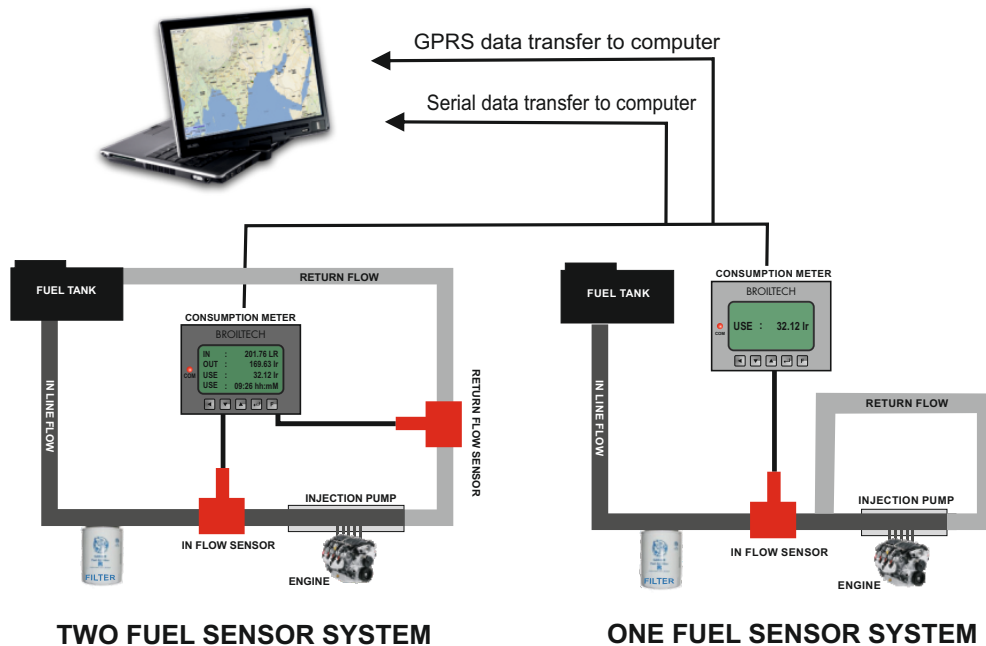
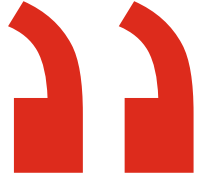


# FUEL CONSUMPTION METER



**BROILTECH** launched offline fuel consumption meter for vehicle and diesel generator fuel management, FCM is combination of two fuel flow sensor (One for supply line and Second for return line) and fuel calculator, fuel calculator available with digital MODBUS RS232/485 output for external communication.

## ADVANTAGES

Indicate total consumption, fuel supply toward engine, fuel return from engine, Indicate fuel flow rate of consumption, supply and return, indicate total time of consumption, supply and return, Suitable with all diesel engine, Power supply : 9 v dc to 24 v dc

## MARKETS & AREAS OF APPLICATION

Broil FCM system highly reliable and accurate fuel consumption measurement in trucks, tankers, infrastructure and construction machinery, agriculture machinery, river boats and diesel engine. It define you an accurate consumption of fuel so difficult to the fuel from vehicle

## SELECTION

- BT-DOFS-006 : UP to 200 kw
- BT-DOFS-008 : 200 to 400 kw
- BT-DOFS-012 : 400 to 1000 kw
- BT-DOFS-020 : 1000 to 1500 kw
- BT-DOFS-025 : 1500 to 2000 kw



# OVAL GEAR

(POSITIVE DISPLACEMENT METER)

BROIL INDUSTRIAL POSITIVE DISPLACEMENT FLOW METER UTILIZES SPECIALLY DESIGNED OVAL ROTORS AT ITS CORE, ENSURING HIGH ACCURACY AND LONG LIFE. THESE FIELD-PROVEN OVAL ROTORS EXCEL IN MEASURING A WIDE RANGE OF HIGH VISCOSITY FLUIDS, MAKING THE METER SUITABLE FOR DIVERSE INDUSTRIAL APPLICATIONS.



## PERFORMANCE DATA

**Flow rates** : wide flow range from 0.7 L/H to 1,50,000 L/H, Pressure upto 300 Bar, Independent of viscosity, High resolution, Pulsation-free measurement, non-sensitive to pulsating flows, Resistant to corrosion by advanced materials and bearings

## MARKETS & AREAS OF APPLICATION

Light and heavy fuel oils, Hydraulics Test rigs with varying viscosities and fluids, Excellent choice for laminating systems, painting systems, adhesive dispense systems, as well as batching systems for various fluids.

**Aluminum Wetted Part** : Kerosene, Gasoline, Diesel, Light oil, Heavy oil

**S. S. Wetted Part** : Wine, Bear, Alcohol, Milk and Food Liquid

**PPS Wetted Part** : for all Chemical & Pharma drug

## ADVANTAGES

- Wide range of design options with different output,
- Long life with high accuracy and repeatability

## OUTPUT SENSOR

**Power voltage** : 5 / 12 / 24 V DC

**Output signal** : NPN/PNP Open Collector/Proxy Sensor

**High Ele. Level** : Higher Than 8 V DC ( Input 12 VDC )

**Low Ele. Level** : Lower Than 0.8 V DC ( Input 12 VDC )

## GENERAL SPECIFICATION

Enclosure : Aluminum / SS - 304 / SS - 316 / CAST IRON

Rotor : Aluminum / SS - 316 / PPS

Shaft : Hard SS - 316

Repeatability : 0.01%

Accuracy (standard position) : +/- 0.5% Rs / 0.15% FSD

Maximum Working Pressure : 5 mpa for Al,  
30 mpa for SS

Fluid & Ambient Temperature : -20° to 150° C

Connection : Thread (F) or Flange

## DISPLAY WITH VARIOUS OUTPUT

Power Voltage : 24 V DC

### Output Signal

Retransmit : (4 ~ 20) mA / Pulse (programmable)

Communication : RS - 485 / HART Protocol

Relay : High & Low Flow

### Battery Operated Meter

Power Voltage : 3.6 V DC Lithium Batteries

Display Mode : Double row LCD as below

**Q X.XXXXX** Six Digit Instantaneous Flow  
(m<sup>3</sup>/h, L/h, L/M, m<sup>3</sup>/M, m<sup>3</sup>/h, L/h, kg/M, GPM, T/h, kg/h)

**XXXX.XXXX** Eight Digit Cumulative Flow

Cumulative flow : Automatically expand the display precision.

The cumulative flow values can be reset.

Power - fail protection :

The instrument coefficient ensures that total flow values for the past ten years are retained even in the event of a power supply drop.

### Mechanical Type Meter

Mode : Resettable counter : 9999 Ltr Max

Non Resettable counter : 99999 x 100 Ltr Max

Type : Cumulative Total + Resettable Counter

Cumulative Total + Resettable Counter + Pulse

## MODEL RANGE

Model Number	Line Size	Range	Liter / Pulse
BT-DOFS - 004	4 mm	0.7 ~ 60 L/H	0.000363
BT-DOFS - 006	6 mm	5 ~ 150 L/H	0.000714
BT-DOFS - 008	8 mm	20 ~ 300 L/H	0.00240
BT-DOFS - 012	12 mm	50 ~ 1200 L/H	0.00240
BT-DOFS - 020	20 mm	150 ~ 2000 L/H	0.0156
BT-DOFS - 025	25 mm	200 ~ 4000 L/H	0.0208
BT-DOFS - 040	40 mm	400 ~ 10000 L/H	0.1428
BT-DOFS - 050	50 mm	600 ~ 20000 L/H	0.1818
BT-DOFS - 080	80 mm	1000 ~ 50000 L/H	0.333
BT-DOFS - 100	100 mm	2000 ~ 100000 L/H	1.0
BT-DOFS - 150	150 mm	5000 ~ 150000 L/H	3.2

FOR ALL THE MODELS DOUBLE PULSE ARE AVAILABLE

## PROXY SENSOR WITH THREAD & FLANGE END DIMENSION

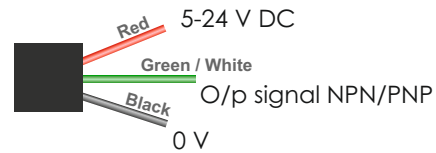
Model Number	CON. (BSP - F)	L1	L2	H1, H2	H3	L3	D1	D2	n X D3	PCD
BT-DOFS - 004	1/4"	NA	60	71	14.5	50 X M 5	NA	NA	NA	NA
BT-DOFS - 006	1/4"	NA	60	65	20.5	50 X M 5	NA	NA	NA	NA
BT-DOFS - 008	3/8"	NA	68	70	21.0	60 X M 5	NA	NA	NA	NA
BT-DOFS - 012	1/2"	180	78	73	25.5	60 X M 5	90	15.5	4 X 16	60.3
BT-DOFS - 020	3/4"	185	82	81	23.0	75 X M 5	100	19.5	4 X 16	69.9
BT-DOFS - 025	1"	263	103	78	32.0	95 X M 5	110	24.5	4 X 16	79.4
BT-DOFS - 040	1 1/2"	317	127	98	40.0	120 X M 8	125	34.5	4 X 16	98.4
BT-DOFS - 050	2"	419	187	115	56.0	175 X M 8	150	45.0	4 X 19	120.4
BT-DOFS - 080	3"	415	205	116	58.0	200 X M 8	190	78.0	4 X 19	152.4

CON. = CONNECTION

ALL THE DIMENSION IN MILLIMETER

## ELECTRIC CONNECTION

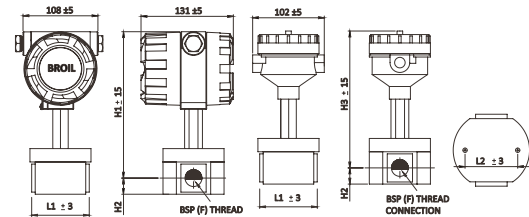
### PULSE OUTPUT



### DISPLAY OUTPUT

\* Please Check Display Manual

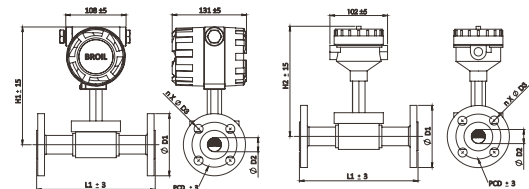
calculate pulse/liter at : 25%, 50%, 75% and 100% flow rate with pure diesel at 25 °C



## THREAD END DIMENSION

Model Number	CON. (BSP - F)	L1	L2	H1	H2	H3
BT-DOFS - 004	1/4"	60	50 X M 5	NA	14.5	172
BT-DOFS - 006	1/4"	60	50 X M 5	NA	20.5	166
BT-DOFS - 008	3/8"	68	60 X M 5	194	21.0	171
BT-DOFS - 012	1/2"	78	60 X M 5	197	25.5	174
BT-DOFS - 020	3/4"	82	75 X M 5	205	23.0	182
BT-DOFS - 025	1"	103	95 X M 5	202	32.0	179
BT-DOFS - 040	1 1/2"	127	120 X M 8	222	40.0	199
BT-DOFS - 050	2"	187	175 X M 8	239	56.0	216
BT-DOFS - 080	3"	205	200 X M 8	240	58.0	217

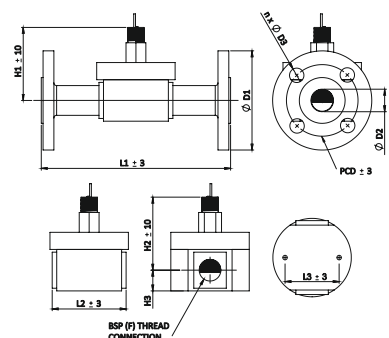
ALL THE DIMENSION IN MILLIMETER



## FLANGE END DIMENSION

Model Number	L1	H1	H2	D1	D2	n X D3	PCD
BT-DOFS - 012	180	197	174	90	15.5	4 X 16	60.3
BT-DOFS - 020	185	205	182	100	19.5	4 X 16	69.9
BT-DOFS - 025	263	202	179	110	24.5	4 X 16	79.4
BT-DOFS - 040	317	222	199	125	34.5	4 X 16	98.4
BT-DOFS - 050	419	239	216	150	45.0	4 X 19	120.7
BT-DOFS - 080	415	240	217	190	78.0	4 X 19	152.4

ALL THE DIMENSION IN MILLIMETER

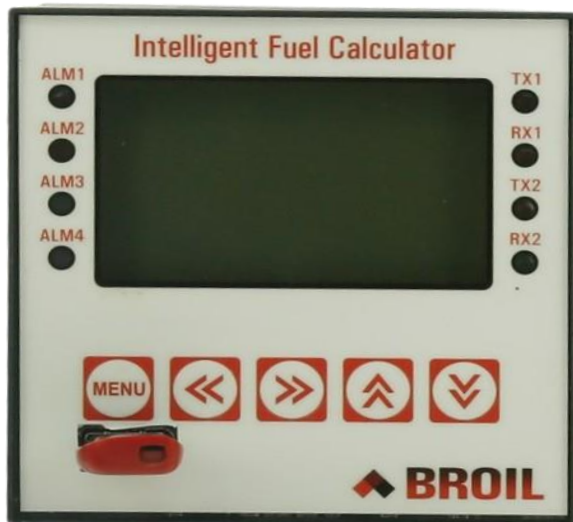


# INTELILIGENT FUEL CALCULATOR

Our advanced Fuel Consumption Meter is designed to provide accurate monitoring and management of fuel usage, making it an essential tool for industries that rely on precise fuel management. The meter's user-friendly interface and comprehensive functionalities ensure efficient operation and valuable insights into fuel consumption patterns.

## Key Features

- **User-Friendly Keypad Operation:** The meter is operated via a keypad with four keys: MENU, Left Shift, Right Shift, Up, and Down. These keys facilitate easy navigation through the meter's various functions and settings.
- **Accurate Fuel Monitoring:** Measures both fuel supply towards engine and fuel return from engine, providing real-time data on consumption, residual fuel, and instantaneous flow rates.
- **Data Export and Query:** Export data in CSV format for detailed analysis. Query past records,



logs, and export logs for comprehensive fuel usage tracking.

- **Communication Setup:** Configurable RS485 communication setup with selectable baud rates and parity checks, ensuring seamless integration with existing systems.
  - **Reset Functions:** Easily reset total usage, running time, and residual oil. Clear logs and records to maintain up-to-date data.
  - **Calibration and Display Unit Customization:** Options for calibration and unit selection (LPH, LPM, GPM, Kg/hr, m3/hr...etc) to meet specific requirements.
- **Security:** Password-protected settings to prevent unauthorized changes. Option to change passwords for enhanced security.
  - **Display:** Backlit LCD
- **Power Supply:** 24V DC / 230V AC
  - **Input:** Pulse
  - **Output:** 4-20mA, RS-485 Modbus, Pulse Output  
24V DC / 12V DC Output for flow sensor