

APM Advanced Panel Meters

Digital process meters for analogue sensors.

The APM Series Digital Readouts provide accurate and economical measurement. These devices can be implemented on hydraulic test stands, machinery and other control systems.

These panel meters are supplied fully pre-calibrated and pre-configured, however the configuration can be changed at any time via the USB port. The easy-to-read display provides a wide viewing angle, 40 segment bar graph, large 4-digit display, separate Starburst display area for annunciators (custom messages and alarm information) and dynamic back light colour.

The digital readouts together with our range of digital flowmeters, temperature and pressure transducers, provide the instrumentation needed to analyse the performance of pumps, motors, valves and hydrostatic transmissions.



Hydraulic measurement and control



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Features

- Combined digital and bar graph display.
- USB port for custom user settings
- Warning flash backlight.
- 0.1% accuracy for voltage inputs and 0.01% accuracy for current inputs
- Less than 53mm deep.
- Visibility:
 - User-adjustable backlight brightness and colour (red, green, white).
 - Wide viewing angle (horizontal and vertical).
 - Custom annunciators.
- Programmable:
 - Display Range (Both Min & Max values)
 - Two independent alarm set-points.
 - Two independent outputs or 4-20mA analogue monitor outputs.



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(Issue 2)

Specifications

Code	Input Type	Analogue Outputs ¹	Reset Input for peak value ²
APM-MA	4-20mA	2 x 4-20mA	Yes
APM-5V	0-5V	2 X 4-20mA	Yes

¹ Analogue and digital outputs share the same terminals.

² Preconfigured to reset the peak value after 14 seconds

Functional Specifications

Input	Voltage	Current
Range (DC):	0 to +/-10 Vdc	0 – 50 mA
Impedance:	100 kΩ	15Ω
Accuracy:	0.1% of input or 5mV whichever is greater	0.01% of input or 5μA whichever is greater

Environmental:

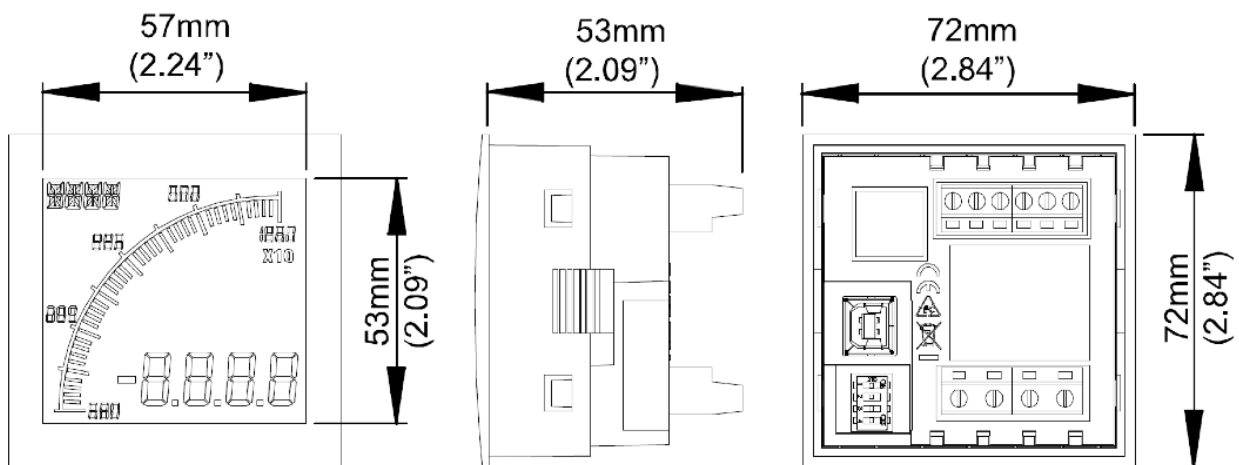
Operating Temperature:	-10 to +60 °C
Storage Temperature:	-40 to 70 °C
IP rating (from the front):	IP65
Power Supply:	
Nominal Input (ac or dc):	12 – 24 Vac/Vdc*
Max power consumption:	1.6 W
Display:	
Number of Digits:	4
Digit height:	12 mm [0.47"]
Number of message characters:	4
Backlight Colours:	Red, Green, White (Preconfigured to Green. Changes to Red when reading is HI).
Decimal Places:	User configurable (3 max)
Digit update frequency:	0.08 – 1.8 s (Preconfigured to 0.94s)
Outputs:	
Max Voltage:	24V
Max Current:	50mA
Analogue Output:	4-20mA
Weight:	150 g (0.4 pounds)
Connection Type:	
Signals+ and Power:	Screw Terminal – rear of unit
Configuration port:	USB B – rear of unit

* Power supply to the unit must be fused at 0.5A / 250V Type F with a breaking capacity of 35A or greater.

+ Signal cables connected to this device must not exceed 30 metres long.

Installation Details

The APM digital readouts are designed to be panel mounted.



Panel cutout: 68mm x 68mm +0.7 -0mm [2.68" x 2.68" +0.02" -0"] as per DIN43700/IEC61554

Max panel thickness: 10mm

Accessories:

For cable (M12x1 5-pin) to leads:

- 5 meters: FT10228-05
- 10 meters: FT10228-10
- 30 meters: FT10228-30

For Pressure Transducers see MPT bulletin

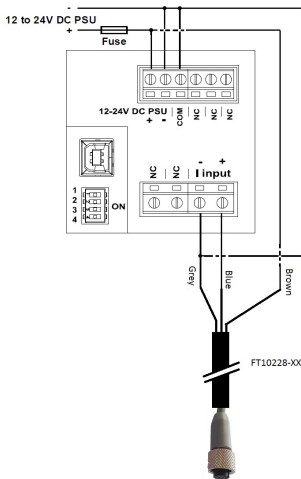
For Temperature Transducers see TP bulletin

For flow meter see CT, CTR, GF or FlowHub bulletin

Connection Schemes:

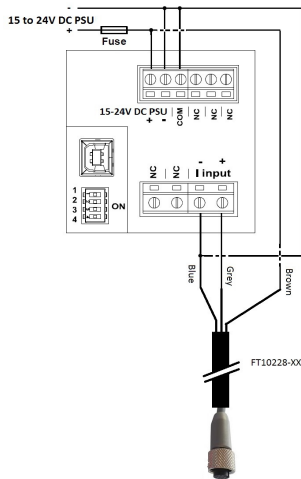
Cut and insulate the unused wires.

**4-20mA 3-wire
(CT-mA & CTR-mA)**



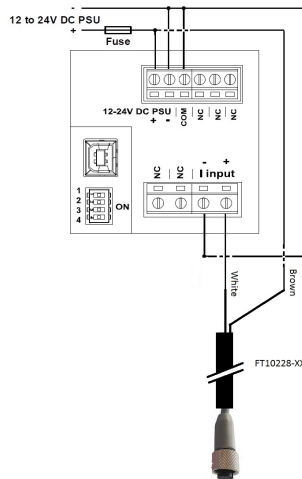
Flow

**4-20 mA 3-wire
(FlowHub-mA)**



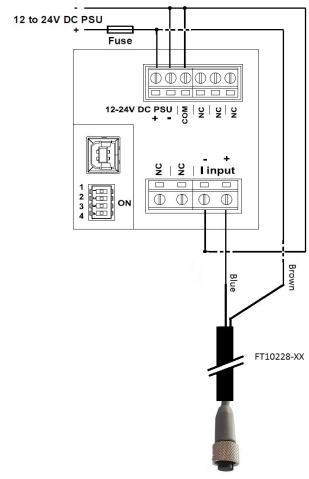
Flow

**4-20mA 2-wire
(TP125-mA)**



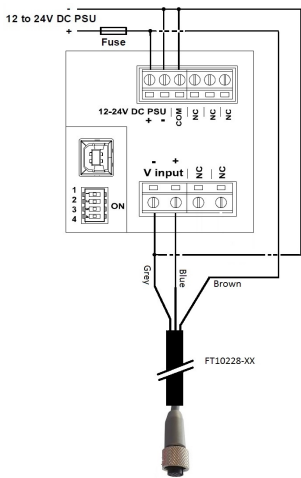
Flow

**4-20mA 2-wire
(MPT-mA)**



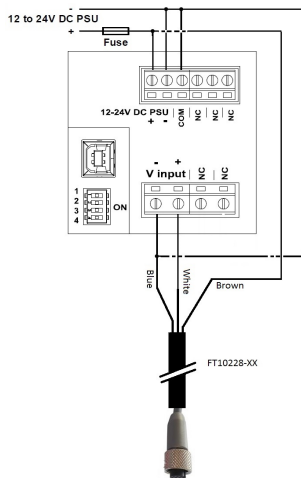
Pressure

**0-5V
(CT-5V & CTR-5V)**



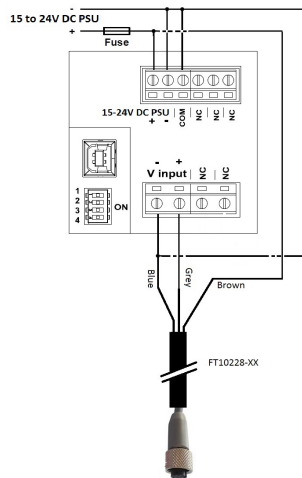
Flow

**0-5V
(TP125-5V & MPT-5V)**



Temperature Pressure

**0-5V
(FlowHub-5V)**

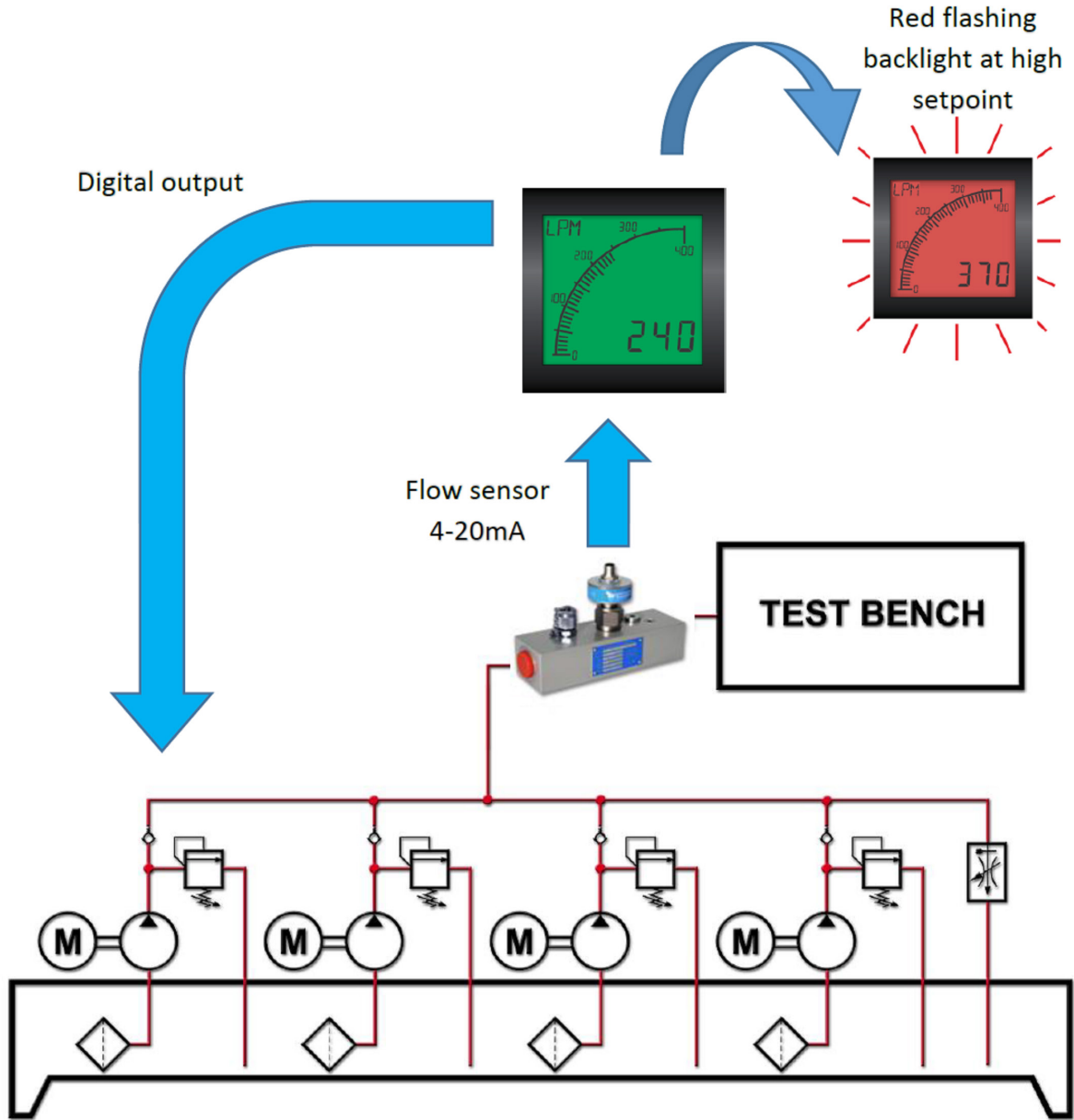


Flow

Flow Rate Application Example

The APM digital readout is used to display the flow rate of oil flowing to the test bench. The 4-20mA analogue output from the CT400-MA is scaled to litres per minute, and the custom annunciator set to "LPM".

High setpoint is configured so that the normal green display will flash red when the flow rate is over 370LPM, thereby alerting the operator. Additionally the APM digital outputs are integrated into the pump system so the pumps are stopped if the setpoint is exceeded.



APM Advance Panel Meter – Configuration Sheet

Sensor Range:

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Display Units:

Choose one option or select 'Other' and specify units

LPM (Litres Per Minute)	
GPM (US Gallons Per Minute)	
BAR (Bar)	
PSI (Pound per Square Inch)	
°C (Degrees Celsius)	
°F (Degrees Fahrenheit)	
K (Kelvin)	
Other:	

Backlight Colour:

Choose one option

Red	
Green*	
White	

Backlight Colour when reading is HI:

Choose one option

Red*	
Green	
White	

Flashing:

Choose one option

Yes	
No*	

Clear Peak bar after:

Choose one option (Times are approximate)

0 sec	
2 sec	
6 sec	
14 sec*	
30 sec	
1 min	
2.1 min	
4.2 min	
8.5 min	
Never	

*Default option

The selected configuration and additional settings can be changed at any time via the USB port (USB cable not supplied) and the APM Configurator software (available to download free of charge from <http://truapm.com/download-software/>)