

# S-DIAS Analog Input Module AI 075



with 6 analog inputs or potentiometer inputs  
1 temperature input  
1 reference output (10 V)

The S-DIAS AI 075 analog input module has six  $\pm 10$  V analog inputs or 0-100 % potentiometer inputs with a 16-bit resolution, whereby the first input can be used as a temperature input (KTY, PT1000). For the potentiometer inputs a separate temperature input (KTY, PT1000) and a 10 V reference output, which can be loaded with a maximum of 25 mA, are available.

## Periphery Controller

|                      |   |
|----------------------|---|
| Periphery Controller | yes   |
| Functionality        | The periphery controller executes the analog conversion, the standardization of the analog inputs and the software filtering of the analog inputs and provides the data on the S-DIAS bus via DPRAM with variable settings for the measuring time points. |

## Analog Inputs Specifications $\pm 10$ V or Potentiometer Inputs 0-100 %

|                             |  |                 |
|-----------------------------|--|-----------------|
| Number of channels          | 6  |                 |
| Measurement range           | -10 ... +10 V  | 0-100 %         |
| Measurement value           | -10.000 ... 10.000   | 0 ... 10.000    |
| Inputs                      | differential input   | potential input |
| Resolution                  | 16-bit (ca. 0.3 mV/LSB)  |                 |
| Conversion time per channel | standard mode: 250 $\mu$ s<br>variable sample points: S-DIAS cycle time (min. 250 $\mu$ s) |                 |
| Common mode range           | $\pm 12$ V   |                 |
| Input resistance            | > 10 M $\Omega$  |                 |

|                       |  |   |
|-----------------------|--|---|
| Cable break monitor   | yes                                      |   |
| Hardware input filter | typically 1 kHz, low pass 3rd order      |   |
| Input filter software | configurable resp. to deactivate         |   |
| Measurement precision | $\pm 0.3$ % of maximum measurement value | $\pm 0.35$ % of maximum measurement value |

## Reference Output Specifications

|  |  |  |
|--|--|--|
| Number of channels                     | 1  |  |
| Reference voltage                      | +10 V  |  |
| Allowed output current                 | maximum 15 mA (< HW-Version 1.5, $T_{a_{MAX}} = 60$ °C)<br>maximum 25 mA ( $\geq$ HW-Version 1.5, $T_{a_{MAX}} = 55$ °C)   |  |
| Allowable load per potentiometer input | $\leq 2.50$ mA (< HW-Version 1.5, $T_{a_{MAX}} = 60$ °C)<br>$\leq 4.17$ mA ( $\geq$ HW-Version 1.5, $T_{a_{MAX}} = 55$ °C)<br>$\geq 4.0$ k $\Omega$ (< HW-Version 1.5, $T_{a_{MAX}} = 60$ °C)<br>$\geq 2.4$ k $\Omega$ ( $\geq$ HW-Version 1.5, $T_{a_{MAX}} = 55$ °C) |  |
| Allowed capacitive load                | maximum 100 nF   |  |
| Short-circuit protection               | yes  |  |
| Precision                              | $\pm 0.5$ %  |  |

## Temperature Input Specification

|                             |  |                            |
|-----------------------------|--|----------------------------|
| Number of channels          | 1  |                            |
| Measurement range           | 500.6 ... 3904.8 $\Omega$  | 1035.9 ... 4575.3 $\Omega$ |
|                             | PT1000   | KTY10                      |
|                             | -125 ... +850 °C   | -50 ... +150 °C            |
| Resolution                  | 0,1 °C   |                            |
| Conversion time per channel | standard mode: 250 $\mu$ s<br>variable sample points: S-DIAS cycle time (min. 250 $\mu$ s) |                            |
| Input resistance            | 33 k $\Omega$  |                            |
| Short circuit monitor       | yes  |                            |
| Cable break monitor         | yes  |                            |
| Hardware input filter       | typically 1 kHz  | low pass 3rd order         |
| Input filter software       | 10 Hz  |                            |
| Measurement precision       | $\pm 0.5$ % of maximum measurement value   |                            |

### Electrical Requirements

|  |   |  |
|--|---|--|
| Power supply from S-DIAS bus                               | +5 V  |  |
| Current consumption on the S-DIAS bus (+5 V power supply)  | typically 50 mA   | maximum 55 mA  |
| Power supply from S-DIAS bus                               | +24 V   |  |
| Current consumption on the S-DIAS bus (+24 V power supply) | typically 40 mA<br>(without load on reference output)       | typically 50 mA<br>(without load on reference output)      |
|  | typically 68 mA<br>(reference output loaded with 6x 4 kΩ)   | maximum 80 mA<br>(reference output loaded with 6x 4 kΩ)    |
|  | typically 85 mA<br>(reference output loaded with 6x 2k4 kΩ) | maximum 100 mA<br>(reference output loaded with 6x 2k4 kΩ) |

### Article Number and Miscellaneous

|                |                                  |  |
|----------------|----------------------------------|--|
| Article number | 20-009-075                       |  |
| Dimensions     | 12.5 x 104.2 x 72 mm (W x H x D) |  |
| Standard       | UL 508 (E247993)                 |  |
| Approvals      | UL, cUL, CE                      |  |

### Environmental Conditions

|                           |   |   |
|---------------------------|---|---|
| Storage temperature       | -20 ... +85 °C                                    |   |
| Environmental temperature | 0 ... +60 °C                                      |   |
| Humidity                  | 0-95 %, non-condensing                            |   |
| Operating conditions      | pollution degree 2<br>altitude up to 2000 m       |   |
| EMC resistance            | in accordance with EN 61000-6-2 (industrial area) |   |
| EMC noise generation      | in accordance with EN 61000-6-4 (industrial area) |   |
| Vibration resistance      | EN 60068-2-6                                      | 3.5 mm from 5-8.4 Hz<br>1 g from 8.4-150 Hz |
| Shock resistance          | EN 60068-2-27                                     | 15 g  |
| Protection type           | EN 60529  | IP20  |

## Notes

