Control Panels

Simplex Control Panels
Model E
Bulletin 1910

**Description:**
The Model E1 Simplex Pump Controller is a fully integrated control package for automatic pump motor sequencing, short-circuit & overload protection, and (optional) alarm annunciation required for a wide variety of pump applications. This model is specifically designed for applications using Condensate, Boiler Feed, Makeup, Sump/Sewage, Submersible, or Jockey pumps. Control panel construction is in accordance with applicable NEC codes and is built to the highest standards of quality control & workmanship. Three Types (Power Configurations) are available and all include the standard equipment outlined below.

**Table:**

<table>
<thead>
<tr>
<th>HP</th>
<th>Size I.D. Code No. (Ratings: Italic: HP Rated)</th>
<th>1 Ph Motors</th>
<th>3 Ph Motors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
<td></td>
<td>Q1</td>
<td>QB</td>
</tr>
<tr>
<td>1/3</td>
<td></td>
<td>T1</td>
<td>TB</td>
</tr>
<tr>
<td>1/4</td>
<td></td>
<td>AL</td>
<td>AB</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>C1</td>
<td>CB</td>
</tr>
<tr>
<td>1 1/2</td>
<td></td>
<td>D1</td>
<td>DB</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>E1</td>
<td>EB</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>F1</td>
<td>FB</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>G1</td>
<td>GB</td>
</tr>
<tr>
<td>7 1/2</td>
<td></td>
<td>H1</td>
<td>HB</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>J1</td>
<td>JG</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>K1</td>
<td>KG</td>
</tr>
<tr>
<td>20</td>
<td></td>
<td>L1</td>
<td>LG</td>
</tr>
<tr>
<td>25</td>
<td></td>
<td>M1</td>
<td>MG</td>
</tr>
<tr>
<td>30</td>
<td></td>
<td>N1</td>
<td>NG</td>
</tr>
<tr>
<td>40</td>
<td></td>
<td>P1</td>
<td>PG</td>
</tr>
<tr>
<td>50</td>
<td></td>
<td>R1</td>
<td>RG</td>
</tr>
<tr>
<td>60</td>
<td></td>
<td>S1</td>
<td>SG</td>
</tr>
</tbody>
</table>

**SEQUENCE NO.**

1. For pumps controlled by any remote pump On-Off device (contact)
2. For pump operation using On & Off submersible float switches
3. Same as above (Seq. 04) except for intrinsically-safe float operation
4. For Jockey Pumps; individual fixed-differential pressure switch & timer
5. For Sump-Sewage pumps with electrodes

**NOTES:**
1. Not Available with UL Listing
2. Flange-mtd. Disc. Handle (instead of Thru-door) is standard

**STANDARD EQUIPMENT:**
(1) NEMA 1 Enclosure
(1) Magnetic Starter
(2) Ambient-compen. Adj. OL relay
(1) HOA sw-NEMA 1
(1) Control Transformer
(1) Numbered terminal strip
(1) Custom wiring & field connection dwg.

**PLUS...**
Main disconnect or Circuit Breaker as indicated by TYPE

**WARNING:**
CANCER AND REPRODUCTIVE HARM - WWW.P65WARNINGS.CA.GOV
### Simplex Control Panels

**Model E**

**Bulletin 1910**

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**Control Panels**

<table>
<thead>
<tr>
<th>Option Number</th>
<th>General Panel-mounted Optional Equipment</th>
<th>Encl. is NEMA:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Pump RUN lights</td>
<td>1 1 or 12,3R,4</td>
</tr>
<tr>
<td>A6</td>
<td>Overload trip lights</td>
<td></td>
</tr>
<tr>
<td>A8</td>
<td>Power ON light</td>
<td></td>
</tr>
<tr>
<td>A14</td>
<td>High Level alarm light</td>
<td></td>
</tr>
<tr>
<td>A19</td>
<td>Low Level alarm light; incl. aux. relay</td>
<td></td>
</tr>
<tr>
<td>A22</td>
<td>Misc. alarm light (specify); incl. aux. relay</td>
<td></td>
</tr>
<tr>
<td>A27</td>
<td>Alarm Horn with Silence PB</td>
<td></td>
</tr>
<tr>
<td>A29</td>
<td>Alarm Horn with Silence-Test sw.</td>
<td></td>
</tr>
<tr>
<td>C1T</td>
<td>Oil tight HOA selectors (NEMA 1 HOA's are incl. in basic panel @ no extra charge)</td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>Test-Off-Auto selector</td>
<td></td>
</tr>
<tr>
<td>C4</td>
<td>Misc. or Test PB (specify)</td>
<td></td>
</tr>
<tr>
<td>B1</td>
<td>Hour meter 0-99999.0 non-resettable</td>
<td>SPEC</td>
</tr>
<tr>
<td>E1</td>
<td>High Level aux. relay (5A@115VAC dry ckt)</td>
<td>SAME</td>
</tr>
<tr>
<td>E2</td>
<td>Power Loss aux. relay (5A@115VAC dry ckt)</td>
<td>SAME</td>
</tr>
<tr>
<td>E4</td>
<td>Misc. aux. relay (10A@115VAC dry ckt)</td>
<td>SAME</td>
</tr>
<tr>
<td>F5</td>
<td>NEMA 12 Enclosure (See Note 1)</td>
<td></td>
</tr>
<tr>
<td>F6</td>
<td>NEMA 3R Enclosure (See Note 1)</td>
<td></td>
</tr>
<tr>
<td>F7</td>
<td>NEMA 4 Enclosure (See Note 1)</td>
<td></td>
</tr>
<tr>
<td>F8</td>
<td>NEMA 4X Enclosure (See Note 1)</td>
<td>SPEC</td>
</tr>
<tr>
<td>F9</td>
<td>Add &quot;dead-front&quot; inner door (See Note 1)</td>
<td>SAME</td>
</tr>
<tr>
<td>L1</td>
<td>Add UL Panel Label (UL 508-Listing &amp; Follow-up service)</td>
<td>5</td>
</tr>
</tbody>
</table>

1. For cover devices rated for NEMA 1 service. If cover mtd. devices are on an enclosure which is NEMA 12, 3R, 4, or 4X, (or full size devices are desired for appearance) add suffix "T" to Option No.

2. Items which are market "SAME" are identical regardless of enclosure NEMA Type (i.e. suffix "T" need not to be added). For items which are marked "SPEC" consult factory.

3. This Note is not applicable to Simplex E! Panels.

4. Commonly encountered options are BOLD UNDERLINED for easy reference.

5. UL Listing of panel having a particular combination of options may not be available. Always Consult Factory for Availability.

<table>
<thead>
<tr>
<th>Option Number</th>
<th>Options commonly found in Submersible Pump Panels</th>
<th>Encl. is NEMA:</th>
</tr>
</thead>
<tbody>
<tr>
<td>D9</td>
<td>Seal Leak light with Test PB’s (Reliance motor)</td>
<td>SAME</td>
</tr>
<tr>
<td>D10</td>
<td>Terminals to connect motor over temp switch</td>
<td></td>
</tr>
<tr>
<td>D12</td>
<td>Over temp. alarm light (auto reset)</td>
<td></td>
</tr>
<tr>
<td>D14</td>
<td>Over temp. light (Reset: motor/auto light/manual)</td>
<td></td>
</tr>
<tr>
<td>E33</td>
<td>Aux. (Pump OL trip) contacts for use with remote Model A13-05 type alarm panel</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Option Number</th>
<th>Options commonly found in Submersible Pump Panels</th>
<th>Alarm light:</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Phase monitor/motor shutdown relay</td>
<td>NEMA: 1 or Oil tight</td>
</tr>
<tr>
<td>H2</td>
<td>Lightning arrester</td>
<td></td>
</tr>
<tr>
<td>H3</td>
<td>Surge Capacitor</td>
<td></td>
</tr>
<tr>
<td>J1</td>
<td>Disch. Fail alarm; incl. timer, light, reset PB</td>
<td></td>
</tr>
<tr>
<td>J2</td>
<td>OFF float (submersible) anti-chatter timer</td>
<td>SAME</td>
</tr>
<tr>
<td>J4</td>
<td>Terminals to connect Redundant OFF float</td>
<td>SAME</td>
</tr>
<tr>
<td>J23</td>
<td>24V Float switch circuitry (Sequence 3 or 4)</td>
<td>SAME</td>
</tr>
</tbody>
</table>

**Number**

**Separately Mounted Controller Accessories (not included in Controller Part No. - Order sep.)**

| FS-3K         | Set of 3 suspension-type submersible floats with bracket | |
| FP-3K         | Set of 3 pipe-mtd. submersible floats with pipe support bracket | |
| R11-31        | Remote electrode sensing panel (1-compartment tank type) | |
| ES-5K         | Set of six (6) suspension-type electrode probe, holder & wire | |
| A11-01        | Single point High Level alarm remote panel with horn & light | |
| A13-05        | Fail safe (3-point) remote alarm annunciator panel; must be ordered with Controller; Controller must also include Options E1 & E2 | |

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1. For cover devices rated for NEMA 1 service. If cover mtd. devices are on an enclosure which is NEMA 12, 3R, 4, or 4X, (or full size devices are desired for appearance) add suffix "T" to Option No.

2. Items which are market "SAME" are identical regardless of enclosure NEMA Type (i.e. suffix "T" need not to be added). For items which are marked "SPEC" consult factory.

3. This Note is not applicable to Simplex E! Panels.

4. Commonly encountered options are BOLD UNDERLINED for easy reference.

5. UL Listing of panel having a particular combination of options may not be available. Always Consult Factory for Availability.
Duplex Control Panels
Model E
Bulletin 1910

Control Panels

HP | Size I.D. Code No. | Type F | Type C | Type G | Type D
---|-------------------|--------|--------|--------|--------
    | (Ratings: Italic: HP Rated) | (Main Disc./Motor fuses) | (Main Disc./Motor CB’s) | (Indiv. Fusible Disc.’s) | (Indiv. CB’s)
1 Ph Motors | 3 Ph Motors | 115v | 220v | 208v | 240v | 380v | 480v
1/4 | Q1 | Q2 | Q3 | Q4 | Type A
3/8 | T1 | T2 | T3 | T4 | Type B
1/2 | AL | A2 | A3 | A4 | Type C
3/4 | B1 | B2 | QB | Q4 | Type D

1 | C1 | C2 | C3 | C4 | Type E
1.5 | D1 | D2 | D3 | D4 | Type F
2 | E1 | E2 | E3 | E4 | Type G
3 | F1 | F2 | F3 | F4 | Type H
5 | G1 | G2 | G3 | G4 | Type I

71/2 | HB | H2 | H3 | H4 | Type J
10 | JG | J2 | J3 | J4 | Type K
15 | KG | K2 | K3 | K4 | Type L
20 | LG | L2 | L3 | L4 | Type M
25 | MG | M2 | M3 | M4 | Type N
30 | NG | N2 | N3 | N4 | Type O
40 | PG | P2 | P3 | P4 | Type P
50 | RG | R2 | R3 | R4 | Type Q
60 | SG | S2 | S3 | S4 | Type R

Seq. No. | Sequence of Operation
---|---
01 | For pumps controlled by mechanical alternator
02 | Lead-Lag operation with manual alternator
03 | Lead-Lag/automatic alternator (Non-Submersible)
04 | Lead-Lag/automatic alternator (Submersible floats)
05 | Same as Seq. 4 but with Intrinsically Safe float switch circuits
06 | Condenser water pumps (Changeover sequence)
07 | For Duplex Fuel Oil sets: Pump foil & automatic indexing
08 | Booster pumps with manual alternator
09 | Booster pumps with time clock alternator
10 | Booster pumps-PLC logic; incl. Press. sw’s, alarms, etc.
11 | Same as above (Seq. 10) but adds Low Syst. Press. sw.
12 | Same as above (Seq. 11) but adds 3-step sequencing
13 | Condenser water pumps-PLC logic (Changeover seq.)
14 | Sump/Sewage pumps with electrodes; fittings not incl.
15 | Submersible pumps-PLC logic (Consult Factory for Opt’s)
16 | Bubbler System Level sensing - for Wet Well applications
18 | Roof Fill Pumps - using mechanical floats
20 | Roof Fill Pumps - using Electrode probes (Remote electrode panel & probes added separately; See Page 4)

Commonly used are BOLD UNDERLINED:
1. Add pressure switch, timers, etc. from Options Page 4.
2. Single (common) Flange-mtd. Disc. Handle (instead of Thru-door) is std.

STD Equipment
(1) NEMA 1 Enclosure
(1) Magnetic Starter
(1) Ambient-compens. Adj. OL relay
(1) HOA sw’s-NEMA 1
(1) Control Transformer

(1) Numbered terminal strip
(1) Custom wiring & field connection dwg.

PLUS...
Main disconnect or Circuit Breaker as indicated by TYPE

Explanation of Model Numbering

E2 | F | 4 | D2 | - | A14TA27
Duplex
Panel TYPE
(See above table)
Sequence of Operation
(See table at left on this page)
Size ID Code (HP & Voltage)
(See above table)
Options (enter sequentially)(See Page 4)

Panel in above example includes: Common Main Disconnect, 2 sets motor fuses, 1.5HP/240v 3Ph, with automatic alternator for use with submersible floats; includes Optional high level light (Oil tight) with alarm horn & silence PB.
# Control Panels

## Duplex Control Panels

### Model E

#### Bulletin 1910

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### Option Number | General Panel-mounted Optional Equipment | Encl. is NEMA: 1 1 or 12,3R,4
--- | --- | ---
A1 | Pump RUN lights |  
A6 | Overload trip lights |  
A8 | Power ON light |  
A14 | High Level alarm light |  
A19 | Low Level alarm light; incl. aux. relay |  
A22 | Misc. alarm light (specify); incl. aux. relay |  
A27 | Alarm Horn with Silence PB |  
A29 | Alarm Horn with Silence-Test sw. |  
C1T | Oil tight HOA selectors (NEMA 1 HOA's are incl. in basic panel @ no extra charge) |  
C2 | Test-Off-Auto selector |  
C4 | Misc. or Test PB (specify) |  
B1 | Hour meter 0-99999.0 non-resettable | SPEC  
E1 | High Level aux. relay (5A@115VAC dry ckt) | SAME  
E2 | Power Loss aux. relay (5A@115VAC dry ckt) | SAME  
E4 | Misc. aux. relay (10A@115VAC dry ckt) | SAME  
F5 | NEMA 12 Enclosure (See Note 1) |  
F6 | NEMA 3R Enclosure (See Note 1) |  
F7 | NEMA 4 Enclosure (See Note 1) |  
F8 | NEMA 4X Enclosure (See Note 1) | SPEC  
F9 | Add "dead-front" inner door (See Note 1) | SAME  
L1 | Add UL Panel Label (UL 508-Listing & Follow-up service) |  

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### Option Number | Options commonly found in Submersible Pump Panels | Encl. is NEMA: 1 1 or 12,3R,4
--- | --- | ---
D8 | Seal Leak lights for pumps utilizing seal float sensor with dry aux. ckt; instead of probes |  
D9 | Seal Leak light with Test PB’s (Reliance motors) |  
D10 | Terminals to connect motor over temp switch | SAME  
D12 | Over temp. alarm light (auto reset) |  
D14 | Over temp. light (Reset: motor/auto light/manual) |  
E33 | Aux. (Pump OL trip) contacts for use with remote Model A13-05 type alarm panel | SAME  

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### Option Number | Options commonly found in Submersible Pump Panels | Alarm light: NEMA: 1 1 or Oil tight
--- | --- | ---
H1 | Phase monitor/motor shutdown relay | 3  
H2 | Lightning arrester | 3  
H3 | Surge Capacitor | 3  
J1 | Disch. Fail alarm; incl. timer, light, reset PB |  
J2 | OFF float (submersible) anti-chatter timer | SAME  
J3 | Lag pump ON delay timer | SAME  
J4 | Terminals to connect Redundant OFF float | SAME  
J18 | Add 1-AUTO-2 alternator override switch |  
J23 | 24V Float switch circuitry (Sequence 3 or 4) | SAME  

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### Separately Mounted Controller Accessories (not included in Controller Part No. - Order sep.)

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<tr>
<th>Number</th>
<th>Separately Mounted Controller Accessories</th>
</tr>
</thead>
<tbody>
<tr>
<td>FS-3K</td>
<td>Set of 3 suspension-type submersible floats with bracket</td>
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<tr>
<td>FP-3K</td>
<td>Set of 3 pipe-mtd. submersible floats with pipe support bracket</td>
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<tr>
<td>R11-31</td>
<td>Remote electrode sensing panel (1-compartment tank type)</td>
</tr>
<tr>
<td>ES-5K</td>
<td>Set of six (6) suspension-type electrode probe, holder &amp; wire</td>
</tr>
<tr>
<td>A11-01</td>
<td>Single point High Level alarm remote panel with horn &amp; light</td>
</tr>
<tr>
<td>A13-05</td>
<td>Fail safe (3-point) remote alarm annunciator panel; must be ordered with Controller; Controller must also include Options E1 &amp; E2</td>
</tr>
</tbody>
</table>

---

1. For cover devices rated for NEMA 1 service. If cover mtd. devices are on an enclosure which is NEMA 12, 3R, 4, or 4X, (or full size devices are desired for appearance) add suffix "T" to Option No.

2. Items which are marked "SAME" are identical regardless of enclosure NEMA Type (i.e. suffix "T" need not to be added). For items which are marked "SPEC" consult factory.

3. 1 (ONE) unit required for panels which are for applications having separate (isolated) incoming electrical feeds (Types G, D, or U), a total quantity of 2 (TWO) units are required.

4. Commonly encountered options are **BOLD UNDERLINED** for easy reference.

5. UL Listing of panel having a particular combination of options may not be available. Always Consult Factory for Availability. See Bulletin ED901-01A for details Options Specifications.