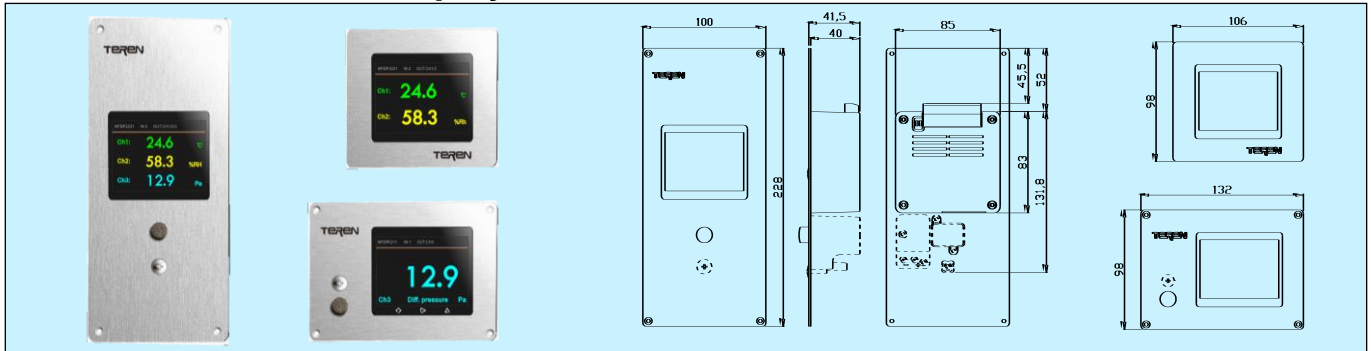


# MFDU Multi-function Display Unit/Transmitter



## Applications & Features

- Designed for flush mount, measure and display environment temperature, humidity and diff. pressure
- 316L front panel, PMMA window, flat surface, no dust stay, good for all detergents, sanitizers and bactericides
- Parallel or alternatively display input channels 1 to 3
- Large high light 3.2" color TFT LCD display
- Multiple inputs and outputs for different applications
- High accuracy sensor, 100% field changeable
- Optional 3 analog 4~20mA/0~10V inputs signals
- Optional 3 analog 0~10V outputs signals
- Optional RS485/Modbus RTU and key functions
- Compatible to any DDC/PLC/SCADA or other data collect and control systems
- Very high performance/price ratio: replace the single channel(T/RH/DP) display instruments, provide value added multi-function combination including local measurement, displaying and networking

## Specifications

### Display

**Display:** high light 3.2" color TFT LCD, resolution 320×240

**Display panel material:** PMMA

**Resolution:** ±0.1 engineering unit

**Channels:** 1~3 channels, parallel (simultaneously) or single row (alternate) display

**Engineering unit:** 3 preset units, °C/°F, %RH and Pa

**Update time:** <1s

### Housing

**Front panel material:** 316L stainless steel, 1.5mm thick

**Back housing parts:** fire-proof ABS+PC UL94 V-0 class

**Protection:** front panel IP65 (built-in temp. & humidity sensor cap IP54)

**Weight:** MINI: about 380g; Horizontal: about 450g; Vertical: about 650g

### Technical Specifications

**Power Supply:** 16~28VAC/16~35VDC

**Consumption:** 0.5VA

**Built-in sensor:**

|                 | Temperature               | Humidity                     | Diff. pressure                         |
|-----------------|---------------------------|------------------------------|--|
| Range           | 0~50°C                    | 0~100%RH                     | 0~60Pa                                 |
| Accuracy        | 0.4°C or 0.3°C (@15~40°C) | 3% or 2%RH (@25°C, 20~80%RH) | 1% or 0.5%FS                           |
| Nonlinear       | /                         | <0.1%RH                      | /                                      |
| Repeatability   | ±0.1°C                    | ±0.1%RH                      | /                                      |
| Hysteresis      | /                         | ±1.0%RH                      | /                                      |
| Long term drift | <0.02°C/Year              | <0.25%RH/Year                | <0.5%FS/Year                           |
| Response time   | <90s (in slow air)        | <40s (25°C, in slow air)     | 0.5~30s                                |
| Temp drift      | /                         | /                            | <0.05%FS/°C(zero)<br><0.08%FS/°C(span) |
| Temp. comp.     | /                         | /                            | 0~50°C                                 |
| Medium Temp.    | /                         | /                            | 0~60°C                                 |
| Work Temp.      | /                         | /                            | 10xFS(over load)<br>15xFS(burst)       |

**Analog inputs:** max. 3×(4~20mA/0~10V); over voltage and reverse polarity protection; accuracy< 0.1%FS;  $R_L < 250\Omega$ (4~20mA) or  $> 100K\Omega$ (0~10V); range: default 0~50°C /0~100%RH/0~60Pa, available range -50~100°C /0~100%RH /-100~100Pa

**Analog outputs:** max. 3×(0~10V); over voltage and reverse polarity protection; accuracy as low as 0.2%FS;  $R_L > 2K\Omega$ ; range: same as analog inputs

**Keys:** set/reset alarm, DP re-zero, calibration, set display mode, etc.

**Communication:** 1 USB for parameter checking and setting, 1 RS485/Modbus RTU, R/W enable, 9600 baud rate

**Terminals:** max  $\varnothing 1.5mm^2$

**Work Environment:** 0~50°C, 0~95%RH (no cond.)

**Storage Environment:** -10~70°C

**Process connection:** Built-in T/RH sensor: a waterproof, air breathable filter and sensing cap on front panel. Built-in diff. pressure sensor: 2 conical nozzles,  $\varnothing 5$  mm tube connection on back, or 1 pressure sampling screw on front panel.

**Approval:** CE

## Models

| Model              | MFDU |  |  |  |   |  | Multi-function Display Unit              |
|--------------------|------|--|--|--|---|--|--|
| Temp. Hum. Input   | 0    |  |  |  |   |  | N/A                                      |
|                    | 1    |  |  |  |   |  | Analog signals (2 channels)              |
|                    | 2    |  |  |  |   |  | Built-in T/Rh sensor, accuracy 0.4C/3%   |
|                    | 3    |  |  |  |   |  | Built-in T/Rh sensor, accuracy 0.3C/2%   |
|                    | 8    |  |  |  |   |  | RS485-Modbus RTU                         |
| Diff. Press. Input | 0    |  |  |  |   |  | N/A                                      |
|                    | 1    |  |  |  |   |  | Analog signal(1 channel)                 |
|                    | 2    |  |  |  |   |  | Built-in DP sensor, accuracy 1%          |
|                    | 3    |  |  |  |   |  | Built-in DP sensor, accuracy 0.5%        |
|                    | 8    |  |  |  |   |  | RS485-Modbus RTU                         |
| Output             | 0    |  |  |  |   |  | N/A                                      |
|                    | 1    |  |  |  |   |  | 0~10V×1 (diff. pressure)                 |
|                    | 2    |  |  |  |   |  | 0~10V×2 (T/Rh)                           |
|                    | 3    |  |  |  |   |  | 0~10V×3 (T/Rh+DP)                        |
|                    | 8    |  |  |  |   |  | RS485-Modbus RTU                         |
| Keys               | 0    |  |  |  |   |  | N/A                                      |
|                    | 1    |  |  |  |   |  | 3 keys                                   |
| Panel Port         | 0    |  |  |  |   |  | N/A                                      |
|                    | 1    |  |  |  |   |  | 1 pressure sampling screw on front panel |
| Panel Types        |      |  |  |  | M |  | MINI type                                |
|                    |      |  |  |  | H |  | Horizontal type                          |
|                    |      |  |  |  | V |  | Vertical type                            |
| Screw Hole         | 0    |  |  |  |   |  | N/A                                      |
|                    | 1    |  |  |  |   |  | 4 holes at corners, with SS screws       |

1. When selecting RS485, only the selected channel has the corresponding function, and the other channels do not have.
2. When the built-in temperature / humidity sensor is selected, the front panel has a corresponding sampling cap.
3. The total number of output channels should NOT be more than input.
4. MINI model does not have any built-in sensors, and can not have diff. pressure port on front panel.