## I/O-Module for Elevators Type G 21404421700



## Product Description

Direct interface to the I/O's of elevator floor stations. The input pulses are prolonged to 0.5 s to ensure transfer of fast push-button activations. Due to the small size of the module it can be integrated into most push-button panels. All modules in an eleva-
tor is connected to the same 3 wires for bus communication with the control system and DC power supply for the lamps. Installerfriendly mounting, operation and maintenance without requirements for any special tools or programming.

## Type Selection

| Supply | Ordering no. <br> PNP-outputs |
| :--- | :--- |
| $10-30$ VDC | G 21404421700 |

## Input Specifications

| Inputs | 2 contacts or |
| :--- | :--- |
|  | NPN -transistor |
| Open loop voltage | 8.0 VDC |
| Short circuit current | $17 \mu \mathrm{~A}$ |
| Start peak current | 20 mA |
| Contact resistance | $\leq 100 \Omega$ |
| Cable length | $\leq 3 \mathrm{~m}$ |
| Response time | $\leq 156 \mathrm{~ms} @ 128$ channels |
| Input pulse prolongation | Typ. 0.5 s |
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- 2 push-button inputs
- 2 PNP-transistor outputs
- Open printed circuit board
- Small size ( $54 \times 40 \mathrm{~mm}$ )
- LED-indications for supply and Dupline ${ }^{\circledR}$ carrier
- DC-supply
- 3-wire system with Dupline ${ }^{\circledR}$ and supply of module and output load through G 21960000700
- Channel coding by GAP 1605

G 21404421700
Type: Dupline ${ }^{\circledR}$
Open PCB
I/O-module $\qquad$
Number of I/Os
I/O-type


DC-supply

## Output Specifications

| Outputs | 2 PNP -transistors |
| :--- | :--- |
| Output voltage drop | $\leq 2.0 \mathrm{~V}$ |
| Current per output | $\leq 200 \mathrm{~mA}$ |
| Short circuit protection | None |
| Built-in protective diodes | Yes |
| Off-state leakage current | $\leq 200 \mu \mathrm{~A}$ |
| Response time | 1 pulse train <br>  <br>  <br>  136 ms @ 128 channels) |

## Supply Specifications

## Power supply

Rated operational voltage ( $\mathrm{V}_{\text {in }}$ ) Ripple
Reverse polarity protection
Current consumption
Power dissipation
Inrush current
Transient protection voltage
Dielectric voltage
Supply - Dupline ${ }^{\circledR}$
Supply - Inputs
Supply - Outputs

Overvoltage cat. III (IEC 60664) 10-30 VDC (ripple included)
$\leq 3 \mathrm{~V}$
Yes
$\leq 30 \mathrm{~mA}$
$\leq 1 \mathrm{~W}$
$\leq 1 \mathrm{~A}$
800 V
None
None
None

General Specifications

| Power ON delay | Typ. 2 s |
| :---: | :---: |
| Indication for |  |
| Supply ON | LED, green |
| Dupline ${ }^{\text {® }}$ carrier | LED, yellow |
| Environment |  |
| Operating temperature | $-20^{\circ}$ to $+50^{\circ} \mathrm{C}\left(-4^{\circ}\right.$ to $\left.+122^{\circ} \mathrm{F}\right)$ |
| Storage temperature | $-50^{\circ}$ to $+85^{\circ} \mathrm{C}\left(-58^{\circ}\right.$ to $\left.+185^{\circ} \mathrm{F}\right)$ |
| Humidity (non-condensing) | 20-80\% |
| Mechanical resistance |  |
| Shock | $15 \mathrm{G}(11 \mathrm{~ms})$ |
| Vibration | 2 G (6 to 55 Hz ) |
| Dimensions | Open PCB $54 \times 40 \mathrm{~mm}$ |
|  | 4 pcs. of nylon PA6 snap |
|  | locks are included for mounting the PCB in ø 4.8 holes |
| Weight | 50 g |

Pin Allocation

| Terminal | Input/Output |
| :---: | :---: |
| DUP | Dupline $^{\circledR}$ signal |
| GND | Dupline ${ }^{\circledR}+$ supply GND |
| POW | Supply IN |
| DC + | DC out |
| I1 | Input 1 |
| 12 | Input 2 |
| O5 | Output 1 |
| O 6 | Output 2 |
|  |  |
|  |  |

## Wiring Diagram



## Programming Information

The table below shows the relation between the inputs/outputs of the G 21404421 and the In/Out-markings on the GAP1605.

| GAP 1605 | G 2140 4421 |
| :---: | :---: |
| In/out 1 | Input 1 (11) |
| In/out 2 | Input 2 (12) |
| In/out 3 | Not used |
| In/out 4 | Not used |
| In/out 5 | Output 1 (O5) |
| In/out 6 | Output 2 (O6) |
| In/out 7 | Not used |
| In/out 8 | Not used |

## Mode of Operation

The l/O-units use three wires for the communication with all the other I/O-units of an installation, for the supply of the I/O-units and for the loads connected to the outputs of the units. This implies, that the "common" of the communication signal is identical to the "minus" of the supply.

The DC-supply voltage must connect to the system through a G 21960000700 , which also performs the chan-
nel generator function and the RS485 communication link to the elevator controller (please refer to the data sheet for $G$ 21960000700 for details)

Each I/O-unit has 2 inputs (NPN/contact) and 2 PNPoutputs. Every input and output is given its individual address with the coding unit GAP 1605 (please refer to the respective data sheet for details). The ON/OFF-signal that is applied to the input of an I/O-unit is associated
to the address given to that input. Any output of an I/Ounit that is given the identical address will now follow that input signal and switch its output signal ON or OFF. This means that a signal which is input at one location (for example as an output from the lift controller) may be output wherever required and as many times as required.

An input pulse stretcher is used on every input to
assure that the changes of input signals (even extremely short ones) are communicated by the system.

The output status of all outputs of an I/O-unit may be pre-defined for cases like loss of power and loss of communication. Please refer to the paragraph "Output status setting" of the data sheet for the GAP 1605 to change the default setting (all outputs OFF).

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