# INTRA AUTOMATION GmbH

**IA**

**elektronische Meß-
und Regelinstrumente**

M E S S -   U N D   R E G E L I N S T R U M E N T E

CE

TÜV CERT
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Otto-Hahn-Straße 20 – 50515 Grevenbroich – Telephone (02181) 68761 – Telefax (02181 64492 – eMail INTRA-Automation@T-Online.de

## Microprocessor Controlled Flow Indicator–Integrator                    DigiFlow 505

## Functions

- Full scaleable input signals 4 – 20mA analog or frequency
- 2 Inputs either two independent measurings, Dual range, median of two sensors or 2 different channels.
- Integration and indicaton of totals when time dependend signals.
- Simplified Programming.
- User Menus in Three Languages.
- Control of a Sensor-purge-unit.
- Data Logging Output.

The backlit two rows alphanumeric display shows the instantaneous readings of Flow or Totals, and the four key touchpad it is used to program and configure the unit.

The **DigiFlow 505** has per default one analog input 4 – 20mA each channel, as well as a frequency input.

A scaleable Pulse Output to drive external counters, 2 Relay Outputs for limit alarm, selectable Low or High and an RS232 interface are also standard features of the **DigiFlow 505**.

Optionally there are up to two scaleable Analog Outputs 4 – 20mA available.

Furthermore an optionally equipment to control a sensor purge unit can be ordered.

The RS232/RS485 Interface will output all parameters which are displayed. This can be done to a printer or a host computer.

An integrated real time clock is included to send protocols in selectable intervals, up to 9999min. Totals may be reset.

The Totals can be reset by pressing the related key on the keyboard or by a voltage input at the related rear-terminal jack.

The **DigiFlow 505** is powered by AC of 115/230 VAC 50/60 Hz. Optionally voltages between 24 and 28 V AC/DC.

The **DigiFlow 505** provides an adjustable voltage of 18V DC for powering sensors. Maximum current is 100mA.

## Inputs

Since the **DigiFlow 514** scaleable integrates any physical unit which is converted into 4-20mA analog or frequency



Picture similar to DigiFlow 505
signal, the user have to enter a dimension text with up to 5 characters length.

The input signals aren't converted only linearly. Also nonlinear relationships of input-to output quantity can be programmed. Additional to the predefined exponents of the conversion curve for linear, square or square root relationship of $y = A^E$, a free setable exponent can be entered. If none of these conversion terms describes exactly the relationship between input and output, a 12 point correction curve can be programmed

The most common use of the **DigiFlow 505** is as flow indicator . Mos types of flowmeters can be used

Including:

1. *Linear frequency producing* flowmeters like (**VORTEX**), turbines or positive displacement.
2. *Non–linear frequency producing* flowmeters.
   A 12 point correction curve can be programmed to linearize the signal.
3. *Volumetric* flowmeters with outputs of 4 – 20mA such as (**VORTEX**) or turbine meters with a frequency to current converter on the output.
4. *Differential Pressure devices* for **ITABAR–**sensors or orifice plates, where a square law relationship applies.
5. *Linear Differential Pressure devices* where the 4 – 20mA output is proportional to the flow rate.
6. *Dual Range Differential Pressure devices* where two separately spanned transmitters are used across a common flow device (**ITABAR**–sensor).
7. *Non–linear Differential Pressure devices* like laminar flow tubes.
8. Signal of two transmitters at one test point can be weighted added into one flow signal.

**General:**

| | |
|---|---|
| Display: | Backlighted, alphanumeric LC–Display, 16 cols. Each char is 0.413" high. |
| Keyboard: | Sealed membrane keyboard with four keys. |
| Transmitter supply: | 18 V / 100 mA; via keyboard adjustable, isolated. |
| Power: | 115/230 V AC; 50/60 Hz internally switchable. Optionally 24-28 V AC/DC Power consumption 10 W @ 230 V AC without Options. |
| Operating Temperature: | 32 – 131 °F |
| Housing: | Enclosure: glass–fiber reinforced synthetic material; Front: aluminum keyboard membrane. |
| Face: | Watertight to IP 54 (NEMA 4X equal) |
| Dimensions: | 5.7" W × 2.8" H × 5.1" D |
| Panel cutout: | 5.4" W × 2.6" H |

**Programming and Configuration:**

| | |
|---|---|
| Handheld: | There is no handheld terminal required. All necessary constants and parameters are programmed using the keypad. |
| Language: | German, English or French selectable. |

**Frequency Input:**

| | |
|---|---|
| Frequency Range: | 0.25 - 10 kHz Input 1. 0.25 - 500 Hz Input 2. |
| Input Circuits: | Most AC, logic and proximity switches accepted. $0.5 – 50 V_{pp}$. |
| Non–Linear Correction: | Up to 12 points for curve fit. |

**Analog Input 4 – 20 mA:**

| | |
|---|---|
| Inputs: | 2 for flow (split range). |
| Input Impedance: | 120 Ω. |
| Circuit: | All inputs are isolated, no common ground. |

**Pulse Output:**

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|---|---|
| Pulse Width: | Adjustable between 10 ms and 90 ms. |
| Duty Cycle: | ≥ 1 : 1. |
| Logic: | Open Collector, Active Low. |
| Current sinking: | max. 100 mA. |
| Pulse generation: | The pulse count is proportional to the counter difference in selectable units of 10 (1, 10, 100, ....100000). |

**External Keyboard:**

| | |
|---|---|
| Function: | One input controls the display and one input resets the total-counters. |
| Circuit: | An input voltage higher than +18 V is detected. |

**Communication Port:**

| | |
|---|---|
| Type: | An RS232 interface is provided. Optionally there is a RS485 multipoint communication interface for up to 32 instruments connected to a common bus. |
| Baud Rate: | 300 – 9600 Baud. |
| Data Bits: | 7 or 8 selectable. |
| Parity: | None, even or odd. |
| Stop Bits: | 1 or 2 selectable. |
| Data logging: | Output in intervals up to 9999 min or by key stroke. |

**Relay Output:**

| | |
|---|---|
| Function: | High– and Low–flow rate alarms based on the flow rate. |
| Form: | Normally open. (SPST) |
| Max. Voltage | 250 V AC |
| Max. Current | 6 A AC |

**Options:**

**Analog Outputs:**

| | |
|---|---|
| Function: | Selectable: Output current proportional to standard display. Setpoints at 4 mA and 20 mA, linear interpolation between. |
| Output Span: | 0 – 20 mA or 4 –20 mA selectable. |
| Resolution: | 12 Bit |
| Max. Load: | 500 Ω internally powered. 800 Ω externally 24 V powered. |
| Powering: | If there is no external supply >15V the output will be internal powered automatically. |

**Control of a Sensor–Purge–Unit:**

| | |
|---|---|
| Function: | Two relays control the solenoid activated valves of a Sensor Purge Unit. During the purging time and an additional selectable time after purging, the flow input is maintened. |
| Time between purging: | 10 minutes to 31 days 23 hours 50 minutes. |
| Purge Duration: | 1 to 999 s |
| Time Constant: | 1 to 99 s |

## Ordering-Information

| Code | Option or Feature | | | | | |
|---|---|---|---|---|---|---|
| 505 | **Flow Computer Type: DigiFlow 505** | | | | | |
| | Code | **Housing** | | | | |
| | S | Panel mounting IP54 (Standard) | | | | |
| | T | Panel mounting with lockable transparent door IP55 | | | | |
| | | Code | **Power Supply** | | | |
| | | 2 | 230 V AC Line (Standard) | | | |
| | | 1 | 115 V AC Line | | | |
| | | 4 | 24 V AC/DC | | | |
| | | | Code | **Analogue Output** | | |
| | | | X | No Analog Output | | |
| | | | 1 | One Analog Output | | |
| | | | | Code | **Communication Ports** | |
| | | | | 2 | RS232-Serial Interface (Standard) | |
| | | | | 4 | RS485-Multipoint Serial Interface | |
| | | | | | Code | **Relay Output** |
| | | | | | S | High- and Low-Flow Alarm |
| | | | | | L | H/L-Flow-Alarm and Control for Sensor-Purge-Unit |
| ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | |
| | | | | | | |