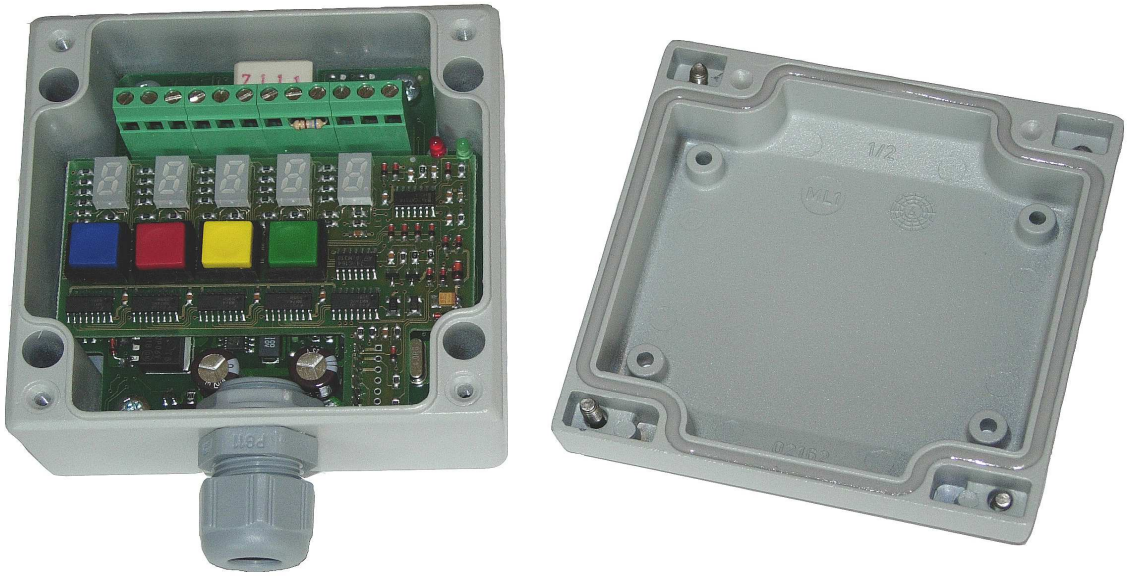
Sheet

3

# Planar

## Control unit for automatic leveling of aerial platforms

Planar is a control unit designed to solve a specific need of the aerial platforms world: the automatic leveling and stabilization control of the cage. It is equipped with a double accelerometrical sensor, able to detect the hundredth of a degree, and operates through a complex series of algorithms driving a pair of proportional valves in safety regime. Through a good parametrization it is possible to get the cage always perfectly parallel to the ground, regardless of arm movements that raises it. The used algorithms are geared to obtain a smooth and linear behaviour, in order to ensure the maximum confort for the operator, when the cage rises to significant heights. The control unit can operate just as well with hydraulic motors and cylinders. It can be equipped with a small display with buttons for quick parameters adjustment. Thanks to a sturdy aluminium, with fairlead, it has a IP 65 protection degree, which makes it suitable to be installed on the machine structures without further protections.



Planar with parametrization and diagnostics plug-in

- Operational and user programs totally upgradable.
- Proportional valves control with current feed-back.
- Short-circuit and over-temperature protection on all of the outputs.
- Graphic interface in Windows environment for the parametrizatioin.
- Display for the on board parametrization.
- Configurable PID type control models.
- Empirical models for band width compression and error modeling.
- Voltage outputs for real time analogical monitoring of the variables.
- CAN-Bus interface.

## Working conditions

| | |
|---|---|
| Operational supply voltage: | **+6V - +36V** |
| Operational absorption logic circuit: | **< 0,5A** |
| Working temperature: | **-20°C - +85°C** |
| Maximum working temperature: | **-40°C - +105°C** |

## Inputs and outputs

| | |
|---|---|
| Digital inputs: | **2** |
| Digital output for signals 0,5A max: | **2** |
| Digital outputs PWM* 5A max: | **2** |
| Current feedback input 10 bit resolution: | **1** |

*Pulse Width Modulation

## Inclinometer

| | |
|---|---|
| Resolution: | **1-100°** |
| Range: | **-10° - +10°** |

## CAN-Bus and communication door

| | |
|---|---|
| CAN-Bus channel: | **FULL CAN 2.0 A e B** |
| Protocol standard: | **SAE J1939** |
| Maximum speed: | **500 Kbit/sec.** |
| Communication door: | **RS 232 C** |
| Maximum data speed: | **19,2 Kbi/sec.** |

## Processing

| | |
|---|---|
| Microprocessor: | **16 bit** |
| Operational rate: | **16 MHz** |
| Flash memory program: | **64 Kbytes** |
| PL (Performance Level) EN ISO 13849-1: | **D** |
| SIL (Safety Integrity Level) EN 62061: | **2** |
| MTBF (Mean Time Between Failures) Siemens SN29500-1 Ground Mobile: | **707,20** |

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