

Product Data Sheet
PDS-190-111
2021-01-09

Series 190 Totalizers, Indicators and Transmitters for Mechanical Drive Propeller Flowmeters

FT190-111

Description

For applications where the environment is unfriendly to a digital microprocessor device, Sparling has updated its FT190 to incorporate a 4-20mA and scaled pulse output. The FT190 is a rugged mechanical transmitter that has been successfully used in the field for over thirty years and the FT190-111 continues Sparling's tradition of highly robust solutions for the flow metering world.

The FT190-111 mechanical indicator/totalizer is used in combination with, and mounted on Sparling mechanical propeller flowmeters to provide mechanical totalization (registration), mechanical indication (flow rate) and a 4-20mA and scaled pulse output.



Readout and Output Capabilities

Type	Mechanical Totalization	Mechanical Rate Indication	Outputs	4-20mA (Two Wire)*	Scaled Electronic Pulse Rate	Weight
FT190-111 - (Formerly Model 245)	Yes	Yes	Yes	Yes	Yes	20lbs

Standard Specifications

Mechanical Rate Indicator

Scale Length.....6"
Accuracy..... $\pm 5\%$ Reading
Available Scales..... See Table 4

Mechanical Totalizer

Number of Digits..... 6
Accuracy.....2% Full Scale
Units of Registration.....See Table 2
Test Hand..... One full rotation per least significant digit of totalizer.

4-20mA

True two-wire requiring external power supply
External Power Supply.....18-30VDC
Output Load Capacity...See power supply vs. output load curve
Reverse Polarity Protection..... 35VDC
Accuracy..... $\pm 0.5\%$ Full Scale

Scaled Electronic Pulse Rate

Two-wire isolated solid state switch (photocoupled)
External Power Supply..... 10VDC - 30VDC
Pulse Amplitude 0VDC (off) to external supply voltage minus 3VDC (on)
Output Load..... 4000 mW Max
Pulse On Time..... 100ms
Pulse Output Registration. Equal to mechanical totalizer least significant digit
Accuracy.....2% actual flow

All Output Connections. Pigtail leads through $\frac{1}{2}$ NPT grommets or potted sealed conduit connection.

Enclosures..... NEMA 3R

Electrical Rating..... General Purpose

Amb. Temp..... 30°F to 130°F

Construction Material..... Painted Die Cast Aluminum

How to Order

Table 1: Base Model Number

FT190 - Mechanical Flow Totalizer and Indicator

Table 2: Outputs

111 - 4-20mA and Pulse Output

Table 3: Mounting

2 - For Mounting on Meterhead on Same Order
3 - Replacement for Existing Meterheads

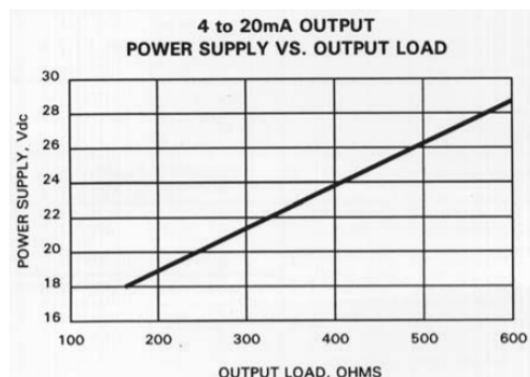
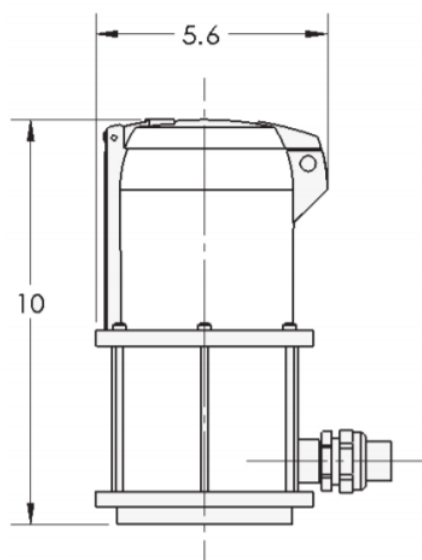
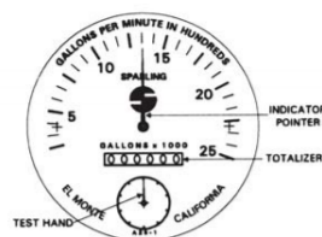
Model
FT190

Outputs
111

Mount
2

Ordering Information

- 1) Construct model number by selecting one code for each category.
- 2) If ordered with a new meter-head, state base model number and size of meter-head. If replacement for an existing meterhead, state serial number of existing meterhead.
- 3) Provide the following information from Tables 2 & 3.
 - a. Mechanical indicator scale and units.
 - b. Mechanical totalizer registration and units.



Standard Registration For FT190

2"		3"		4"	
Full Scale Indication	Registration	Full Scale Indication	Registration	Full Scale Indication	Registration
100 GPM	10 gallons	200 GPM	10 gallons	750 GPM	100 gallons
100 IGPM	10 IMP. GAL.	200 IGPM	10 IMP. GAL.	750 GPM	1000 gallons
100 GPM	10 CF	300 GPM	10 gallons	750 IGPM	1000 IMP. GAL.
200 GPM	100 gallons	300 IGPM	10 IMP. GAL.	1000 GPM	100 gallons
200 GPM	10 IMP. GAL.	300 GPM	Unit IMP. GAL.	1000 GPM	1000 gallons
300 GPM	10 CF	300 GPM	10 CF	1000 IGPM	1000 IMP. GAL.
0.2 CFS	10 CF	300 GPM	0.0001 AF	1000 GPM	10 CF
0.5 CFS	10 CF	500 GPM	100 gallons	1000 GPM	100 CF
6.0 LPS	100 Liters	500 IGPM	100 IMP. GAL.	1000 GPM	0.001 AF
12.5 LPS	0.1 CU. MTRS.	500 GPM	10 CF	2.0 CFS	10 CF
		500 GPM	0.001 AF	3.0 CFS	10 CF
		0.5 CFS	10 CF	3.0 CFS	100 CF
		1.0 CFS	10 CF	3.0 CFS	0.001 AF
		0.5 MGD	100 gallons	1.0 MGD	100 gallons
		12.5 LPS	0.1 CU. MTRS.	1.5 MGD	100 gallons
		25.0 LPS	1000 Liters	50.0 LPS	Unit CU. MTRS.
		30.0 LPS	1000 Liters	60.0 LPS	1000 Liters
		100 M ³ /HR	Unit CU. MTRS.	60.0 LPS	Unit CU. MTRS.
				75.0 LPS	Unit CU. MTRS.

6"		8"		10"	
Full Scale Indication	Registration	Full Scale Indication	Registration	Full Scale Indication	Registration
1000 GPM	100 gallons	1400 GPM	1000 gallons	1700 GPM	1000 gallons
1000 GPM	1000 gallons	1400 IGPM	1000 IMP. GAL.	1700 IGPM	1000 IMP. GAL.
1000 IGPM	1000 IMP. GAL.	1400 GPM	100 CF	1700 GPM	100 CF
1000 GPM	10 CF	1400 GPM	0.001 CF	1700 GPM	0.01 AG
1000 GPM	100 CF	1400 GPM	Unit CU. MTRS.	4.0 CFS	100 CF
1000 GPM	0.001 AF	1400 GPM	0.01 Acre In.	4.0 CFS	0.001 AF
2.0 CFS	10 CF	3.0 CFS	10 CF	5.5 CFS	0.001 AF
3.0 CFS	10 CF	3.0 CFS	100 CF	2.5 MGD	1000 gallons
3.0 CFS	100 CF	3.0 CFS	0.001 AF	100 LPS	1000 Liters
3.0 CFS	0.001 AF	2.0 MGD	1000 gallons	125 LPS	1000 Liters
1.5 MGD	1000 gallons	75.0 LPS	1000 Liters	2500 GPM	1000 gallons
60.0 LPS	1000 Liters	100 LPS	Unit CU. MTRS.	2500 IGPM	1000 IMP. GAL.
60.0 LPS	Unit CU. MTRS.	1700 GPM	1000 gallons	2500 GPM	100 CF
75.0 LPS	Unit CU. MTRS.	1700 IGPM	1000 IMP. GAL.	2500 GPM	0.01 AF
1400 GPM	1000 gallons	1700 GPM	100 CF	2500 GPM	0.1 Acre In.
1400 IGPM	1000 IMP. GAL.	1700 GPM	0.01 AF	6.0 CFS	100 CF
1400 GPM	100 CF	4.0 CFS	100 CF	6.0 CFS	0.01 AF
1400 GPM	0.001 AF	4.0 CFS	0.001 AF	4.0 MGD	1000 gallons
1400 GPM	Unit CU. MTRS.	5.5 CFS	0.001 AF	200 LPS	10 CU. MTRS.
1400 GPM	0.01 Acre In.	2.5 MGD	1000 gallons	200 LPS	0.01 Mega Ltr.
2.0 MGD	1000 gallons	125 LPS	1000 Liters	3000 GPM	1000 gallons
1700 GPM	1000 gallons	2500 GPM	1000 gallons	3000 IGPM	1000 IMP. GAL.
1700 IGPM	1000 IMP. GAL.	2500 IGPM	1000 IMP. GAL.	7.5 CFS	0.001 AF
1700 GPM	100 CF	2500 GPM	100 CF	8.0 CFS	100 CF
1700 GPM	0.01 AF	2500 GPM	0.01 AF	8.0 CFS	0.01 AF
4.0 CFS	100 CF	2500 GPM	0.1 Acre In.	5.0 MGD	1000 gallons
4.0 CFS	0.001 AF	6.0 CFS	100 CF	3500 GPM	1000 gallons
5.5 CFS	0.001 AF	6.0 GPM	0.02 AF	3500 IGPM	1000 IMP. GAL.
2.5 MGD	1000 gallons	4.0 MGD	1000 gallons	3500 GPM	100 CF
100 LPS	1000 Liters	200 LPS	0 CU. MTRS.	3500 GPM	1000 CF
100 LPS	Unit CU. MTRS.	200 LPS	0.01 Mega Ltr.	3500 GPM	0.01 AF
125 LPS	1000 Liters				

12"			14"			16"		
Full Scale Indication		Registration	Full Scale Indication		Registration	Full Scale Indication		Registration
2500	GPM	1000 gallons	3000	GPM	1000 gallons	4500	GPM	1000 gallons
2500	IGPM	1000 IMP. GAL.	3000	IGPM	1000 IMP. GAL.	4500	IGPM	1000 IMP. GAL.
2500	GPM	100 CF	7.5	CFS	0.001 AF	4500	GPM	0.01 AF
2500	GPM	0.01 AF	8.0	CFS	100 CF	10.0	CFS	100 CF
2500	GPM	0.1 Acre In.	8.0	CFS	0.01 AF	10.0	CFS	0.01 AF
6.0	CFS	100 CF	5.0	MGD	1000 gallons	7.5	MGD	1000 gallons
6.0	CFS	0.01 AF	200	LPS	10 CU. MTRS.	250	LPS	10000 Liters
4.0	MGD	1000 gallons	200	LPS	0.01 Mega Ltr.	250	LPS	10 CU. MTRS.
200	LPS	10 CU. MTRS.	3500	GPM	1000 gallons	5000	GPM	1000 gallons
200	LPS	0.01 Mega Ltr.	3500	IGPM	1000 IMP. GAL.	5000	IGPM	1000 IMP. GAL.
3000	GPM	1000 gallons	3500	GPM	100 CF	5000	GPM	100 CF
3000	IGPM	1000 IMP. GAL.	3500	GPM	0.01 AF	14.0	CFS	100 CF
7.5	CFS	0.001 AF	4500	GPM	1000 gallons	300	LPS	10 CU. MTRS.
8.0	CFS	100 CF	4500	IGPM	1000 IMP. GAL.	6000	GPM	1000 gallons
8.0	CFS	0.01 AF	4500	GPM	0.01 AF	6000	IGPM	10 IMP. GAL.
5.0	MGD	1000 gallons	4500	GPM	100 CF	6000	GPM	10000 gallons
3500	GPM	1000 gallons	10.0	CFS	100 CF	6000	GPM	100 CF
3500	IGPM	1000 IMP. GAL.	10.0	CFS	0.01 AF	7500	GPM	10000 gallons
3500	GPM	100 CF	7.5	MGD	1000 gallons	15.0	CFS	100 CF
3500	GPM	1000 CF	250	LPS	10000 Liters	15.0	CFS	0.01 AF
3500	GPM	0.01 AF	250	LPS	10 CU. MTRS.	10.0	MGD	1000 gallons
4500	GPM	1000 gallons	5000	GPM	1000 gallons	10.0	MGD	10000 gallons
4500	IGPM	1000 IMP. GAL.	5000	IGPM	1000 IMP. GAL.	350	LPS	10 CU. MTRS.
4500	GPM	0.01 AF	5000	GPM	100 CF	400	LPS	10 K LTRS.
4500	GPM	100 CF	14.0	CFS	100 CF			
10.0	CFS	100 CF	300	LPS	10 CU. MTRS.			
10.0	CF	0.01 AF						
7.5	MGD	1000 gallons						
250	LPS	10000 Liters						
250	LPS	10 CU. MTRS.						

18"			20"			24"		
Full Scale Indication		Registration	Full Scale Indication		Registration	Full Scale Indication		Registration
5000	GPM	1000 gallons	6000	GPM	1000 gallons	10000	GPM	10000 gallons
5000	IGPM	1000 IMP. GAL.	6000	IGPM	1000 IMP. GAL.	10000	IGPM	10000 IMP. GAL.
5000	GPM	100 CF	6000	GPM	10000 gallons	10000	GPM	0.01 AF
6000	GPM	100 CF	7500	GPM	10000 gallons	10000	GPM	100 CF
14.0	CFS	1000 CF	10000	GPM	10000 gallons	15000	GPM	10000 gallons
7.5	MGD	1000 gallons	10000	IGPM	10000 gallons	15000	IGPM	10000 IMP. GAL.
300	KOS	19 CU. MTRS.	10000	GPM	0.01 AF	17000	GPM	10000 gallons
10000	GPM	10000 gallons	10000	GPM	100 CF	17000	IGPM	10000 IMP. GAL.
10000	IGPM	10000 IMP. GAL.	15.0	CFS	100 CF	18.0	CFS	100 CF
10000	GPM	0.01 AF	15.0	CFS	0.01 AF	18.0	CFS	1000 CF
10000	GPM	100 CF	18.0	CFS	100 CF	18.0	CFS	0.01 AF
18.0	CFS	100 CF	18.0	CFS	1000 CF	20.0	CFS	1000 CF
18.0	CFS	1000 CF	18.0	CFS	0.01 AF	20.0	CFS	0.01 AF
18.0	CFS	0.01 AF	20.0	CFS	1000 CF	25.0	CFS	1000 CF
20.0	CFS	1000 CF	20.0	CFS	0.01 AF	25.0	CFS	0.01 AF
20.0	CFS	0.01 AF	25.0	CFS	1000 CF	30.0	CFS	1000 CF
25.0	CFS	1000 CF	25.0	CFS	0.01 AF	34.0	CFS	0.01 AF
25.0	CFS	0.01 AF	10.0	MGD	1000 gallons	15.0	MGD	1000 gallons
15.0	MGD	1000 gallons	10.0	MGD	10000 gallons	15.0	MGD	10000 gallons
15.0	MGD	10000 gallons	10.0	MGD	10000 gallons	20.0	MGD	10000 gallons
750	LPS	10 CU. MTRS.	15.0	MGD	1000 gallons	30.0	MGD	10000 gallons
			15.0	MGD	10000 gallons	750	LPS	10 CU. MTRS.
			350	LPS	10 CU. MTRS.	1000	LPS	100 CU. MTRS.
			400	LPS	10 K LTRS.	1500	LPS	100 K LTRS.
			750	LPS	10 CU. MTRS.			

30"				36"				42"			
Full Scale Indication		Registration		Full Scale Indication		Registration		Full Scale Indication		Registration	
15000	GPM	10000	gallons	17000	GPM	10000	gallons	25000	GPM	10000	gallons
15000	IGPM	10000	IMP. GAL.	17000	IGPM	10000	IMP. GAL.	25000	IGPM	10000	IMP. GAL.
17000	GPM	10000	gallons	25000	GPM	10000	gallons	35000	GPM	10000	gallons
17000	IGPM	10000	IMP. GAL.	25000	IGPM	10000	IMP. GAL.	35000	IGPM	10000	IMP. GAL.
25000	GPM	10000	gallons	35000	GPM	10000	gallons	45000	GPM	10000	gallons
15000	IGPM	10000	IMP. GAL.	35000	IGPM	10000	IMP. GAL.	45000	IGPM	10000	IMP. GAL.
30.0	CFS	1000	CF	50.0	CFS	1000	CF	50.0	CFS	1000	CF
34.0	CFS	0.01	AF	50.0	CFS	0.01	AF	50.0	CFS	0.01	AF
50.0	CFS	1000	CF	75.0	CFS	0.01	AF	75.0	CFS	0.1	AF
50.0	CFS	0.01	AF	30.0	MGD	10000	gallons	100	CFS	1000	CF
20.0	MGD	10000	gallons	40.0	MGD	10000	gallons	40.0	MGD	10000	gallons
30.0	MGD	10000	gallons	60.0	MGD	10000	gallons	60.0	MGD	10000	gallons
40.0	MGD	10000	gallons	1500	LPS	100	K LTRS.	75.0	MGD	10000	gallons
1000	LPS	100	CU. MTRS.	2000	LPS	100	CU. MTRS.	2000	LPS	100	CU. MTRS.
1500	LPS	100	K LTRS.					5000	LPS	100	CU. MTRS.
2000	LPS	100	CU. MTRS.								

48"				54"				60"			
Full Scale Indication		Registration		Full Scale Indication		Registration		Full Scale Indication		Registration	
35000	GPM	10000	gallons	40000	GPM	10000	gallons	45000	GPM	10000	gallons
35000	IGPM	10000	IMP. GAL.	40000	IGPM	10000	IMP. GAL.	45000	IGPM	10000	IMP. GAL.
45000	GPM	10000	gallons	75.0	CFS	1000	CF	60000	GPM	10000	gallons
45000	IGPM	10000	gallons	75.0	CFS	0.1	AF	60000	IGPM	10000	IMP. GAL.
75.0	CFS	0.1	AF	75.0	MGD	10000	gallons	75000	GPM	10000	gallons
100	CFS	1000	CF	3000	LPS	100	CU. MTRS.	75000	IGPM	10000	IMP. GAL.
60.0	MGD	10000	gallons					100	CFS	10000	CF
75.0	MGD	10000	gallons					150	CFS	10000	CF
2000	LPS	100	CU. MTRS.					150	CFS	0.01	AF
5000	LPS	100	CU. MTRS.					75.0	MGD	10000	gallons
								100	MGD	10000	gallons
								5000	LPS	100	CU. MTRS.

66" and 72"			
Full Scale Indication		Registration	
60000	GPM	10000	gallons
60000	IGPM	10000	IMP. GAL.
75000	GPM	10000	gallons
75000	IGPM	10000	IMP. GAL.