

## Low Water Cut-Offs – Mechanical Combination Low Water Cut-Off/Pump Controllers for Steam Boilers

### Series 193 Low Water Cut-Off/Pump Controllers

- For commercial and industrial low or high pressure steam boilers
- Maintains consistent water level regardless of pressure
- Water column with integral tapplings for gauge glass and tri-cock installations
- For boilers of any steaming capacity
- No. 5 Switch included
- Magnetic repulsion eliminates need for bellows
- Optional features
  - Manual reset
- 7B switch (135ohm proportional control signal) to maintain constant boiler water level
- 1" NPT connections
- Maximum pressure 150 psi (10.5 kg/cm<sup>2</sup>)

### Electrical Ratings

345 VA at 120 or 240 VAC

### Dimensions, in. (mm)

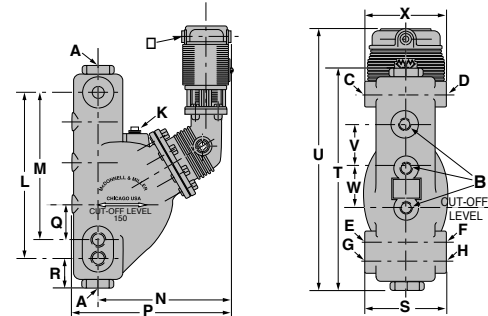
Model	A NPT	B NPT	C NPT	D NPT	E NPT	F NPT	G NPT	H NPT	J NPT	K NPT
193	1	1/2	1/2	1/2	–	–	1/2	1/2	1/2	3/4
193-A	1	1/2	1/2	1/2	1/2	1/2	–	–	1/2	3/4
193-B	1 1/4	3/4	3/4	3/4	–	–	3/4	3/4	1/2	3/4
193-D	1	1/2	1	1/2	1	1/2	–	–	1/2	3/4
193-G	1	1/2	–	1/2	1	1/2	–	–	1/2	3/4

Model	L	M	N	P	Q	R
193	12 3/4 (324)	–	10 13/16 (274)	13 (330)	–	2 7/8 (73)
193-A	–	11 1/2 (292)	10 13/16 (274)	13 (330)	2 1/4 (57)	–
193-B	12 3/4 (324)	–	10 13/16 (274)	13 (330)	–	2 7/8 (73)
193-D	–	11 1/2 (292)	10 13/16 (274)	13 (330)	2 1/4 (57)	–
193-G	–	11 1/2 (292)	10 13/16 (274)	13 (330)	2 1/4 (57)	–

Model	S	T	U	V	W	X
193	6 3/4 (171.4)	17 1/2 (445)	20 1/2 (521)	3 1/2 (89)	3 1/2 (89)	6 (152)
193-A	6 3/4 (171.4)	17 1/2 (445)	20 1/2 (521)	3 1/2 (89)	3 1/2 (89)	6 (152)
193-B	6 3/4 (171.4)	17 1/2 (445)	20 1/2 (521)	3 1/2 (89)	3 1/2 (89)	6 (152)
193-D	6 3/4 (171.4)	17 1/2 (445)	20 1/2 (521)	3 1/2 (89)	3 1/2 (89)	6 (152)
193-G	6 3/4 (171.4)	17 1/2 (445)	20 1/2 (521)	3 1/2 (89)	3 1/2 (89)	6 (152)



SERIES 193



### Ordering Information

Model Number	Part Number	Description	Weight lbs. (kg)
193	163400	Combination low water cut-off/pump controller w/No. 5 switch	52.5 (23.8)
193-A	163500	193 w/alternate tapplings	52.5 (23.8)
193-A-7B	164500	193-A w/No. 7B switch	52.5 (23.8)
193-A-7BM	164600	193-A-7B w/manual reset	52.5 (23.8)
193-A-M	164200	193-A w/manual reset	52.5 (23.8)
193-B	163600	193 w/alternate tapplings	52.5 (23.8)
193-B-M	164300	193-B w/manual reset	52.5 (23.8)
193-B-7B	164700	193-B w/No. 7B switch	52.5 (23.8)
193-D	163900	193 w/alternate tapplings	52.5 (23.8)
193-D-7B	163903	193-D w/No. 7B switch	52.5 (23.8)
193-M	164100	193 w/manual reset	52.5 (23.8)
193-7B	164400	193 w/No. 7B switch	52.5 (23.8)
193-7BM	164525	193-7B w/manual reset	52.5 (23.8)
193-D-M	163902	193-D w/manual reset	52.5 (23.8)
193-G	164760	193 w/alternate tapplings	52.5 (23.8)

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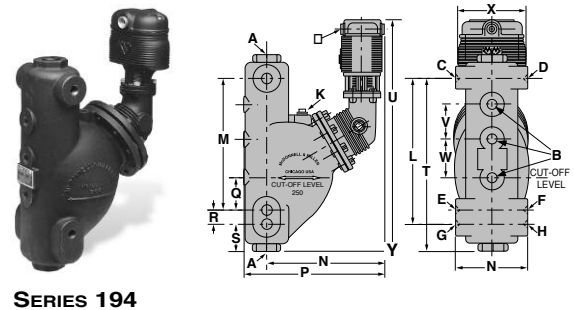
### Series 194

#### Low Water Cut-Off/Pump Controllers

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- Maintains consistent water level regardless of pressure
- For boilers of any steaming capacity
- Water column with integral tapplings for gauge glass and tri-cock installations
- No. 5 Switch included
- Magnetic repulsion eliminates need for bellows
- Optional features
  - Manual reset
- 7B switch (135 ohm proportional signal) control to maintain constant boiler water level
- 1¼" NPT connections
- Maximum pressure 250 psi (17.6 kg/cm<sup>2</sup>)
- Ten bolt flange

#### Electrical Ratings

345 VA at 120 or 240 VAC



#### Ordering Information

Model Number	Part Number	Description	Weight lbs. (kg)
194	166600	Combination low water cut-off/pump controller w/ Series 5 switch	72.0 (32.7)
194-A	166700	194 w/alternate tapplings	72.0 (32.7)
194-A-7B	167100	194-A w/ Series 7B switch	72.0 (32.7)
194-M	166900	194 w/manual reset	72.0 (32.7)
194-7B	167200	194 w/ Series 7B switch	72.0 (32.7)
194-7BM	167300	194-7B w/manual reset	72.0 (32.7)
194-B	166701	194 w/alternate tapplings	72.0 (32.7)

#### Dimensions, in. (mm)

Model	A NPT	B NPT	C NPT	D NPT	E NPT	F NPT	G NPT	H NPT	J NPT	K NPT
194	1¼	½	½	½	½	½	–	–	½	¾
194-A	1¼	½	½	½	–	–	½	½	½	¾
194-B	1¼	¾	¾	¾	–	–	¾	¾	½	¾

Model	L	M	N	P	Q	R	S
194	–	11 <sup>5</sup> / <sub>8</sub> (295)	6 <sup>3</sup> / <sub>4</sub> (171.4)	13 <sup>1</sup> / <sub>16</sub> (332)	2 <sup>13</sup> / <sub>16</sub> (71)	1¼ (32)	2 <sup>3</sup> / <sub>8</sub> (60)
194-A	12 <sup>7</sup> / <sub>8</sub> (327)	–	6 <sup>3</sup> / <sub>4</sub> (171.4)	13 <sup>1</sup> / <sub>16</sub> (332)	2 <sup>13</sup> / <sub>16</sub> (71)	1¼ (32)	2 <sup>3</sup> / <sub>8</sub> (60)
194-B	12 <sup>7</sup> / <sub>8</sub> (327)	–	6 <sup>3</sup> / <sub>4</sub> (171.4)	13 <sup>1</sup> / <sub>16</sub> (332)	2 <sup>13</sup> / <sub>16</sub> (71)	1¼ (32)	2 <sup>3</sup> / <sub>8</sub> (60)

Model	T	U	V	W	X	Y
194	17¼ (438)	20½ (521)	3 (76)	3 (76)	6 (152)	10 <sup>13</sup> / <sub>16</sub> (274)
194-A	17¼ (438)	20½ (521)	3 (76)	3 (76)	6 (152)	10 <sup>13</sup> / <sub>16</sub> (274)
194-B	17¼ (438)	20½ (521)	3 (76)	3 (76)	6 (152)	10 <sup>13</sup> / <sub>16</sub> (274)