

## Digital Display Unit HDA 5500

### Description:

The digital display units in the HDA 5500 series are microprocessor-controlled display and monitoring instruments designed for control panel installation.

Different versions are available with a maximum of 3 analogue inputs, an analogue output (4 .. 20 mA or 0 .. 10V) and up to 4 relay outputs.

The analogue input signals are displayed according to the settings selected by the user.

Each of the relay outputs can be allocated to each of the sensor inputs or to the differential between input 1 and 2.

A PT 100 temperature probe can be connected directly to the instrument. There is also an option for frequency measurement using the HDS 1000 (HYDAC rpm probe), for example to measure the speed of rotating components.

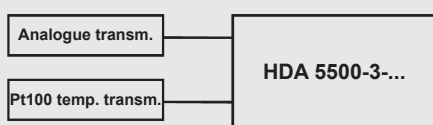
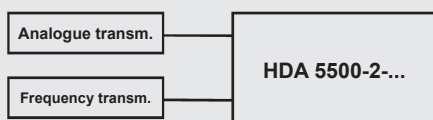
Depending on the model, it is also possible to connect SMART sensors (condition monitoring sensors). SMART sensors are a generation of sensors from HYDAC which can transmit several different measured values.



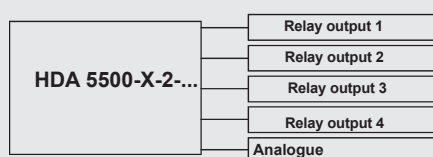
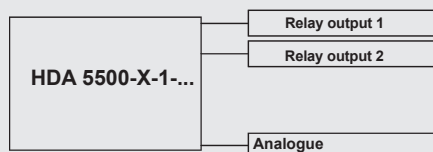
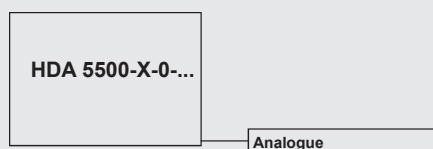
### Special features:

- Digital display of analogue signals
- Clear 4-digit 7-segment LED display
- Up to 3 analogue inputs (4 .. 20 mA, 0 .. 10 V or 0 .. 5 V)
- Accuracy  $\leq \pm 0.5\%$
- Differential measurement possible
- Analogue output (4 .. 20 mA or 0 .. 10 V)
- Up to 4 relay switching outputs
- RS 232 interface
- Voltage supply 12 .. 32 V DC or 85 .. 265 V AC 50 / 60 Hz
- Option for PT100 sensor input or frequency input

## Input models:



## Output models:



## Connection terminals:

Supply voltage:  
plug-in terminal block 2 pole, RM 5.08  
(cross section max. 2.5 mm<sup>2</sup>)

Inputs / outputs:  
plug-in terminal block 11 pole, RM 3.5  
(cross section max. 1.5 mm<sup>2</sup>)

Relay:  
plug-in terminal block 5 pole, RM 5.08  
(cross section max. 2.5 mm<sup>2</sup>)

## Technical data:

|                                                                   |                                                                                                                                                                         |
|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Display range</b>                                              |                                                                                                                                                                         |
| Display                                                           | 4-digit 7-segment LED display, red,<br>height of digits 14.2 mm<br>3 LEDs for active sensor, 4 LEDs for switch points                                                   |
| Display range                                                     | - 999 .. 9999 (user-adjustable)                                                                                                                                         |
| Display units with<br>background lighting                         | bar, kg/cm <sup>2</sup> , MPa, psi, °C, °F, mA, V, Hz, kN,<br>m, mm, inch, l, l/min, gal, gal/min, 1/min, %, t                                                          |
| <b>Input data</b>                                                 |                                                                                                                                                                         |
| <b>Analogue signal input(s)</b>                                   |                                                                                                                                                                         |
| Measuring range(s)<br>(up to 3 analogue inputs)                   | select: 4 .. 20 mA, 0 .. 5 V, 0 .. 10 V or<br>4 .. 20 mA sequential (Modification 006)                                                                                  |
| Accuracy                                                          | ≤ ± 0.5 % at 25 °C                                                                                                                                                      |
| <b>PT 100 input</b>                                               |                                                                                                                                                                         |
| Measuring range                                                   | - 25 .. 100 °C                                                                                                                                                          |
| Accuracy                                                          | ≤ ± 0.5 % at 25 °C                                                                                                                                                      |
| <b>Frequency/counter input</b>                                    |                                                                                                                                                                         |
| Signal threshold                                                  | 0 .. 0.6 V = LOW, 3 .. 24 V = HIGH                                                                                                                                      |
| Frequency range                                                   | 15 Hz to 24 kHz                                                                                                                                                         |
| <b>Output data</b>                                                |                                                                                                                                                                         |
| Analogue output                                                   | 4 .. 20 mA, load resistance ≤ 400 Ω or<br>0 .. 10 V load resistance ≥ 2 kΩ                                                                                              |
| Accuracy                                                          | ≤ ± 0.5 % at 25 °C                                                                                                                                                      |
| Rise time                                                         | 70 ms                                                                                                                                                                   |
| <b>Switching outputs</b>                                          |                                                                                                                                                                         |
| Type                                                              | 2 or 4 relays each with separate common supply                                                                                                                          |
| Switching voltage                                                 | 0.1 .. 250 V AC                                                                                                                                                         |
| Switching current                                                 | 9 mA .. 2 A                                                                                                                                                             |
| Switching capacity                                                | 400 VA, 50 W<br>(for inductive load, use varistors)                                                                                                                     |
| Life expectancy of switch contacts                                | ≥ 20 million cycles at minimum load<br>≥ 1 million cycles at maximum load                                                                                               |
| Reaction time<br>(with switching delay = 0 ms)                    | approx. 20 ms                                                                                                                                                           |
| Setting range of switch points                                    | 1.5 .. 100 % of the pre-set display range                                                                                                                               |
| Setting range of the switching<br>hystereses (switch-back points) | 0.5 .. 99 % of the pre-set display range                                                                                                                                |
| <b>Interface</b>                                                  |                                                                                                                                                                         |
| Serial interface<br>RS 232                                        | Baud rate 19200 Bauds; 8 data bits;<br>2 stop bits; no parity;<br>no handshake                                                                                          |
| <b>Environmental conditions</b>                                   |                                                                                                                                                                         |
| Nominal temperature range                                         | 0 .. +50 °C                                                                                                                                                             |
| Operating temperature range                                       | 0 .. +50 °C                                                                                                                                                             |
| Storage temperature range                                         | - 40 .. +80 °C                                                                                                                                                          |
| CE mark                                                           | EN 61000-6-1 / 2 / 3 / 4                                                                                                                                                |
| <b>Other data</b>                                                 |                                                                                                                                                                         |
| Housing                                                           | control panel housing 96 x 48 x 109 mm;<br>control panel cut-out 92 (+0.8) x 45 (+0.6) mm;<br>front panel thickness 1.25 .. 15 mm;<br>maximum installation depth 121 mm |
| Supply voltage                                                    | 12 .. 32 V DC or<br>85 .. 265 V AC, 50 / 60 Hz                                                                                                                          |
| Power consumption                                                 | 15 VA at 85 .. 230 V AC – fuse protection 1 AT                                                                                                                          |
| Supply of the meas. transmitter                                   | 12 V DC ± 1 %; max. 20 mA / analogue input                                                                                                                              |
| Residual ripple of supply<br>voltage                              | ≤ 5 %                                                                                                                                                                   |
| Weight                                                            | approx. 320 g                                                                                                                                                           |

Note: Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection are provided.

## Model code:

HDA 5 5 0 0 - X - X - XX - 00X

### Inputs

- 0 = One analogue input
- 1 = Three analogue inputs
- 2 = One analogue input + frequency input / counter function
- 3 = One analogue input + PT 100 input

### Outputs

- 0 = 1 analogue output
- 1 = 1 analogue output + 2 relay outputs
- 2 = 1 analogue output + 4 relay outputs

### Supply voltage

- AC = 85 .. 265 V AC
- DC = 12 .. 32 V DC

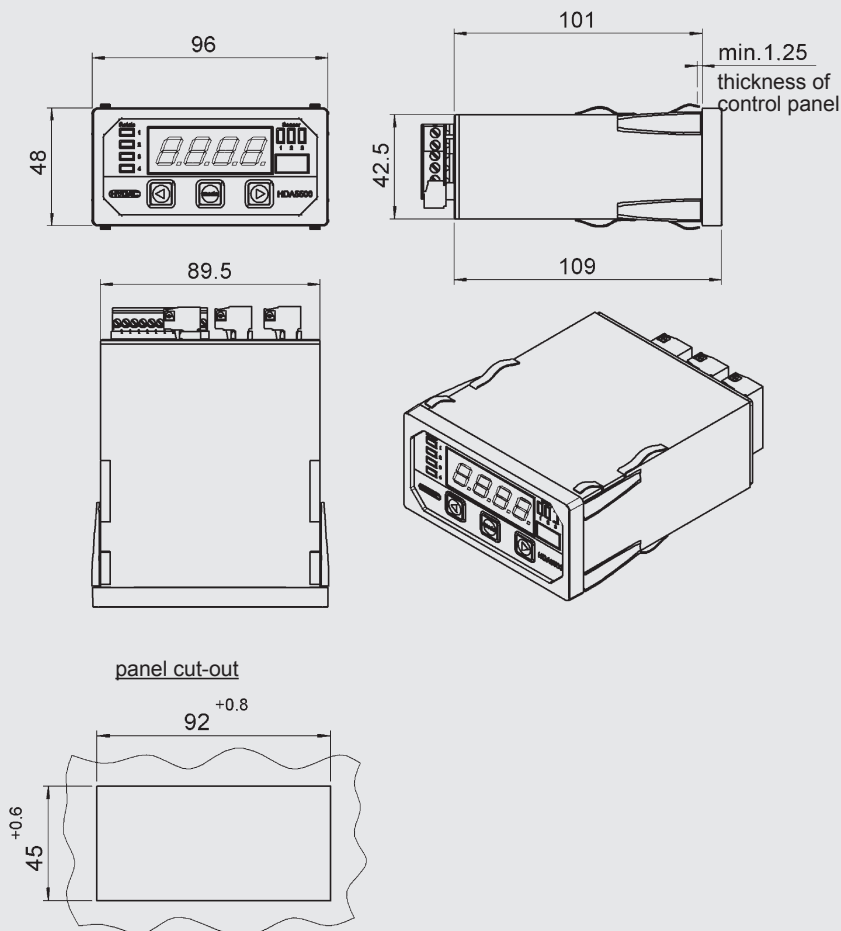
### Modification

- 000 = Standard
- 006 = Model with sequential analogue input for HLB 1300 and CS 1000 (only possible on input model "0" and output model "2")

## Notes:

The information in this brochure relates to the operating conditions and applications described. For applications and operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

## Dimensions:



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