

Low Water Cut-Offs Combination Low Water Cut-Off/Pump Controllers for Steam Boilers (cont.)

Series 157S Low Water Cut-Off/Pump Controllers

- For residential, commercial and industrial low or high pressure boiler applications
- For boilers of any steaming capacity
- Monel bellows provides corrosion resistance
- Float chamber with integral water column provided
- Snap action switches for high temperature service
 - 1 Single pole, single throw switch for pump control
 - 1 Single pole, double throw switch for low water cut-off and alarm actuation
- Optional features
 - Manual reset
 - Integral conductance probes for additional levels and greater operating differential - Model 157S-RBP-MD
 - 1" or 1 1/4" (25-32mm) NPT equalizing tappings
 - 1/2" or 3/4" (15-20mm) NPT tappings for gauge glass/tri-cock installations
 - BSPT threads
- Maximum pressure 150 psi (10.5 kg/cm²)

Model 157S-MD

Maximum differential operation

- Prevents nuisance burner shutdowns in low pressure applications
- Maximum operating pressure 50 psi (3.5 kg/cm²)

Electrical Ratings

Voltage	Pump Circuit Rating (Amperes)		Pilot Duty
	Full Load	Locked Rotor	
120 VAC	7.4	44.4	345 VA at 120 or 240 VAC
240 VAC	3.7	22.2	

Alarm Circuit Rating (Amperes)	
Voltage	Amps
120 VAC	1
240 VAC	1/2

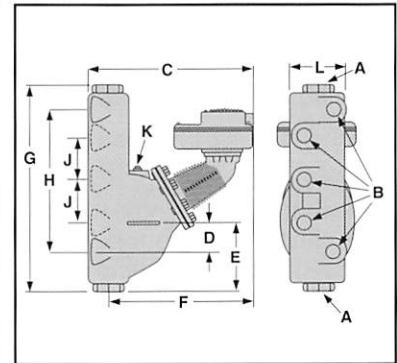
Dimensions, in. (mm)

Model	A NPT	B NPT	C	D	E	F	G	H	J	K NPT	L
157S	1 (25)	1/2 (15)	13 ⁹ / ₁₆ (345)	2 ⁵ / ₁₆ (59)	4 ¹⁵ / ₁₆ (125)	11 ³ / ₄ (298)	16 (406)	11 ¹ / ₂ (292)	3 ¹ / ₂ (89)	3/4 (20)	5 ⁷ / ₈ (149)
157S-A	1 1/4 (32)	3/4 (20)	13 ⁹ / ₁₆ (345)	2 ⁵ / ₁₆ (59)	4 ¹⁵ / ₁₆ (125)	11 ³ / ₄ (298)	16 (406)	11 ¹ / ₂ (292)	3 ¹ / ₂ (89)	3/4 (20)	5 ⁷ / ₈ (149)
157S-R	1 (25)	1/2 (15)	13 ⁹ / ₁₆ (345)	2 1/4 (57)	5 ⁷ / ₈ (149)	11 ³ / ₄ (298)	17 (432)	11 ¹ / ₂ (292)	3 ¹ / ₂ (89)	3/4 (20)	6 1/4 (159)
157S-RL	1 1/4 (32)	1/2 (15)	13 ⁹ / ₁₆ (345)	3 1/2 (89)	5 ⁷ / ₈ (149)	11 ³ / ₄ (298)	17 (432)	12 3/4 (324)	3 ¹ / ₂ (89)	3/4 (20)	6 1/4 (159)
157S-RBP-MD	1 (25)	1/2 (15)	13 ⁹ / ₁₆ (345)	2 1/4 (57)	5 ⁷ / ₈ (149)	11 ³ / ₄ (298)	17 (432)	11 ¹ / ₂ (292)	3 ¹ / ₂ (89)	N/A	12 3/4 (324)

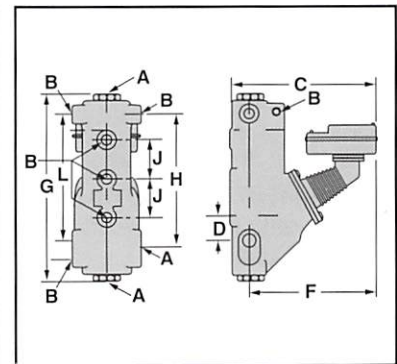
with
MECURY FREE
Snap-Action Switches



Series 157S



Series 157S-RBP-MD



Ordering Information

Model Number	Part Number	Description	Weight lbs. (kg)
157S	173502	150S low water cut-off w/water column	39.7 (18.0)
157S-MD	173603	157S w/maximum differential	39.7 (18.0)
157S-A	173702	157S w/alternate tappings	39.5 (17.9)
157S-A-M	173802	157S-A w/manual reset	39.5 (17.9)
157S-M	175402	157S w/manual reset	39.7 (18.0)
157S-M-MD	175412	157S-M w/maximum differential	39.7 (18.0)
157S-R	176220	157S w/alternate tappings	42.0 (19.0)
157S-R-M	177306	157S-R w/manual reset	42.0 (19.0)
157S-RBP-MD	176503	157S w/2 integral conductance probes	51.0 (23.1)
157S-RL	176902	157S w/alternate tappings	42.0 (19.0)
157S-RL-M	177006	157S-RL w/manual reset	42.0 (19.0)

Low Water Cut-Offs

Combination Low Water Cut-Off/Pump Controllers for Steam Boilers (cont.)

Series 150



Low Water Cut-Off/Pump Controllers

- For commercial and industrial low or high pressure boiler applications
- For boilers of any steaming capacity
- Monel bellows provides corrosion resistance
- Mercury switches for high temperature service
 - 1 Single pole, single throw switch for pump control
 - 1 Single pole, double throw switch for low water cut-off and alarm actuation
- Optional features
 - Manual reset
 - 2 Single pole, single throw switches
 - 2 Single pole, double throw switches
 - Float block
 - BSPT threads
- Maximum pressure 150 psi (10.5 kg/cm²)

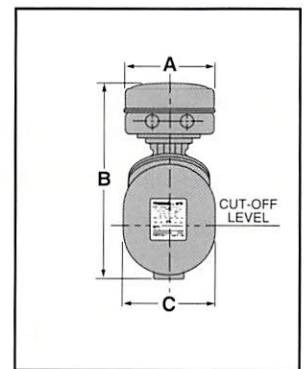
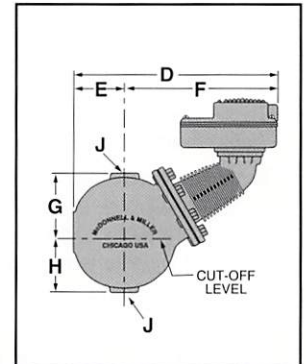
Model 150-MD

Maximum differential operation

- Prevents nuisance burner shutdowns in **low pressure** applications
- Maximum operating pressure 50 psi (3.5 kg/cm²)



Series 150



Electrical Ratings

Voltage	Pump Circuit Rating (Amperes)		Pilot Duty
	Full Load	Locked Rotor	
120 VAC	7.4	44.4	345 VA at 120 or 240 VAC
240 VAC	3.7	22.2	

Alarm Circuit Rating (Amperes)	
Voltage	Amps
120 VAC	1
240 VAC	1/2

Ordering Information

Model Number	Part Number	Description	Weight lbs. (kg)
150	171700	Combination low water cut-off/pump controller	24.7 (11.2)
150-B	171900	150 w/float block	24.7 (11.2)
150-B-M	172100	150-B w/manual reset	24.7 (11.2)
150-J	172600	150 w/BSPT threads	24.7 (11.2)
150-MD	171800	150 w/maximum differential	24.7 (11.2)
150-M-MD	172700	150 w/manual reset	24.7 (11.2)
150-M-MD	172800	150-M w/maximum differential	24.7 (11.2)
150-J-M	172900	150-M w/BSPT threads	24.7 (11.2)
158	178400	150 w/2 SPDT switches	26.3 (11.9)
158-M	178500	158 w/manual reset	27.3 (12.4)
159	178800	150 w/2 SPST switches	26.0 (11.8)

Dimensions, in. (mm)

A	B	C	D	
5 ⁷ / ₈ (149)	12 ¹⁷ / ₁₆ (316)	6 (152)	13 ¹ / ₄ (337)	
E	F	G	H	J
3 ⁵ / ₁₆ (84)	9 ¹⁵ / ₁₆ (252)	4 ¹ / ₈ (105)	3 ⁷ / ₁₆ (87)	1 (25) NPT

Low Water Cut-Offs Combination Low Water Cut-Off/Pump Controllers for Steam Boilers (cont.)

Series 157

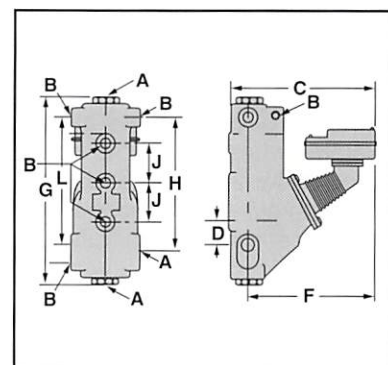
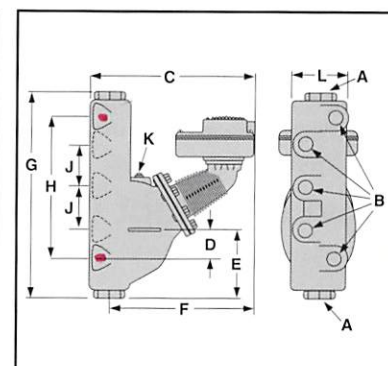
Low Water Cut-Off/Pump Controllers

- For residential, commercial and industrial low or high pressure boiler applications
- For boilers of any steaming capacity
- Monel bellows provides corrosion resistance
- Float chamber with integral water column provided
- Mercury switches for high temperature service
 - 1 Single pole, single throw switch for pump control
 - 1 Single pole, double throw switch for low water cut-off and alarm actuation
- Optional features
 - Manual reset
 - Integral conductance probes for additional levels and greater operating differential-Model 157-RPB-MD
 - 1" or 1¼" (25-32mm) NPT equalizing tappings
 - ½" or ¾" (15-20mm) NPT tappings for gauge glass/tri-cock installations
 - BSPT threads
- Maximum pressure 150 psi (10.5 kg/cm²)

Model 157-MD

Maximum differential operation

- Prevents nuisance burner shutdowns in **low pressure** applications
- Maximum operating pressure 50 psi (3.5 kg/cm²)



Electrical Ratings

Voltage	Pump Circuit Rating (Amperes)		Pilot Duty
	Full Load	Locked Rotor	
120 VAC	7.4	44.4	345 VA at 120 or 240 VAC
240 VAC	3.7	22.2	

Alarm Circuit Rating (Amperes)	
Voltage	Amps
120 VAC	1
240 VAC	1/2

Ordering Information

Model Number	Part Number	Description	Weight lbs. (kg)
157	173500	150 low water cut-off w/water column	39.7 (18.0)
157-MD	173600	157 w/maximum differential	39.7 (18.0)
157-A	173700	157 w/alternate tappings	39.5 (17.9)
157-A-M	173800	157-A w/manual reset	39.5 (17.9)
157-M	175400	157 w/manual reset	39.7 (18.0)
157-M-MD	175410	157-M w/maximum differential	39.7 (18.0)
157-R	176200	157 w/alternate tappings	42.0 (19.0)
157-R-M	177300	157-R w/manual reset	42.0 (19.0)
157-RPB-MD	176501	157 w/2 integral conductance probes	51.0 (23.1)
157-RL	176900	157 w/alternate tappings	42.0 (19.0)
157-RL-M	177000	157-RL w/manual reset	42.0 (19.0)

Dimensions, in. (mm)

Model	A NPT	B NPT	C	D	E	F	G	H	J	K NPT	L
157	1 (25)	½ (15)	13 ⁹ / ₁₆ (345)	2 ⁵ / ₁₆ (59)	4 ¹⁵ / ₁₆ (125)	11 ³ / ₄ (298)	16 (406)	11½ (292)	3½ (89)	¾ (20)	5 ⁷ / ₈ (149)
157-A	1¼ (32)	¾ (20)	13 ⁹ / ₁₆ (345)	2 ⁵ / ₁₆ (59)	4 ¹⁵ / ₁₆ (125)	11 ³ / ₄ (298)	16 (406)	11½ (292)	3½ (89)	¾ (20)	5 ⁷ / ₈ (149)
157-R	1 (25)	½ (15)	13 ⁹ / ₁₆ (345)	2¼ (57)	5 ⁷ / ₈ (149)	11 ³ / ₄ (298)	17 (432)	11½ (292)	3½ (89)	¾ (20)	6¼ (159)
157-RL	1¼ (32)	½ (15)	13 ⁹ / ₁₆ (345)	3½ (89)	5 ⁷ / ₈ (149)	11 ³ / ₄ (298)	17 (432)	12 ³ / ₄ (324)	3½ (89)	¾ (20)	6¼ (159)
157-RPB-MD	1 (25)	1/2 (15)	13 ⁹ / ₁₆ (345)	2¼ (57)	5 ⁷ / ₈ (149)	11 ³ / ₄ (298)	17 (432)	11½ (292)	3½ (89)	N/A	12 ³ / ₄ (324)

Water Feeders and Combination Water Feeders/Low Water Cut-Offs

McDonnell & Miller Boiler Water Feeders and Feeder Cut-Off Combinations are used to provide automatic operation, and to safeguard steam and hot water boilers against the hazards of a low water condition.

A feeder cut-off combination mechanically adds water as needed to maintain the required minimum water level, and electrically stops the firing device in case of an emergency.

How to Select Controls

STEAM BOILERS

Steam Heating Boilers are classified as boilers in closed heating systems where all condensate is returned to the boiler. Best recommendation for all automatically fired boilers is a feeder cut-off combination. It adds water as needed to maintain a safe operating level, and stands by to interrupt circuit to burner if water level drops into emergency zone.

Steam Process Boilers are classified as boilers in systems where not all the condensate is returned, and some make-up water is needed. A separate feeder and separate cut-off are recommended, so operating levels can be set for the wider differential required in such service.

Selection of the correct feeder cut-off combination, or feeder depends upon:

1. Maximum boiler pressure.
2. Differential between water supply pressure and the pressure setting of the steam safety valve.
3. Boiler size

See chart opposite page.

HOT WATER BOILERS

Best recommendation for all automatically fired boilers is a feeder cut-off combination. It adds water if needed to match the discharge capacity of the relief valve, and stands by to interrupt circuit to burner if water level drops into emergency zone.

Selection of the correct feeder cut-off combination, or feeder depends upon:

1. Maximum boiler pressure.
2. Differential between water supply pressure and the pressure setting of the safety relief valve.
3. Boiler size

See chart opposite page.