

SERIES 500

contrec

FLOW COMPUTER

Model 505

BATCH CONTROLLER
RATE TOTALIZER



Features

- One configurable frequency input
- One 4-20mA input
- Remote logic input
- Selectable communications protocol on serial ports including Modbus RTU
- Optional Infra-red communications port on front panel
- Non-isolated 4-20mA output for retransmission
- Non-isolated pulse output for retransmission
- Pulse width and scaling of pulse output
- Two relay outputs
- RTC logging
- Front panel adjustment of 8-24V DC output voltage
- Backlit display
- LCD backup



The model 505 is a flow computer with full rate-totalizing and batch controlling functions suitable for a wide range of flowmeters.

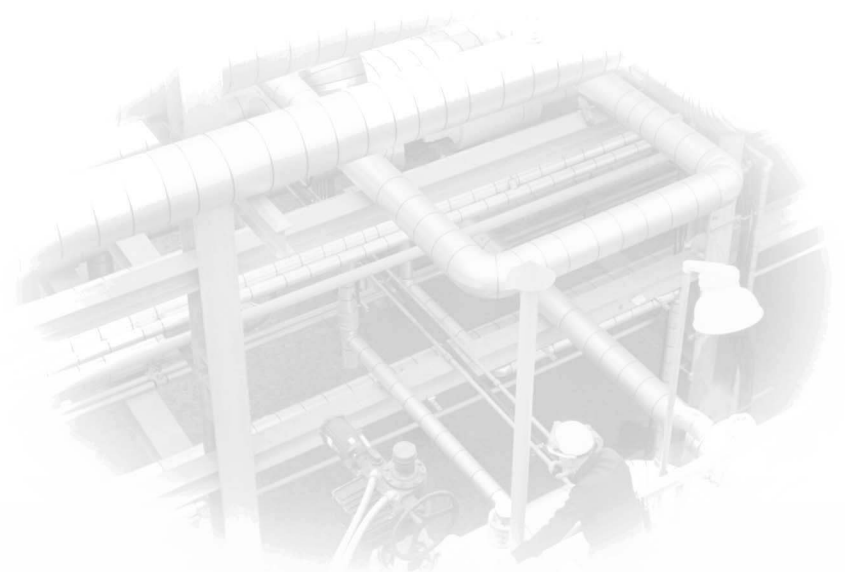
General Overview

The 505 is the base model in the 500 series. With one configurable frequency input and one 4-20mA analog input, it is a cost-effective instrument for those simple applications.

The hardware is very adaptable and when fully optioned has all the new features that come with the 500 series and its powerful micro-controller including data logging and infra-red communications.

The Model 505 is capable of being used in a number of application areas including batch controlling, rate totalising and level monitoring. The behaviour of the instrument is determined by the instrument software which is selected from an increasing list of applications in the 500 Series Program Manager.

A snap-in front panel strip with front key functions is available to suit the particular type of application, such as rate totalising or batch controlling.



Accuracy • Quality • Performance

Software Configuration

The instrument can be further tailored to suit specific application needs including units of measure, custom tags, second language or access levels. A distributor can configure these requirements before delivery.

Most other parameters can be programmed in the field, according to the user-access levels assigned to the parameters by the distributor.

Displayed Outputs

The front panel display shows the current values of the input variables and the results of the calculations.

The instrument can be supplied with a real-time clock for data logging of up to 100 entries of the first ten variables as displayed on the main menu.

Communications

There are three communication ports available as follows:

- RS-232 serial port (standard)
- RS-485 port (standard)
- Infra-red port (on front panel - display panel option)

These ports are available for remote meter reading and for initial application loading of the instrument.

Retransmission Outputs

With the pulse output and the 4-20mA output on the advanced option it is possible to retransmit any main-menu variable. The totals are output as pulses and rates are output as 4-20mA signals.

Relay Outputs

The relay alarms can be assigned to any of the main menu variables of a rate type. The alarm can be fully configured including hysteresis. Two relays are standard.

Terminal Designations

Terminal Label		Designation		Comment
1	RS485	+	RS485 data in (+)	Standard version
2		-	RS485 data out (-)	
3		G	Comms ground	
4	RS232	Tx	RS232 data out (+)	Standard version
5		Rx	RS232 data in (-)	
6		C	CTS (Clear to send)	
7	Io	+	4-20mA output	Advanced option
8	SG	-	Signal Ground 0v	
9	Li	+	Logic input	Standard version
10	D OUT	1+	Open collector o/p 1	Digital outputs
11		2+	Open collector o/p 2	
12	li	+	4-20mA input	Standard version
13	SG	-	Signal Ground 0v	
14	Fi	+	Frequency input	Standard version
15	Vo	+	8-24 volts DC output	Overload protected
16	G	-	DC Ground	
17	Vi	+	DC power input	DC power in 12-28V
18	SH	E	Shield terminal	
19	RELAYS	R1	Relay 1	Standard version
20		RC	Relay Common	
21		R2	Relay 2	
E	AC MAINS	E	Mains ground	AC power in 95-135V or 190-260V
N		N	Mains neutral	
A		A	Mains active	
RS232 port			9-pin serial port	Extra option



Specifications

General

Operating Environment

PCB Protection - Conformal Coating

Temperature	0°C to +60°C
Humidity	0 to 95% non condensing

PCB Protection - None

Temperature	+5°C to +40°C
Humidity	5% to 85% non condensing

Power Supply	95 to 135 volts AC or 190 to 260 volts AC or 12 to 28 volts DC
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Power Cons. Protection	Typically 6W Sealed to IP65 (Nema 4X) when panel mounted
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Dimensions	147mm (5.8") width 74mm (2.9") height 166mm (6.6") depth
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Keypad	5 embossed tactile keys
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Display

Type	LCD with 7-digit numeric display and 11-character alphanumeric display
Digits	15.5mm (0.6") high
Characters	6mm (0.24") high
LCD Backup	Last data visible for 15min after power down (optional)
Update Rate	0.3 second

Approvals

Interference	CE compliance
Enclosure	CENELEC, FM, CSA and SAA approved enclosures available for hazardous areas

Inputs

Frequency Input (General)

Range	0 to 10kHz
Overvoltage	30V maximum
Update Time	0.3 sec
Cutoff frequency	Programmable (default at 0.25Hz)
Configuration	Pulse, coil or NPS input

Pulse

Signal Type	CMOS, TTL, open collector, reed switch
Threshold	1.3 volts

Coil

Signal Type	Turbine and sine wave
Sensitivity	15mV p-p minimum

NPS

Signal Type	NPS sensor to Namur standard
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Analog Input (4-20mA)

Impedance	250 ohms (to common signal ground)
Accuracy	0.1%

Logic Input

Signal Type	CMOS, TTL, open collector, reed switch
Number of inputs	1 input

Outputs

Relay Output

No. of Outputs	2 relays
Voltage	250 volts AC, 30 volts DC maximum
Current	3A maximum

Communication Ports

Ports	RS-232 port (standard - DB9 optional) RS-485 port (standard) Infra-red port (optional)
Baud Rate	2400 to 19200 baud
Parity	Odd, even or none
Stop Bits	1 or 2
Protocols	ASCII or Modbus RTU

Transducer Supply

Voltage	8 to 24 volts DC, programmable
Current	70mA @ 24V DC, 120mA @ 12V DC max
Protection	Power limited output

Pulse Output

Signal Type	Open collector, non-isolated
Switching	200mA, 30 volts DC maximum
Saturation	0.8 volts maximum
Width	Programmable: 10ms, 20ms, 50ms, 100ms, 200ms, 500ms

4-20mA Output

Supply	8 to 24 volts DC internal, non-isolated
Resolution	0.05% full scale
Accuracy	0.05% full scale (20°C) 0.1% (full temperature range, typical)

Real Time Clock (Optional)

Battery Type	3 volts Lithium button cell (CR2032)
Battery Life	5 years (typical)

Important: Specifications are subject to change without notice.

Product Codes

Model	Supplementary Code	Description
505	-	
Enclosure	1	Panel mount enclosure
	2	Field mount enclosure (not yet available)
	3	Explosion proof Ex410 with metric glands
	4	Explosion proof Ex410 with NPT glands
Output Options	0	Basic: - RS232 and RS485 serial ports, 2 relays. 2 pulse outputs, remote logic input
	1	Advanced - also includes 4-20mA output and RTC logging
Extra Options	0	None
	2	9 way DB connector for RS232 serial port
Power Supply	E	For 220/240 VAC
	A	For 110/120 VAC
	D	For DC power only 12-28 VDC
Display Panel Options	S	Standard (no backlight, LCD backup or Infra-Red comms port)
	F	Fully optioned (with backlight, LCD backup and Infra-Red comms port)
PCB Protection	C	Conformal coating - required for maximum environmental operating range. Recommended to avoid damage from moisture and corrosion.
	N	None - suitable for IEC standard 654-1 Climatic Conditions up to Class B2 (Heated and/or cooled enclosed locations)
Application Pack Number	XXnn	Defines the application software to be loaded into the instrument
For example: Model No. 505.110EFC Displayed on the 500 Series as: (only h/w that affects the operation is represented)		- 1 - - F - 505 MODEL

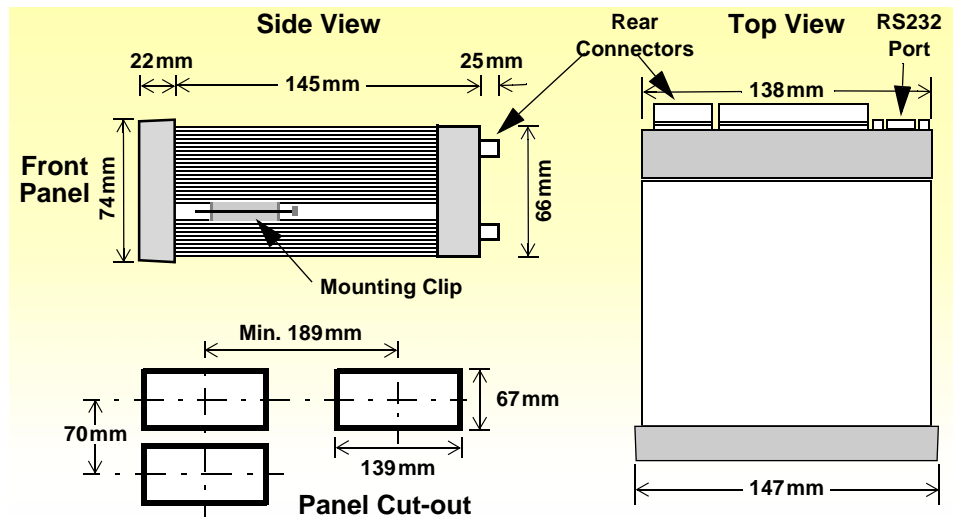
Example full product part number is 505.110EFC-XXnn (This is the number used for placing orders).

Part Number

505-XXXXXX-XXnn
see Product Code to select required features

Default Application software:
505-XXnn-000000

Dimension Drawings



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