

Instrumentation

T108 low cost programmeable LED display

T108 is a low cost, programmable process indicator designed for wide range of display applications with/without relay alarm. T108 can be mounted in a panel cutout and it is equipped with a bright 4-digit LED display. This model is especially suitable for measuring and controlling various technological values from -1999 to 9999 with resolution of up to 6,000 points. The device can have up to two programmable relays providing on/off control/alarm, with or without pulse mode.



T108 accepts various linear input voltage or current signals. The display limits, decimal point position, measuring offset value as well as many other parameters are fully programmable. Thanks to its excellent price-to-performance ratio, the T108 is a widely applicable device.

- Low cost
- 3 front sizes – up to 1/32 DIN
- 4-digit 14mm bright LED indication
- Universal linear input
- Up to 2 alarm relays available with pulsed output
- Fully programmable parameters

Technical Information

Input	
Voltage linear	0 to 10 V or 0 to 5 V (1)
Current linear	0 to 20 mA or 4 to 20 mA
Other linear (on request)	max. 40 V, max. 100 mA
Display limits	-1999 to 9999, programmable
Decimal point position	programmable
Power supply	
Mains supply voltage	230 VAC ('H' and 'L')
SMPS supply voltage	90...250 VAC/DC ('H')
Low-voltage power supply	12...24 VAC/DC, 12DC, 9AC
Consumption	max. 1.5 VA
Accuracy	
Measurement error	0.3 % from span
Temperature drift	0.02 % from span for 1 °C
Indication and keyboard	
Digital display	4 LED indicators, red
LED	for relay status
Keyboard	2 membrane keys
Keyboard locking	programmable

Output	(up to 2 relay outputs)		
Relay electromechanical	5A/250V, N.O/N.C or N.O contacts(2)		
MOS gate	0.1A/60V, optically isolated		
Solid state relay	1A/250VAC(1)		
Output for external SSR	12(24)V/50mA		
Control algorithm	ON/OFF, pulse mode		
Alarm parameters	programmable		
Design and materials	'H'	'L'	'M'
Dimensions (mm)	96x48	76x34	48x24
Mounting depth	100	55	43
Panel cutout [mm]	90x42	70x28	46x22
Maximum weight [g]	250	150	30
Protection, front/terminals	IP65/20	IP65/20	IP54/20
Case material	plastic		
Wiring	screw terminals		
Operating conditions			
Operating temperature	-10 to 65 °C		
Operating humidity	0 to 85 %RH		

Options & Ordering Information

Feature or option	Order Code T108-X.X.X.X
Case (front size)	H - 96x48 mm, L - 72x36 mm, M - 48x24 mm
Power supply	A - 230 VAC(3), C - 90...250 V(4), D - 12 VDC, P - 12...24 VAC/DC
Relay output	X - none, C - relay N.O/N.C(5), D - SSR, J - for external SSR, M - isolated MOS gate
Increased front protection	X - none, P - IP65 front protection (6)

Ordering Example T108-H.C.C.X

(1) 0.2A/250VAC for cases 'L' and 'M' (2) Only one relay 3A/250VAC w/ N.O contact for case 'M' (3) Not available for case 'M' (4) Not available for cases 'L' and 'M' (5) N.O for case 'M' (6) Not available for case 'M' (7) Available separately - consult Flowtechnik

Instrumentation

CUB5 low cost dual input LCD rate & total display

The CUB5 provides the user the ultimate in flexibility, from its complete user programming to the optional setpoint control and communication capability. The meter can be programmed as a single or dual counter with rate indication capability. The display can be toggled either manually or automatically between rate & total.

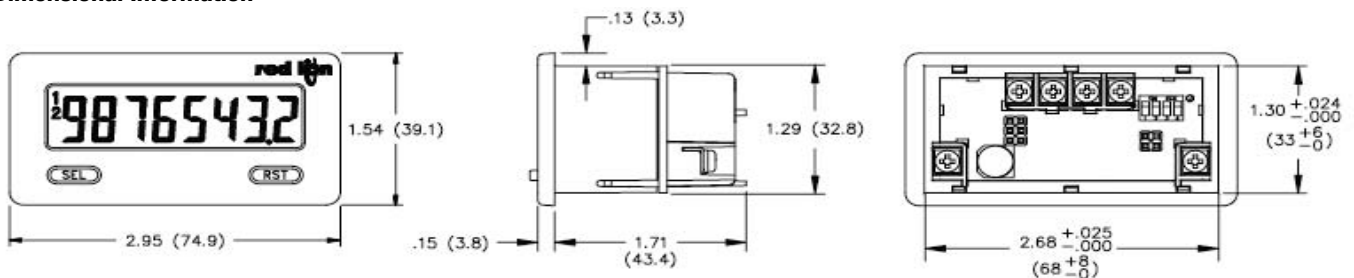
The LCD is available in two versions, reflective (CUB5R000) and backlight (CUB5B000). The backlight version is user selectable for green or red backlighting with variable display intensity. The counter is programmable for one of eight different count modes, including bi-directional and quadrature. When programmed as a dual counter, each counter has a separate scale factor and decimal points.



- Flow rate & total display
- LCD or selectable red or green backlit versions
- 0.46" (11.7 mm) high digits
- Optional relays, alarms, Analogue & comms. outputs
- Operates from 9 to 28 vdc power source
- Programmable scaling for count and rate
- Bi-directional counting, up/down control
- Quadrature sensing (up to 4 times resolution)
- Built-in batch counting capability
- Display color change capability at setpoint output
- Dual input for A minus B function or direction
- Programmeable update (values refresh) rates
- IP65 front panel

In the counter/rate indicator mode, each have their own scaling and decimal point read-outs in different engineering units. The internal batch counter can be used to count setpoint output activations. The meter has two separate inputs which provide different functions depending on which operating mode is selected. Input A accepts the signal for the Count and/or Rate displays, while Input B accepts the signal for the Count display or direction control. The resulting display can be chosen as the sum or difference of the two inputs.

Dimensional Information



Options & Ordering Information

Type	Model No.	Description	Part number
CUB5	CUB5R	Dual Counter & Rate Indicator with Reflective Display	CUB5R000
	CUB5B	Dual Counter & Rate Indicator with Backlight Display	CUB5B000
Optional Plug-in Cards	CUB5RLY	Single Relay Option Card	CUB5RLY0
	CUB5SNK	Dual Sinking Open Collector Output card	CUB5SNK0
	CUB5COM	RS485 Serial Communications Card	CUB5COM1
		RS232 Serial Communications Card	CUB5COM2
Accessories	MLPS1	Micro-Line Power Supply, 85 to 250 VAC	MLPS1000
	CBLPRO	Programming Cable RS232 (RJ11-DB9)	CBLPROG0
	CBPRO	Programming Cable RS485 (RJ11-DB9)	CBPRO007
	SFCRD	Crimson 2 PC Configuration Software for Windows 98, ME, 2000, XP	SFCRD200

Instrumentation

PAX series analogue, frequency single & dual input LED rate & total displays



The PAX Analogue Panel Meters offer many features and performance capabilities to suit a wide range of industrial applications. Available in five different models to handle various analogue inputs, including DC Voltage/Current, AC Voltage/Current, Process, Temperature, and Strain Gauge Inputs.

The PAXDP has the capability to accept two, 4-20 mA or 0-10 Vdc input signals. Each input signal can be independently scaled and displayed. In addition, various math calculations can be performed on the two signals.

The PAX Digital Input Panel Meters are available in three different models, PAXC Counter/Dual Counter, PAXR Rate Meter and the PAXI which offers both counting and rate in the same package.

1. DISPLAY:

5 digit, 0.56" (14.2 mm) red sunlight readable or standard green LEDs, (-19999 to 99999)

2. POWER:

AC Versions: AC Power: 85 to 250 VAC, 50/60 Hz, 15 VA

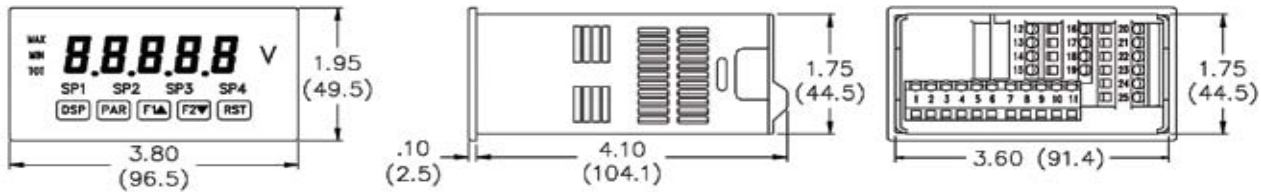
Isolation: 2300 Vrms for 1 min. to all inputs and outputs.

DC Versions: DC Power: 11 to 36 VDC, 11 W (derate operating temperature to 40° C if operating <15 VDC and three plug-in option cards are installed)

AC Power: 24 VAC, ± 10%, 50/60 Hz, 15 VA

Isolation: 500 Vrms for 1 min. to all inputs and outputs (50 V working).

Dimensional Information



Options & Ordering Information

Dual analogue input	PAXDP
Single analogue input	PAXP
Thermocouple/RTD input	PAXT
Strain Gauge/Bridge Input	PAXS
AC True RMS Volt/Current Input	PAXH
Freq. Counter/Dual Counter	PAXC
Freq. Rate Meter	PAXR
Freq. Counter/Dual Counter & Rate	PAXI

85 to 250 VAC	0
18-36 Vdc, 24 Vac*	1
(Not available on PAXH)	
Red, Sunlight Readable Display	0
Green Display	1

Any of the PAX meter can have alarms, comms., and/or a retransmitted analogue output capability by simply adding optional output cards. (see below)

Type	Model no.	Description	Part numbers
Optional Plug-In Cards	PAXCDS	Dual Setpoint Relay Output Card	PAXCDS10
		Quad Setpoint Relay Output Card	PAXCDS20
		Quad Setpoint Sinking Open Collector Output Card	PAXCDS30
		Quad Setpoint Sourcing Open Collector Output Card	PAXCDS40
	PAXCDC	RS485 Serial Communications Output Card with Terminal Block	PAXCDC10
		Extended RS485 Serial Communications Output Card with Dual RJ11 Connector	PAXCDC1C
		RS232 Serial Communications Output Card with Terminal Block	PAXCDC20
		Extended RS232 Serial Communications Output Card with 9 Pin D Connector	PAXCDC2C
		DeviceNet Communications Card	PAXCDC30
		Modbus Communications Card	PAXCDC40
		Extended Modbus Communications Card with Dual RJ11 Connector	PAXCDC4C
	Profibus-DP Communications Card	PAXCDC50	
	PAXCDL	Analog Output Card	PAXCDL10

Instrumentation

FT400 series wall mounting frequency LCD rate & totalising display



The FT400 Series flow computers are microcontroller-based indicator/transmitters that display flow rate and total and provide output signals.

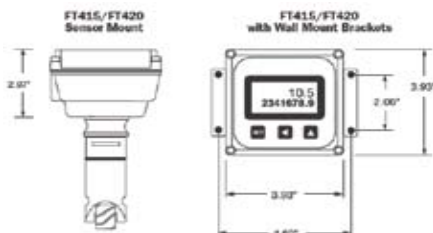
Model FT415 is battery powered and provides a scalable pulse output. The FT420 is powered by external DC voltage and has both pulse and 4-20 mA analog outputs. When the FT420 is being used in the 4-20 mA mode, it is a "two-wire" or "loop-powered" device, meaning that the 4-20 mA output signal doubles as its power supply.

- Rugged industrial IP66 housing
- Battery or DC powered options
- Wall or Meter mount options

Technical Information

	Model FT415	Model FT420
Power	Lithium "C", 3.6 Vdc, replaceable, 3-5 year life	12-30 Vdc, 4mA (4-20 mA when loop-powered)
Display		
Rate	6-digit autorange, 1/2" character height	6-digit autorange, 1/2" character height
Total	8-digit, 5/16" character height	8-digit, 5/16" character height
Output		
Current Sinking Pulse	Scaled Pulse output (0.1 sec duration 6.1 Hz max) (or High Alarm output or Low Alarm output) Sensor pass-through Pulse output (unscaled)	
Analogue	None	4-20 mA loop; 24-30 Vdc
Pulse Output Range	0.1 - 9999999.9 units/pulse	0.1 - 9999999.9 units/pulse
Input	Micropower GMR Sensor (square wave)	5V pulse or contact closure
Input Range	1.0 - 150 pulses/second	1.0 - 1,500 pulses/second
K-Factor Range	.001 - 99999.999	.001 - 99999.999
Flow Alarm Output Range	.01 - 999999.99	.01 - 999999.99
Operating Temperature	-30° to 65° C (-22° to 148° F)	-30° to 65° C (-22° to 148° F)
Environmental	NEMA 4X, IP66	NEMA 4X, IP66

Dimensional Information



Accessories

- Protective cover, hinged = 30785
- Mounting kit, wall-to-meter conversion = MK10
- Mounting kit, meter-to-wall conversion = MK20
- LMI pulse out cable = 12010

Options & ordering Information

MODEL Battery-powered indicator = FT415 Loop-powered indicator/transmitter = FT420	MOUNTING Premounted on meter = M Wall mount = W Panel mount = P	OPTIONS Built-in 115 Vac/12-24 Vdc dual power supply (FT420W only, use with magmeters) = -27 Tamper-evident = -32 Non-resettable total = -64 Built-in 115 Vac power supply (FT420W only, use with mechanical meters) = -66 Dual relay output (FT420 only) = -68
---	--	--

Instrumentation

BT universally mounting totalising LCD display



The BT programmable self powered totaliser is specifically designed for computing & displaying totals from flowmeters or machinery with frequency, sine wave or pulse outputs. The instrument simultaneously displays resettable (batch) total & a cumulative total in engineering units as programmed by the user. Ultra low power consumption is a result of innovative design which provides as much as 10 years of service from the replaceable 3.6V lithium battery. The BT may also be externally powered by 8~24Vdc.

Pulse Outputs

The pulse output can be set as either a scaled or unscaled pulse & is NPN/PNP selectable. The unscaled pulse serves as a frequency amplifier for turbine or paddle wheel style flowmeters.

Programming

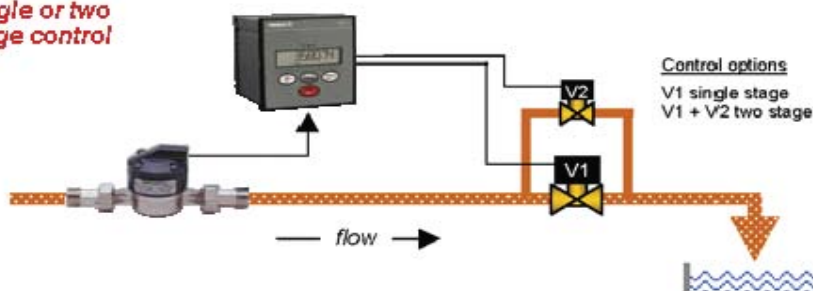
Simple PIN protected flow chart programming with English prompts guide you through the programming routine, greatly reducing the need to refer to the instruction manual.

- Battery powered or 8-24 Vdc
- Dual totalizer and scaled pulsed output
- IP66/67 and ATEX design
- 8 digit LCD cumulative totaliser and large 5 digit resettable totaliser
- Robust field or meter mountable housing with protection cover
- Simple PIN protectable programming
- Accepts universal pulse inputs
- Long battery life
- Reverse polarity protection

Technical Information

Liquid crystal display (LCD)	alpha numeric LCD characters
Resettable total	5 digit x 7.5mm high, programmable to 3 decimal places
Accumulated total	8 digit x 3.6mm high, programmable to 3 decimal places
Engineering units displayed	litres, MLitres, gallons, Mgallons, m3, lbs, kgs or no engineering units displayed
Input types (pulse & frequency)	reed switch, open collector, coil (15mV P~P min.), voltage, current, namur & other proximities
Max. input frequencies	coil 5Khz, hall 2.5Khz, namur 250hz
Input scaling range	0.001~9,999,999.999 with 3 floating decimal points
Pulse outputs	NPN/PNP selectable, non-scaleable (5Khz max.) or scaleable (8hz max.). The scaleable pulse output has a pulse width of 60msec
Operating temperature	-20~+80°C (-4~176°F), consult Flowtechnik for higher / lower temp.
Power source	1 x 3.6V lithium battery, can last up to 10 yrs.
External powering	8~24Vdc (drives output & backlighting)
Intrinsic safe option	Exia IIB T4
Enclosure	IP66/67 (NEMA 4X) glass reinforced nylon, 175g (0.4lb)
Electrical	supplied with gland to suit 3-6mm (0.1- 0.2") dia. cable
Mounting	meter mount, wall, surface, pipe & panel

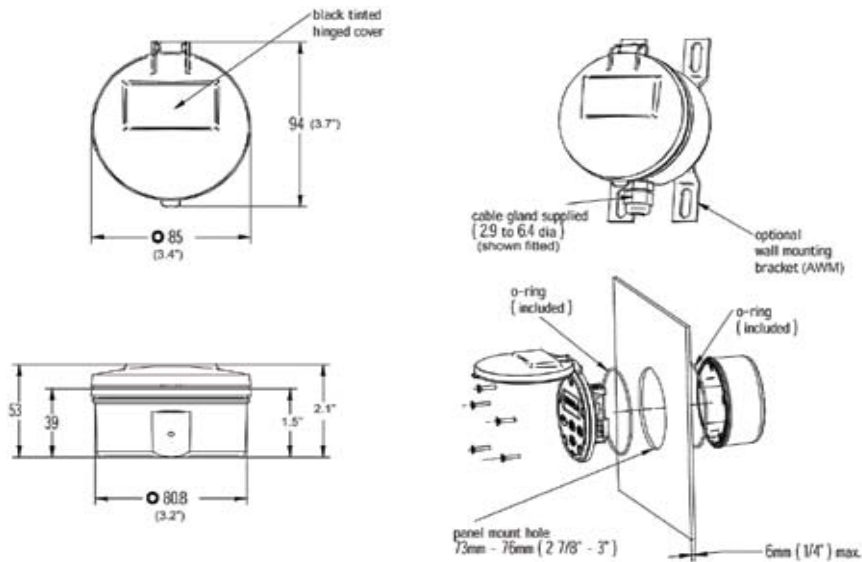
Single or two stage control



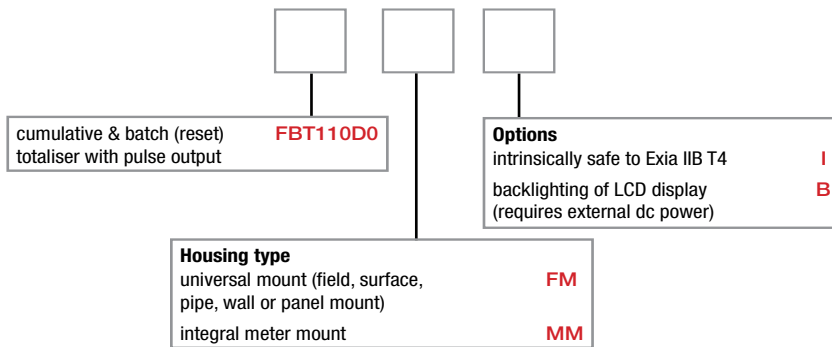
Instrumentation

BT universally mounting totalising LCD display

Dimensional Information



Options & Ordering Information



panel mounted



meter mounted



pipe mounted

Optional adaptors

- AWM**
stainless steel wall mount kit
- ATM**
fixed stem for Turbine meters
- APM**
stainless steel 2" pipe mount kit

- AUS**
swivel stem for Turbine meters
- ACF**
cooling fin for hi temp. flowmeters
- ACG**
additional cable gland

Instrumentation

RT Universal or DIN mount dual input rate & total LCD display



The RT is a fully programmable self powered flow rate totaliser specifically designed for computing & displaying flow rates & totals from flowmeters or machinery with frequency, sine wave or pulse outputs. The instrument displays instantaneous flow rate, resettable (batch) total and a cumulative total in engineering units as programmed by the user. The integral 3.6V replaceable lithium battery supports the rate & total displays and provides as much as 10 years of service.

Outputs (...if externally powered)

An unscaled pulse output serves as an input signal amplifier ideally suited for coil type inputs from turbine or paddle wheel meters. The output can be transmitted over long distances & is NPN/PNP selectable (current sinking or current sourcing). Alternatively a scaleable pulse output is available which is NPN/PNP selectable to facilitate input to any variety of PLC, counter or to drive a relay. The RT also has low and high flow alarms, 4-20mA output, 10 point linearisation of flow input & the capability of adding, subtracting or rationing of two separate flow inputs.

Programming

Simple PIN protected flow chart programming with English prompts guide you through the programming routine, greatly reducing the need to refer to the instruction manual.

- Battery powered or 8-24 Vdc
- Dual flow inputs (A+B, A-B, A÷B)
- Dual totalizer and scaled pulsed output
- IP66/67 and ATEX design
- 8 digit LCD resettable & cumulative totaliser, 5 digit rate display
- Simple PIN protectable programming
- Scaleable flow inputs
- Multipoint linearity correction
- Long battery life
- Non volatile memory
- Low frequency cutoff

Technical Information

Liquid crystal display (LCD)	9mm high alpha numeric characters + subscripts
Instantaneous flow rate	5 digit to 3 decimal places, units/sec, /min, /hr or /day
Resettable & accumulated totals	8 digit, programmable to 3 decimal places
Engineering units displayed	litres, MLitres, gallons, Mgallons, m3, lbs, kgs or no engineering units displayed
Input types (pulse & frequency)	reed switch, open collector, coil (15mV P~P min.), voltage, current, namur & other proximities, voltage & current pulses
Dual inputs (A&B)	A+B, A-B, or A÷B (all outputs correspond)
Input frequency range (rate)	0.1hz to 10Khz (with programmable low frequency cut-off)
Input scaling range	0.001~9,999,999.999 with 3 floating decimal points
Linearisation	10 point correction, best under external power
Operating temperature	-10~+80°C (14~176°F), refer factory for higher / lower temp.
Power sources	one 3.6V lithium battery, 8~24Vdc external source and/or 4~20mA loop powered.
Also with PM version	95~260Vac (DIN panel mount version)
Rate Outputs	4~20mA into 750Ω @24Vdc, resolution 0.25% of span, low & high flow alarms (NPN/PNP solid state & relay options)
Pulse outputs	NPN/PNP selectable, non-scaleable (10Khz max.) or scaleable (50hz max.), auto-ranging pulse width: 1000 ÷ (hz x 2) = msec, max 300msec, 1A max.
Enclosures (two styles)	IP66/67 (NEMA 4X) GRN field mount or DIN panel mount
Intrinsic safe option	Exia IIB T4
Mounting flexibility	meter mount, wall, surface, pipe or panel mount