

## MODEL 425

### FEATURES

- Accepts most types of Frequency Flow Inputs
- High Accuracy
- Scaled Pulse Output
- High/Low Flow Alarm Outputs
- RS232 and RS485 Output
- Operates from 12-28Vdc or Universal AC Mains Voltage
- Provides 8-24Vdc Transducer Power
- Simplified Programming
- Custom Headers for Ticket Printing
- Large LCD Display
- Adjustable Backlight
- Green, Red and Orange LED Status Lamps
- Tactile Keypad for Improved Operator Interaction



## Flow Computer



The 425 Flow Computer can handle a wide range of flow applications, where high accuracy and flexibility are required.

It will interface to most flowmeters and accepts most types of pulse inputs.



# Field Mounting Flow Computer

NEXT GENERATION FLOW COMPUTER – BASED ON THE ORIGINAL CONTREC 405, PROVEN IN THOUSANDS OF FIELD APPLICATIONS AROUND THE WORLD.

The 425 is a high accuracy Flow Computer designed to operate with digital output flowmeters. Having an IP65 weatherproof case, new tactile keyboard and various mounting options, the 425 is perfect for the most arduous of installations.



## Models Available

### Model 425.\_0

The basic model includes frequency input, RTC, RS232 and RS485 comms ports, High and Low flow alarms, Software controlled DC output, 1/10/100ms pulse output.

### Model 425.\_1

Adds isolated 4-20mA scaled output capability.

## Functions

- Rate
- Total (Resettable)
- Accumulated Total

## Options

- 4-20mA Isolated Output



## Overview

Either the Flow Rate or a Resettable Total can be continuously displayed in engineering units on the large six digit LCD display. A non-resettable Accumulated Total is also displayed whenever the **DISPLAY** key is pressed.

A scaled pulse output, suitable for driving remote totalisers, is a standard feature and the instrument also provides a 8-24Vdc power supply for driving transducers.

### RS232 and RS422/485 Communications Interface

Communications outputs as standard, includes both RS232 and RS485 interfaces for communicating with a computer.

Software drivers are also included for a number of printers and can print a ticket with time and date, a sequential ticket number, and the resettable and accumulated totals.

### Set-up Data is Stored in Non-volatile Memory

The 425 is initially set-up by following a calibration sequence that enables scaling factors, digital filtering and display formatting to be set and stored in a non-volatile memory which does not require battery backup.

The instrument will operate from 12 to 28Vdc or from universal AC mains.

### Digital Filtering Enhances Rate Accuracy

Frequency fluctuations caused by pulsating flow through a flowmeter, often makes the rate impossible to read with any precision.

The 425 has a digital filter which will average out these fluctuations and enable the rate to be read to a four digit accuracy.

The degree of filtering is fully programmable which means that highly accurate and stable readings can be obtained without excessive lag.

## Different Mounting Options Available

The 425 is designed for panel mounting with the fascia watertight to IP65 (Nema 4X) and resistant to most chemicals.

A field enclosure and an explosion-proof enclosure are optionally available.

## Operation

The display of the 425 will normally show the Rate or Resettable Total, as selected by the **RATE** or **TOTAL** keys on the keypad. An LED in the fascia will indicate which function is currently displayed.

The **DISPLAY** key can be used to display the Accumulated Total. On the first press of the **DISPLAY** key, the display shows ACCTOT for one second followed by the actual total.

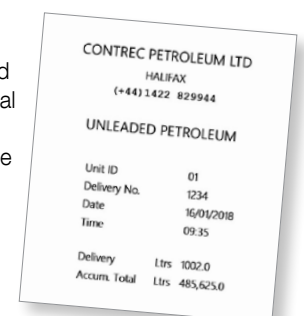
The Accumulated Total continuously totalises the flow and is not resettable via the front panel.

On reaching the maximum displayed total, all totals will roll over to zero and continue totalising. Indication of overflow is provided. If, at any time, power is lost or the instrument is switched off, the totals will be stored in non-volatile memory (10 year retention).

### Computer/Printer Interface

An RS232 and RS485 option is available for interfacing to computers and printers. The interface allows the Batch Controller to be fully controlled from a computer via an ASCII protocol.

Software drivers are included for a number of printers and can print a ticket with time and date, a sequential delivery/batch number and the batch and accumulated totals. An optional header for the ticket can also be printed.





## SPECIFICATIONS

### General

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**Display:** 6 digit 0.7" (17.8mm) high LCD

**Display Update Rate:** 0.25s

**Data Retention:** All set-up parameters and totals are stored in a non-volatile memory with 10 years retention

**Decimal Points:** The number of decimal points with which the rate and totals are displayed can be programmed

**Total Conversion:** It is possible to program a constant so that the rate can be displayed in one unit (eg. gal/m) and the total displayed with a different unit (eg. barrels)

**Time Base:** The rate can be displayed in units per second, minutes, hours or days

**Transducer Supply:** 8-24Vdc software adjustable, 50mA maximum

**Power Requirements:**

DC Supply: 12-28.5Vdc, 200mA typical current

AC Supply: AC mains universal 100-240V input

### Inputs

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**Frequency (Pulse) Input:**

Minimum: 0Hz on Totals, 0.25Hz on Rate

Maximum: 10kHz for single input, 2.5kHz for NPS and coil inputs

**Input Circuits:** Will accept most sine logic and proximity switch inputs

**Scaling Range:** 0.1000 to 50,000

### Outputs

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**Pulse Output**

**Type:** Open collector output with a pulse produced on each increment of the accumulated total

**Maximum Rate:** 4.9/49/499 pulses per second

**Pulse Width:** 100/10/1ms

**Maximum Current:** Current sinking transistor output 100mA, 30Vdc maximum

**4-20mA Output Option**

**Type:** Fully isolated output corresponding to the displayed flow rate, suitable for driving a recorder or controller

**Resolution:** 12 bits

**Accuracy:** <0.1%

**Maximum Load:** 390 ohms from internal power, 950 ohms if externally powered

**Communications Output**

**Type:** RS232, or RS485 interface is available for driving printers and communicating with computers

**Baud Rate:** 300 to 115200

**Parity:** None, odd and even

**Protocols:** A number of protocols are included to interface to printers and computers

**Time/Date:** A real-time clock provides time/date printing on tickets

**ID Code:** For multi-point communications, a unique address can be programmed

**High/Low Flow Alarms**

**Type:** Two Form C relays provide a high and low flow rate alarm. Alarm points are programmable during set-up

**Maximum Current:** 5A

**Maximum Voltage:** 250Vac, 30Vdc

**Maximum Power:** 1250 VA

### Physical

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**Operating Temperature:** 0 to 55°C, 32 to 131°F (-20 to +60°C, -4 to +140°F with Conformal Coating)

**Enclosure**

**Case:** Aluminium

**Rear Connection:** Terminal block

**Front Panel Material:** Polycarbonate

**Dimensions:** 144mm (5.7") W x 72mm (2.9") H x 179mm (7") D

**Protection:**

Field Enclosures: IP65 (Nema 4X)

Enclosures: ATEX, IECEx, CSA approved enclosures are available for hazardous areas

**Mounting Options**

**Panel:** Supplied with mounting brackets and panel mount gasket. Terminals accessible from rear. (*Note: IP65 fascia integrity only maintained when correctly panel mounted using supplied gasket.*)

**Enclosures:** Field mount and explosion proof enclosures available

### Approvals

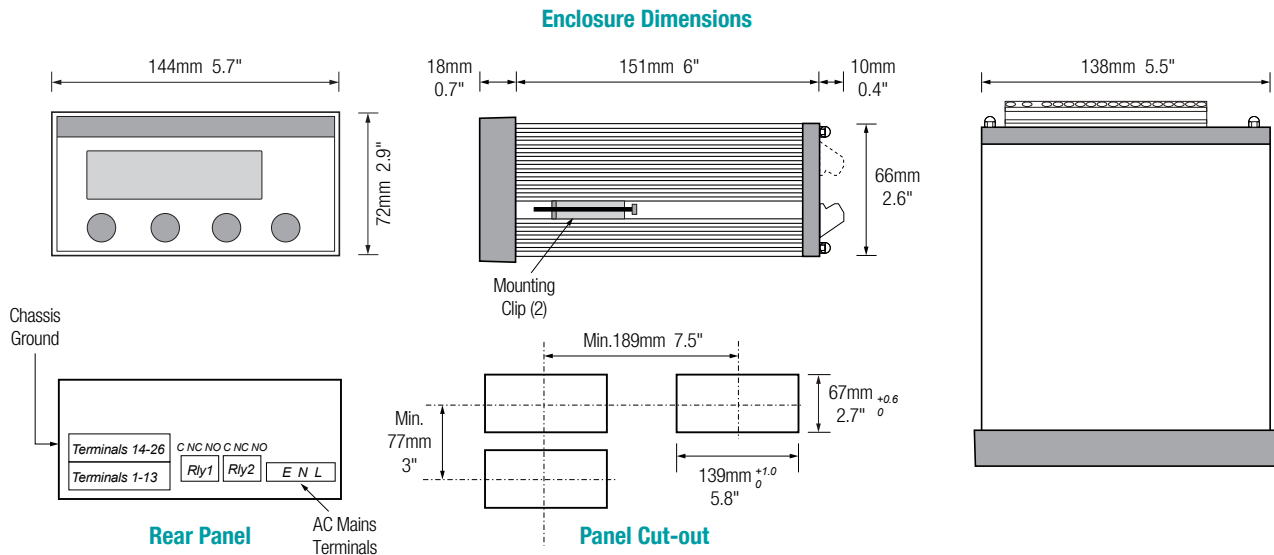
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**Safety:** EN61010:2010, CSA

**EMC:** EN61326:2013

**Important:** Specifications are subject to change without notice.

# DIMENSIONS



# TERMINAL DESCRIPTIONS

Inputs & Outputs			
No.		No.	
1	Flow Common (-)	14	Calibration Link
2	Flow Signal Input (+)	15	Rate Switch
3	+15V (option)	16	Total Switch
4	4-20mA Power Input (option)*	17	Reset Switch
5	I (+) (option)	18	Programme Switch
6	Either I (-) 0V Return (option)**	19	Switch Ground
7	Or I (-) -15V Return (option)***	20	CTS In
8	RS232 Signal Ground	21	RS232 Data In
9	RS485 (-)	22	RS232 Data Out
10	RS485 (+)	23	Pulse & Power Out Ground
11	Pulse Out	24	Not Used
12	DC Power Input (12-28.5Vdc)	25	Not Used
13	DC Ground	26	DC Power Out (8-24Vdc)

\* Link to 3 or ext PSU  
 \*\* Loads up to 390 ohms  
 \*\*\* Loads up to 950 ohms

Relays	
No.	
27	Relay 1 – Common
28	Relay 1 – Normally Closed
29	Relay 1 – Normally Open
30	Relay 2 – Common
31	Relay 2 – Normally Closed
32	Relay 2 – Normally Open

# PRODUCT CODES

When specifying please indicate model(s) required using the following:

Product Code, Mounting Types & Options			
<b>425</b>	•		<b>Flow Controller</b>
<b>Enclosure Mounting</b>	1		Panel Mounting
	2		Field Mount Enclosure
	3		Explosion Proof Enclosure
<b>4-20mA Output</b>	0		None
	1		4-20mA Output
<b>Power Supply</b>	U		Universal 110/240Vac
	D		12-28Vdc Supply
<b>Special Options</b>	N		No Option
	C		Conformal Coating

Typical Part Number: 425.11UC

# Instruments within the Contrec family:

**100 Series** – Accurate process instruments for field mounting applications

**200 Series** – Intrinsically safe, precise and reliable process instruments

**400 Series** – Rugged and dependable batch and flow control solutions

**505 Series** – Next generation flow instruments for a variety of applications

**515 Series** – Precise flow and batch control for more complex applications

**LC Series** – Robust load controllers for petroleum and chemical applications



**Contrec Ltd**  
 Riverside, Canal Road  
 Sowerby Bridge  
 West Yorkshire HX6 2AY

**t** +44 (0)1422 829944  
**f** +44 (0)1422 829945  
**e** sales@contrec.co.uk  
**w** www.contrec.co.uk

**SALES & TECHNICAL SUPPORT:**  
**+44 (0)1422 829944**  
**www.contrec.co.uk**

**Contrec Ltd**  
 European, Middle East and Africa Sales:  
 +44 (0)1422 829944  
 sales@contrec.co.uk

**Contrec USA LLC**  
 Americas & Canada Sales:  
 +1 (0)205 685 3000  
 customerservice@contrec-usa.com

**Contrec Systems PTY Ltd**  
 Australasia Sales and South East Asia  
 Support: +61 (0)413 505 114  
 paul@contrec.com.au

