm

CARLO GAVAZZI

Mode of Operation

The in- and output address-es and fail polarity can be coded by means of the code programmer GAP 1605, with the GAP-THP-CAB cable.
Upon loss of the Dupline® carrier, the output goes to the predefined fail polarity.
The three contact inputs are located on in/out 5, 6 and 7 on the GAP 1605.

Tamper channel: If a chan-nel is programmed on in/out 8, it will be transmitted as long as the module is con-nected to Dupline.

Wire Connections

Bus:	White	= Dupline® signal
	Black	= Dupline® GND
Output:	Brown - Blue	= Relay contact-set NC
	Brown - Orange	= Relay contact-set NO
Bus wires:	2 x 0.75 mm²,	
	250 V isolation, single core, 150 mm	
Output wires:	3 x 1.5 mm²,	
	250 V isolation, single core, 150 mm	
Input wires:	3 x 0.25 mm²,	
	Multi core, 150 mm	

Wiring Diagram

Channel Configuration

On GAP 1605 the in/out configuration is as follows:

In/out 1:	Relay output.
In/out 5:	Contact input 1. Green wire.
In/out 6:	Contact input 2. Yellow wire.
In/out 7:	Contact input 3. Violet wire.
In/out 8:	Tamper channel (built-in)

Dimensions

Light Intensity Sensor
Type G 8911 1120

- AnaLink transmitter with built-in light intensity sensor
- Measuring range:
  A: 5-5000 LUX, B: 3000-300.000 LUX
- Uses only 1 channel
- Channel coding by GAP 1605
- Easily mountable
- Supplied by Dupline®

Product Description

The analog light transmitter G89111120 makes it possible to convert analog light values to be transmitted on the Dupline® bus.

The design of the LUX sensor makes it possible to mount the sensor discreetly, e.g. on walls.

No external power supply is required, since the sensor is supplied from the Dupline® signal wires.

Ordering Key

G 8911 1120

Type: Dupline®
LUX- housing
Transmitter
No. of Channels
No. of Inputs

Type Selection

Supply	Ordering no.
By Dupline®	**G 8911 1120**

Supply Specifications

Power Supply	Supplied by Dupline®
Rated operational current	< 4 mA

Sensor Specifications

Light measuring range	5 LUX to 300 kLUX
Characteristic deviation	-20% to + 20%
Measuring errror over temp. range	-30% to + 30%
Response time	6s to 34s

General Specifications

Channel programming		GAP 1605
Channel assignment		1 channel, freely programmable
Environment		
Degree of protection		IP 44
Operating temperature		-10 to +60°C (14 to +140°F)
Connection		
Screw terminal		Pin 1: Dupline®
		Pin 2: GND
Housing		
Material	ENSTO	Cubo D 050504
	Housing	Lexan (Polycarbonate)
	Plug	Nylon
Color		Translucent / Offwhite
Dimensions (W x H x D)		55 x 53 x 36 mm
Settings	Range A:	5-5000 LUX
	Range B:	3000-300.000 LUX
		Range is changed by switch

Dupline®
Fieldbus | *Installationbus*

Mode of Operation

Dupline® channel allocation

The LUX sensor transmits the light value using the AnaLink principle, i.e. the sensor transmits the value serially on one channel.

The LUX sensor transmits its Analink value logarithmically. If the LUX value is transferred to an external unit, this unit must support the following logarithmic function:

Range A:
$$LUX = 5 \cdot 10^{\left(\frac{3 \cdot Analink}{255}\right)} \text{ and}$$

Range B:
$$LUX = 3000 \cdot 10^{\left(\frac{2 \cdot Analink}{255}\right)}$$

Mounting

If the LUX sensor is used to control a light source, an optical feedback from the light must be avoided to the greatest extend, since the light level will affect the LUX sensor and that can cause unwanted on/off cycles. This can be avoided by placing the LUX sensor so that the light source will not affect the sensor.

When selecting the place of monitoring, environmental effects (dust, dirt, snow) must also be taken into consideration, since in the long run they can influence the light sensitivity of the LUX.

Sunlight Protection

As a rule, the G89111120 LUX sensor should be mounted where the outdoor light comes into the room to be monitored, e.g. on the wall where the windows are to be darkened by roller blinds. If the sensor is overshadowed by an overhang of the roof or similar, this will increase the darkness at the sensor, which in connection with a dimmer function will cause the dimmer to switch on prematurely and to switch off too late.

Twilight

In twilight mode the G89111120 must be mounted on the wall pointing northwards, so that the sun light cannot reach the lux sensor.

Dimensions/Wiring Diagram

All dimensions in mm
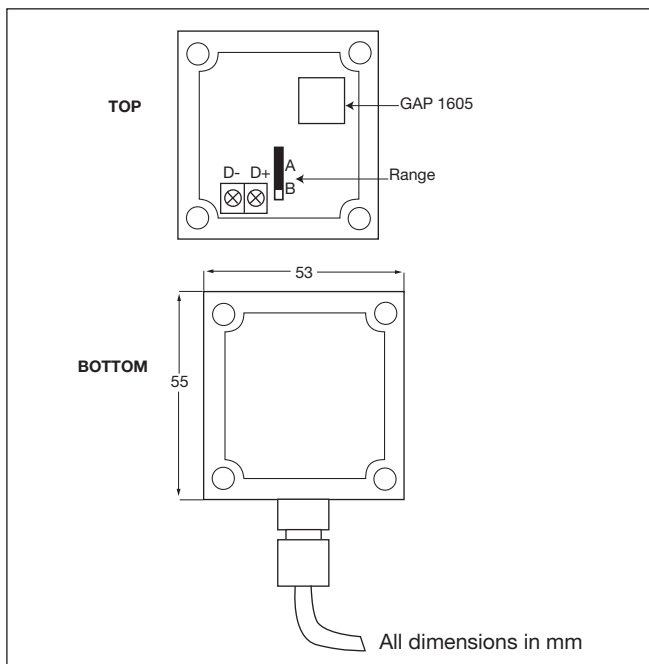
Wireless PIR Sensor
Type G 8986 1127

Dupline®
Fieldbus | *Installationbus*

- Passive infrared detector (PIR)
- Detects movement by e.g. a person
- Indoor applications
- Operating distance: 10 m
- Operating angle: 70°
- Walk test: LED indication
- Switch for walk test LED on/off
- Channel coding by GAP 1605
- Supplied 2 x AAA battery
- Wireless range up to 100 m in open air
- Battery lifetime approximately 1 year

Product Description

The G89861127 is a wireless passive infrared detector with a built-in transmitter for detection of e.g. a person's movements. It is basically used for light control.
The wireless PIR is part of the Dupline smart-house automation concept.

Ordering Key

	G 8986 1127

Type: Dupline®
Type

Type Selection

Supply	Ordering no. 1 channel PIR detector
2 x AAA battery (800 mAH)	G 8986 1127

Batteries are not included

Supply Specifications

Power supply	Supplied by batteries
Rated operational current	2 x AAA battery (800 mA h). With 1700 activations a day, the lifetime of the batteries is approximately 1 year

Input Specifications

Inputs	PIR on I/O 1
Lens	Dual detecting zones
Segments	24
Levels	3
Angle	70°
Operating distance	≤ 10 m (see radiation diagram)
Wave length	7 to 14 µm
Input detection speed	0.5 to 5 pulses/s

General Specifications

Power ON delay	Typ. 1 min.
Walk test indication	LED, red
Switch ON	Walk test ON
Switch OFF	Walk test OFF
Environment	
Degree of protection	IP 40
	For indoor applications
Operating temperature	0° to +50°C (+32° to +122°F)
Storage temperature	-30° to +70°C (-22° to +158°F)
Material	
Housing Colour	White
Lens	Polyethylene
Dimensions (WxHxD)	104 x 55 x 57 mm
Weight	Approx. 150 g
	Excluding batteries

Dupline®
Fieldbus | Installationbus

Mode of Operation

G 8986 1127 is a 1-channel monostable transmitter with a PIR detector, which operates by means of a dual-element detector.

The transmitter is activated if the temperature suddenly changes (most often it will be heat radiation from a person) in relation to the background radiation. Consequently, the transmitter can be used for ON/OFF switching of lighting, air-conditioning etc. If a person moves within a detection zone, G 8986 1127 is acti-vated.

Switch
If the walk test (switch) is ON, the LED turns ON when the PIR is activated for just 0.15 seconds. Then a non-trigger time period of 10 seconds will follow before the PIR and LED can be reactivated.

Slow movements between zones resulting in a detection speed of less than 0.5 pulses/sec will not be detected. Nor will rapid movements resulting in a detection speed of more than 5 pulses/sec be detected. As G 8986 1127 is a passive device, several detectors can be placed in the same room without interfering with each other.

The module should not be installed in the following places:

a) Outdoors.

b) In places exposed either to sunlight or to motor vehicle headlights pointing directly at the sensor.
c) In places exposed to direct air flow from a heater or air conditioner.

d) In places where rapid temperature changes occur.

e) In places exposed to severe vibration.

f) Close to glass or other objects which might reflect the infrared radiation.

T**he wireless G 8986 1127** is programmed as the standard PIR sensor G89101127 by using a GAP 1605 (see data sheet for this unit).

The communication between G 8986 1127 and the G3486 005x 230 base is established in the following way:

- Push the "Mode" button on the G 8986 1127 base until the red LED indicates asso-ciation.
- Push the push-button on the module that you want to associate with the G3486 005x 230 base.

Once the association is complete, the LED will light up briefly (approx. 1 second).
If the association fails, e.g. because the range is exceeded, the LED in the PIR module will flash rapidly 5 times. This also occurs if, under normal circumstances, it is not possible to establish connection between the G3486 005x 230 base and the module.

It is possible to disable the communication between the G3486 005x 230 base and all the modules with which it is associated.

- Push the "Mode" button on the G3486 005x 230 base until the red "Disable" LED is lit.
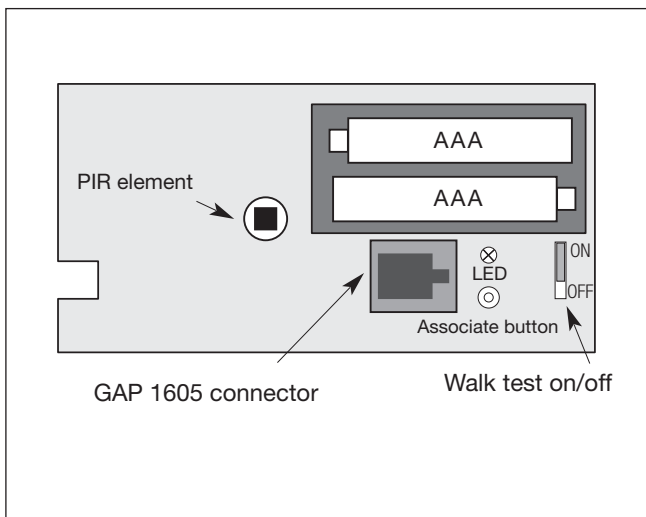This means that there is no connection between the G3486 005x 230 base and its associations.
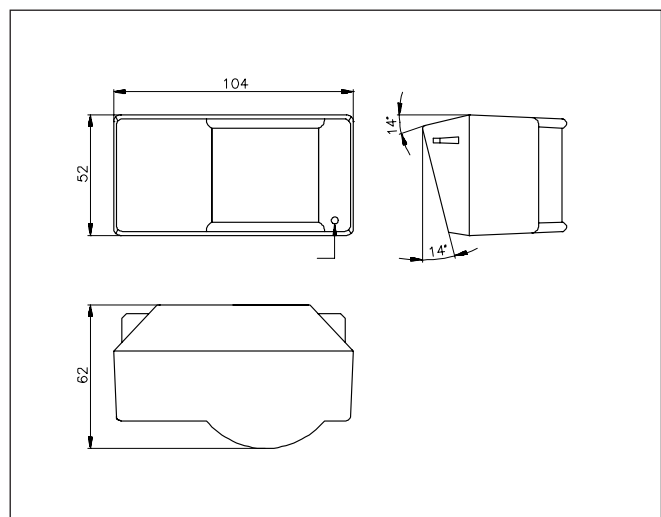To reestablish the connection, push "Mode" until neither "Associate" or "Deactivate" are lit.
Under normal circumstances, the "Supply" and "Dupline" LEDs will be lit continuously, whereas the LED for "Communication" only flashes briefly when you push the associated push-button.

The LED on the G 8986 1127 will light up brieflyy when the PIR sensor has been activated by motion. It is possible to disable the LED by moving the switch on G8986 1127 to its off position.
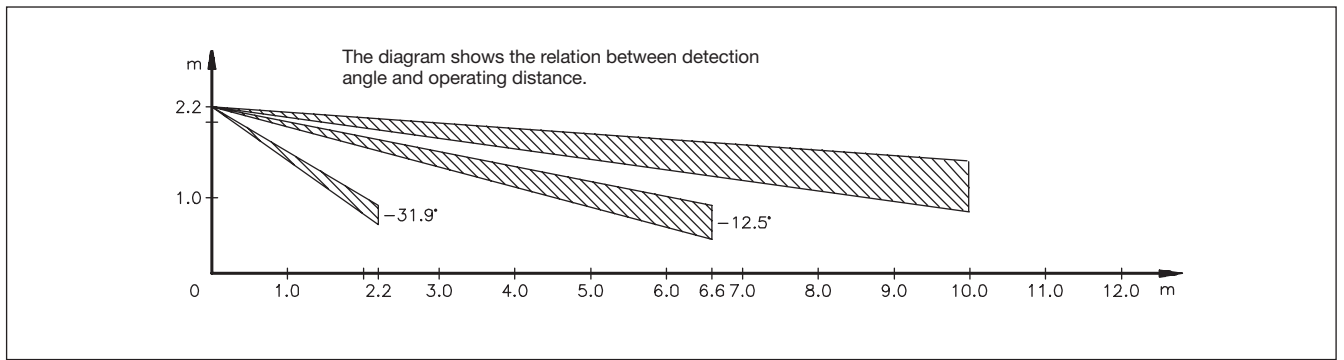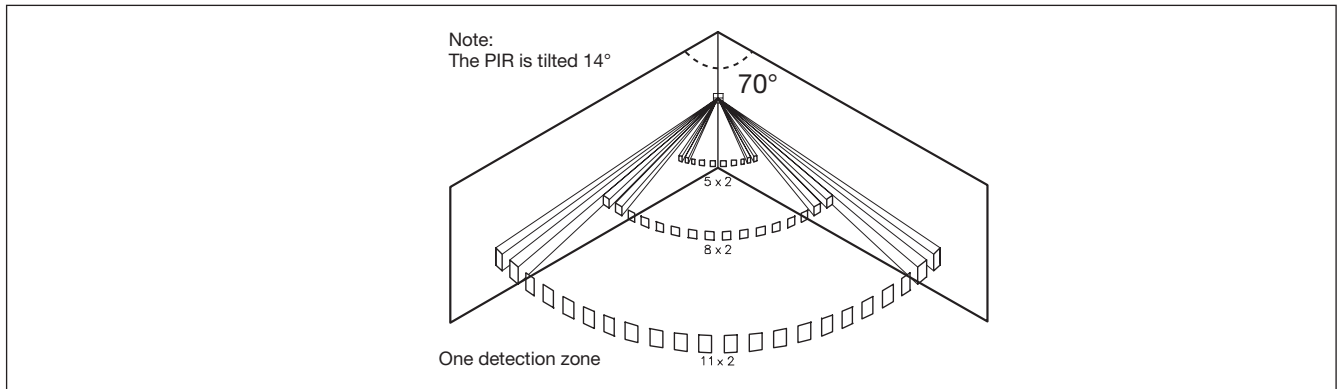
Wiring Diagram

PIR element

AAA

AAA

LED

ON

OFF

Associate button

GAP 1605 connector

Walk test on/off

Dimensions (mm)

104

52

14°

14°

62

Radiation Diagram (m)

Note:
The PIR is tilted 14°

70°

5 x 2

8 x 2

One detection zone

11 x 2

m

The diagram shows the relation between detection
angle and operating distance.

2.2

1.0

−31.9°

−12.5°

0   1.0   2.2   3.0   4.0   5.0   6.0 6.6 7.0   8.0   9.0   10.0   11.0   12.0   m

G34409943824

4 inputs / 4 outputs digital transceiver

CARLO GAVAZZI

Benefits

- **Integrated system.** Dupline® is the brand name for Carlo Gavazzi's 2-wire bus system.
- **Cost reduction.** The use of a bus system is a proven way to reduce installation costs – especially when the distance between I/O points are extensive.
- **Fast and easy installation.** Completely free topology, no special cable required, no screen or twist. It can go for 2 km and even further with repeaters.
- **Scalability.** New modules can be progressively integrated into the system according to the application needs.
- **Modularity.** The system is composed by many modules, powered by the bus, so that each installation can be precisely and easily sized.
- **Channel coding.** By GAP 1605 programming unit.

Description

The G34409943824 is a Dupline® 4-input and 4-output module suitable to any type of application. It is implemented in a H4 housing for a DIN rail installation.
Several modules can be connected to the same Dupline® 2-wire bus and thus the wiring to the controller can be significantly simplified.

Applications

Dupline® is a bus system that offers unique solutions for a wide range of applications in industrial automation, water distribution, energy management, railway systems and many other areas.

Main features

- 4 input channels and 4 output channels
- 24 VAC/VDC power supply
- Relay load: 5 A / 250 VAC, 3A / 30 VDC
- LED indication for power supply, Dupline® bus, inputs and outputs

Structure
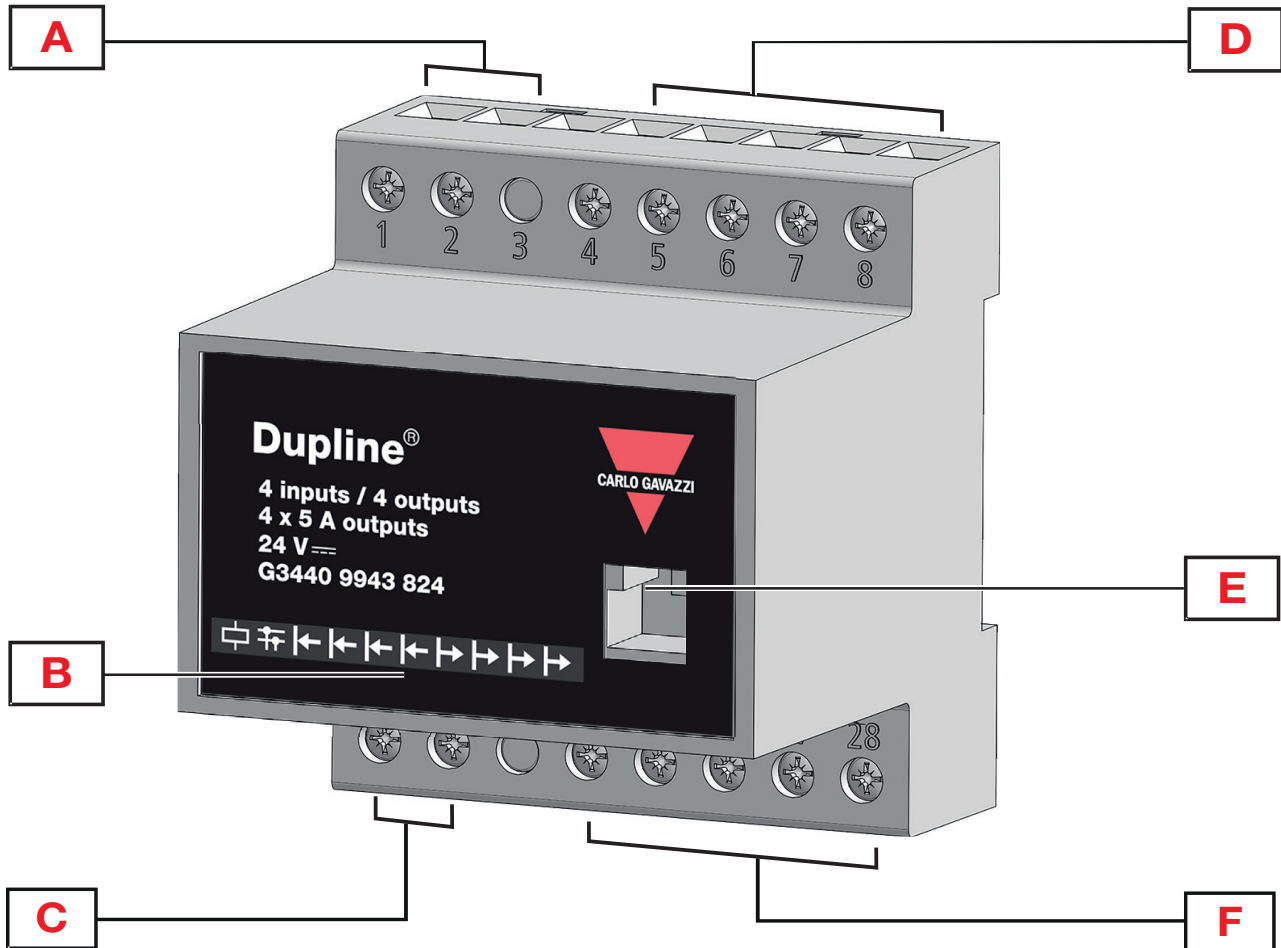
Element	Component	Function
A	Dupline® terminals	Dupline® terminals connection
B	Information LED	
	Green LED (Power supply)	ON: Power supply ON OFF: Power supply OFF
	Yellow LED (Dupline® bus)	ON: Communication on the Dupline® bus OFF: No communication on the Dupline® bus
	4 red LEDs (IN1, IN2, IN3, IN4)	Input contact status ON: Input closed OFF: Input open
	4 red LEDs (OUT1, OUT2, OUT3, OUT4)	Output contact status ON: Output closed OFF: Output open
C	Power supply terminals	Power supply
D	Input terminals	Input terminal connection
E	RJ12 connector	For Dupline® channels programming
F	Output terminals	Output terminal connection

Features

General

Material	Noryl
Dimensions (HxWxD)	4-DIN module
Weight	250 g
Protection degree	Front: IP40; Screw terminal: IP20
Terminal	14 screw-type; Section: 1.5 mm² maximum; Torque: 0.4-0.8 Nm
Pollution degree	2 (IEC 60664-1. Par. 4.6.2)
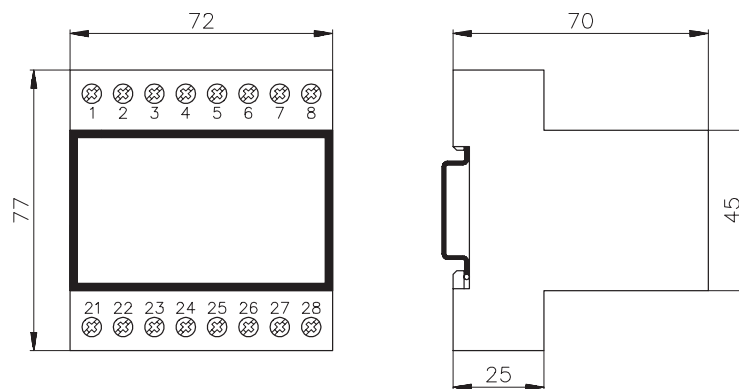
Environmental

Operating temperature	-40° to 50°C (-40°F to 122°F)
Storage temperature	-50° to 85°C (-58°F to 185°F)
Humidity (not condensing)	20 to 90% RH

Compatibility and conformity

Electromagnetic compatibility (EMC) - immunity	EN 61000-6-2
Electromagnetic compatibility (EMC) - emissions	EN 61000-6-3
Approvals	CE

Power Supply

Power supply	AC: 24 VAC ±15% DC: 24 VDC ±20%
Rated operational power	AC: 5 VA DC: 5 W

CARLO GAVAZZI

Dupline®

Voltage	8.2 V
Maximum Dupline® voltage	10 V
Minimum Dupline® voltage	5 V
Maximum Dupline® current	1.1 mA

Input specifications

Number of inputs	4
Type	Voltage-free contact, NPN
Input current	< 330 µA
Max. resistance of the close contact	200 Ω
Open loop voltage	< 3.3 VDC
Cable length	< 3 m
Response time	< 168 ms (128 Dupline® channels)

Outputs

Number of outputs	4
Load	Resistive load (cosφ=1)
Max. switching voltage	AC: 250 VAC DC: 30 VDC
Max. current load	AC: 5 Amp (1250 VA) DC: 3 Amp (90 W)

Dielectrical strength

Power supply to input	
Power supply to Dupline®	
Power supply to output	4 KVAC for 1 min., 6 KV impulse 1.2 / 50 µs
Input to output	
Dupline® to input	
Dupline® to output	
Inputs from each other	Not insultated
Outputs from each other	

▶ **Dupline® channels programming**

The G34409943824 module has to be connected to the SD2DUG24 Dupline® Master channel generator.
Each input/output is coded individually by means of the GAP1605 programming unit set in single chiannel addressing mode. For the general procedure of coding, please refer to the related datasheet.

Default Dupline® channels	
Input 1	**A1**
Input 2	**A2**
Input 3	**A3**
Input 4	**A4**
Output 1	**A5**
Output 2	**A6**
Output 3	**A7**
Output 4	**A8**

Connection Diagrams
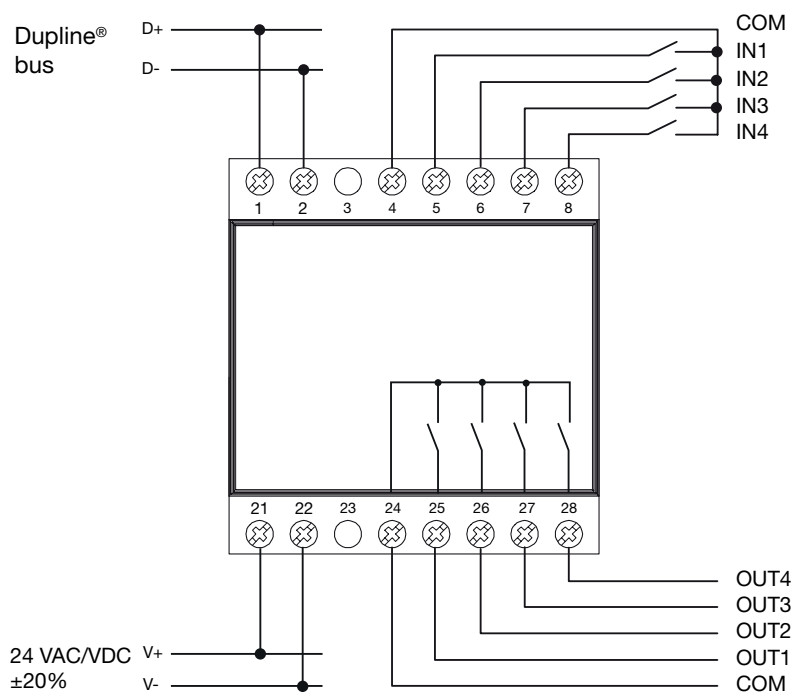
Terminals	Description
1	Dupline® bus (D+)
2	Dupline® bus (D-)
4	Inputs common terminal
5	Input 1
6	Input 2
7	Input 3
8	Input 4
21	Power supply (V+)
22	Power supply (V-)
24	Outputs common terminal
25	Output 1
26	Output 2
27	Output 3
28	Output 4