

Product Family Overview



Irrigation Pump Panel

Product Description

Cutler-Hammer® Irrigation Pump Controllers, from Eaton’s electrical business, are combination starters designed to meet the requirements of the agricultural industry. The enclosure is UL Type 3R rated to provide weathertight protection and is available in two sizes. Irrigation application specific accessories and modifications are available to fit the customer’s requirements.

The Irrigation Pump Panels use Freedom Series Motor Starting Technology to control motors up to 100 hp @ 460V. These controllers have two styles of overload protection available, interchangeable heater and solid-state overload (SSOL).

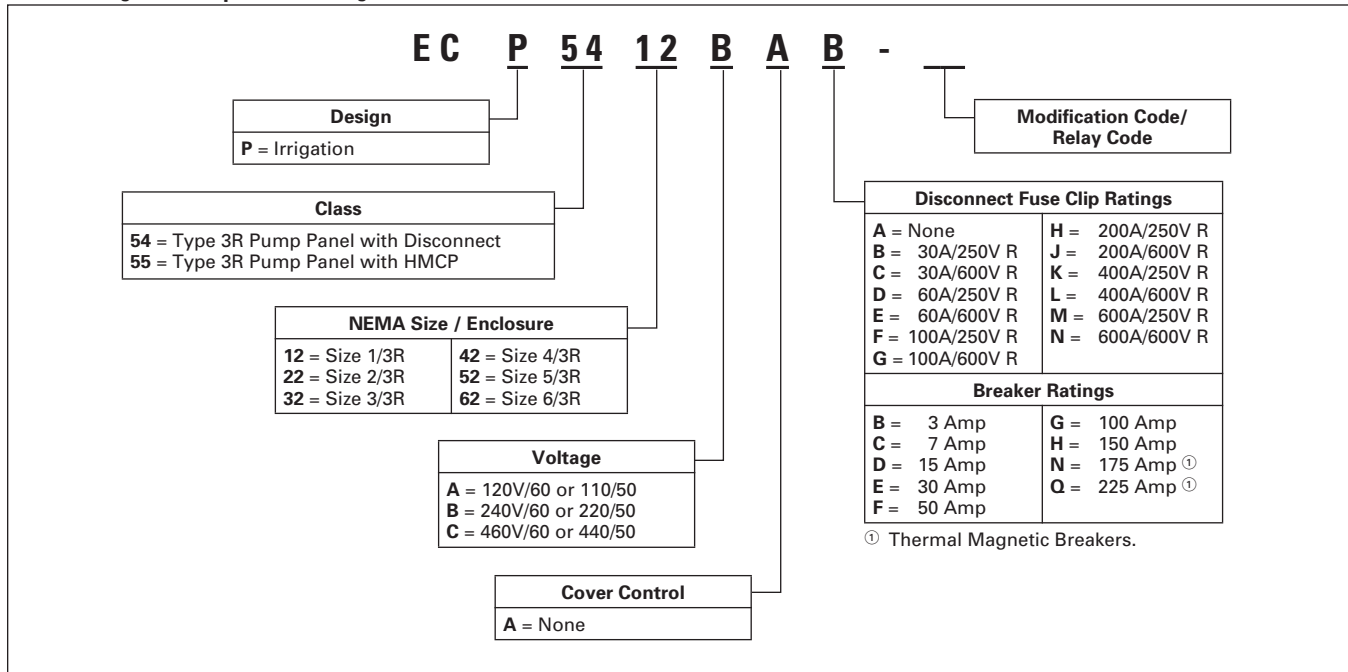
- The interchangeable heater overload (C306) utilizes individual heater packs to allow customers the ability to use various heater styles.
- The solid-state overload relay provides enhanced protection and adjustment ranges as compared to bimetallic overload relays. Trip Class 10 and 20 are available, along with a very wide trip current range to make setup very easy.

Standards and Certifications

- UL Listed
- cUL Listed (indicates appropriate CSA Standard investigation)
- ABS Type Approval

Catalog Number Selection

Table 17. Irrigation Pump Panel Catalog Number Selection



Product Selection

Standard ECP54 controllers have a HAND/OFF/AUTO selector switch and START pushbutton mounted on the enclosure and are wired as illustrated in Figure 7.

Table 18. Class ECP54 — Freedom Fusible Irrigation Pump Panels with Interchangeable Heater Overload

Motor Voltage ①	Max. hp 50/60 Hz	NEMA Size	Fuse Clip Rating ②		Standard Width
			Amperes	Volts	Catalog Number
230 460 —	7-1/2 10 —	1	30 30 Not Installed	250 600 Not Installed	ECP5412BAB ECP5412CAC ECP5412AAA
230 460 —	15 25 —	2	60 60 Not Installed	250 600 Not Installed	ECP5422BAD ECP5422CAE ECP5422AAA
230 460 —	30 50 —	3	100 100 Not Installed	250 600 Not Installed	ECP5432BAF ECP5432CAG ECP5432AAA

Starters do not include heater packs. Select 1 carton of 3 heater packs.
Heater pack selection, Page 72.

① Dual element fuse ratings.

② Class R fuse clips.

For Other Volts and Hertz Applications

For other than listed volts and hertz, select required controller by Catalog Number and replace the magnet coil alpha designation, 8th digit in Catalog Number with proper Code Suffix from Table 19.

Example: For 600V 60 Hz coil, change ECP5412BAB to ECP5412DAB

Table 19. Coil Voltage

Coil Volts and Hertz	Suffix Code
120/60 or 110/50	A
240/60 or 220/50	B
480/60 or 440/50	C
600/60 or 550/50	D
208/60	E

Fuse Clips

Table 20. C351 — Fuse Clip Selection — 3-Pole (3 Fuses)

NEMA Size	Motor Voltage	Fuse Clip Rating		Fuse Clip Kit for Field Installation in Non-fusible Starter	
		Amperes	Volts	For Non-rejection Type Fuses	For use with "R" Rejection Type Fuses
				Catalog Number	Catalog Number
1	200/230 460 – 575	30	250	C351KC21	C351KC21R
		30	600	C351KD22-61	C351KD22-61R
2	200 230 460 – 575	60	250	C351KD22-61	C351KD22-61R
		60	250	C351KD22-61	C351KD22-61R
		60	600	C351KD62	C351KD62R
3	200 230 460 – 575	100	250	C351KE23-63	C351KE23-63 ①
		100	250	C351KE23-63	C351KE23-63 ①
		100	600	C351KE23-63	C351KE23-63 ①

① Fuse clip "R" rejection members for use with Class R fuses are supplied loose both in Fuse Clip Kits and when fuse clips are factory installed.

Pump Panels with Solid-State Overload

Product Selection

Table 21. Class ECP54 — Freedom Fusible Irrigation Pump Panels with Solid-State Overload Protection, Manual Reset Button and Class 20 Trip ^①

Motor Voltage	Max. hp	NEMA Size	Fuse Clip Amperes	Volts	Trip Range	Catalog Number
240V	1	1	30	250	1.6 – 5.0	ECP5412BAB-R50/G84
	3	1	30	250	3.7 – 12	ECP5412BAB-R50/G85
	7-1/2	1	30	250	12 – 32	ECP5412BAB-R50/G86
	10	2	60	250	12 – 37	ECP5422BAD-R50/G87
	15	2	60	250	14 – 45	ECP5422BAD-R50/G88
480V	25	3	100	250	26 – 85	ECP5432BAF-R50/G89
	1	1	30	600	1.0 – 2.9	ECP5412CAC-R50/G83
	2	1	30	600	1.6 – 5.0	ECP5412CAC-R50/G84
	5	1	30	600	3.7 – 12	ECP5412CAC-R50/G85
	10	1	30	600	12 – 32	ECP5412CAC-R50/G86
	20	2	60	600	12 – 37	ECP5422CAE-R50/G87
	25	2	60	600	14 – 45	ECP5422CAE-R50/G88
50	3	100	600	26 – 85	ECP5432CAG-R50/G89	

^① Motor FLA based on NEC table. For Class 10, Automatic Reset and other trip ranges see Table 24.

Table 22. Class ECP55 — Freedom Breaker Irrigation Pump Panels with Solid-State Overload Protection, Manual Reset Button and Class 20 Trip ^②

Motor Voltage	Max. hp	NEMA Size	Breaker Rating	Trip Range	Catalog Number
240V	1	1	7	1.6 – 5.0	ECP5512BAC-R50/G84
	3	1	15	3.7 – 12	ECP5512BAD-R50/G85
	7-1/2	1	30	12 – 32	ECP5512BAE-R50/G86
	10	2	50	12 – 37	ECP5522BAF-R50/G87
	15	2	50	14 – 45	ECP5522BAF-R50/G88
480V	25	3	100	26 – 85	ECP5532BAG-R50/G89
	50	4	150	57 – 180	ECP5542BAQ-R50/G92
	1	1	3	1.0 – 2.9	ECP5512CAB-R50/G83
	3	1	7	1.6 – 5.0	ECP5512CAC-R50/G84
	5	1	15	3.7 – 12	ECP5512CAD-R50/G85
	10	1	30	12 – 32	ECP5512CAE-R50/G86
	10	2	30	12 – 37	ECP5522CAE-R50/G87
25	2	50	14 – 45	ECP5522CAF-R50/G88	
50	3	100	26 – 85	ECP5532CAG-R50/G89	
100	4	150	57 – 180	ECP5542CAN-R50/G92	

^② Motor FLA based on NEC table. For Class 10, Automatic Reset and other trip ranges see Table 24.

Table 23. Class ECP55 — Freedom Breaker Irrigation Pump Panels with Interchangeable Heater Overload

Motor Voltage	Max. hp	NEMA Size	Breaker Rating	Catalog Number
240V	1	1	7	ECP5512BAC
	3	1	15	ECP5512BAD
	7-1/2	1	30	ECP5512BAE
	10	2	50	ECP5522BAF
	15	2	50	ECP5522BAF
480V	25	3	100	ECP5532BAG
	50	4	150	ECP5542BAQ
	1	1	3	ECP5512CAB
	3	1	7	ECP5512CAC
	5	1	15	ECP5512CAD
	10	1	30	ECP5512CAE
	10	2	30	ECP5522CAE
25	2	50	ECP5522CAF	
50	3	100	ECP5532CAG	
100	4	150	ECP5542CAN	

Relays

Table 24. Freedom Solid-State Overload Relays

CEP7 Frame	NEMA Size	Full Load Current Adjustment Range (A)	3-Phase Manual Reset Overload		3-Phase Automatic/Manual Reset	
			Class 10	Class 20	Class 10	Class 20
Catalog Number Suffix \Rightarrow			R52	R50	R53	R51
M32	00	0.1 – 0.32	G101	G81	G141	G121
		0.32 – 1.0	G102	G82	G142	G122
1.0 – 2.9		G103	G83	G143	G123	
1.6 – 5.0		G104	G84	G144	G124	
3.7 – 12		G105	G85	G145	G125	
0 & 1	0.1 – 0.32	0.1 – 0.32	G101	G81	G141	G121
		0.32 – 1.0	G102	G82	G142	G122
		1.0 – 2.9	G103	G83	G143	G123
		1.6 – 5.0	G104	G84	G144	G124
		3.7 – 12	G105	G85	G145	G125
		12 – 32	G106	G86	G146	G126
M37	2	12 – 37	G107	G87	G147	G127
M45		14 – 45	G108	G88	G148	G128
M85	3	26 – 85	G109	G89	G149	G129
M110		66 – 110	G110	G90	G150	G130
M180	4	57 – 180	G112	G92	G152	G132

Example: R53/G144 = Class 10, 1.6 – 5.0 ampere overload for Size 0 or 1 starters.

Wiring Diagram

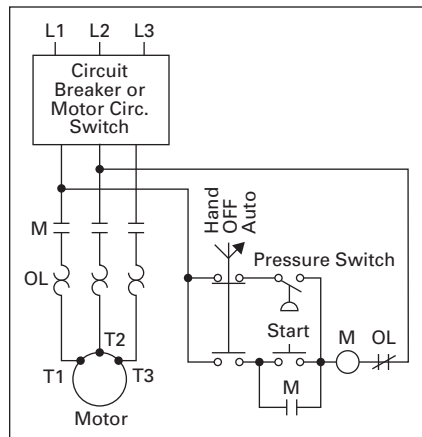


Figure 7. Typical Wiring Diagram

Dimensions

Dimensions

Table 25. Minimum Enclosure Box Numbers

Size	Top Entry			Bottom Entry		
	HMCPE/ BKR	C362	Fused C362	HMCPE/ BKR	C362	Fused C362
	Box No.	Box No.	Box No.	Box No.	Box No.	Box No.
1	8	8	8	8	8	8
2	8	8	8	8	8	8
2-1/2	8	8	8	8	8	8
3	8	8	9	8	8	9
3-1/2	8	8	9	8	8	9
4	9	—	—	9	—	—

SSOL Option

1	8	8	8	8	8	8
2	8	8	8	8	8	8
2-1/2	8	8	8	8	8	8
3	8 ①	8 ①	9	8 ①	8 ①	9
3-1/2	8 ①	8 ①	9	8 ①	8 ①	9
4	9	—	—	9	—	—

① Irrigation pump panels with a Generation 2 solid-state overload are sized in a Box 8. Those with the Generation 1 overload are sized in a Box 9.

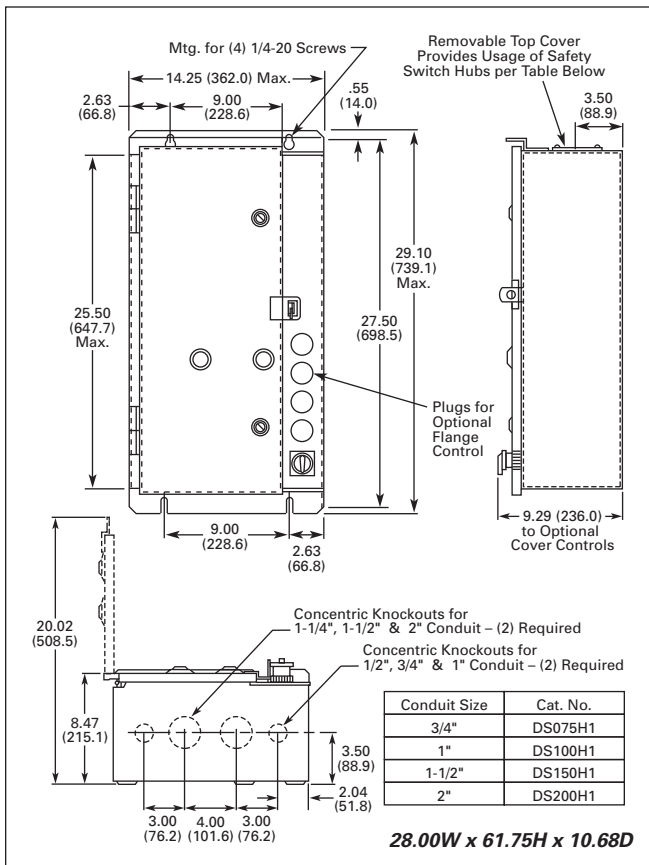


Figure 8. Box 8, Type 3R — Approximate Dimensions in Inches (mm)

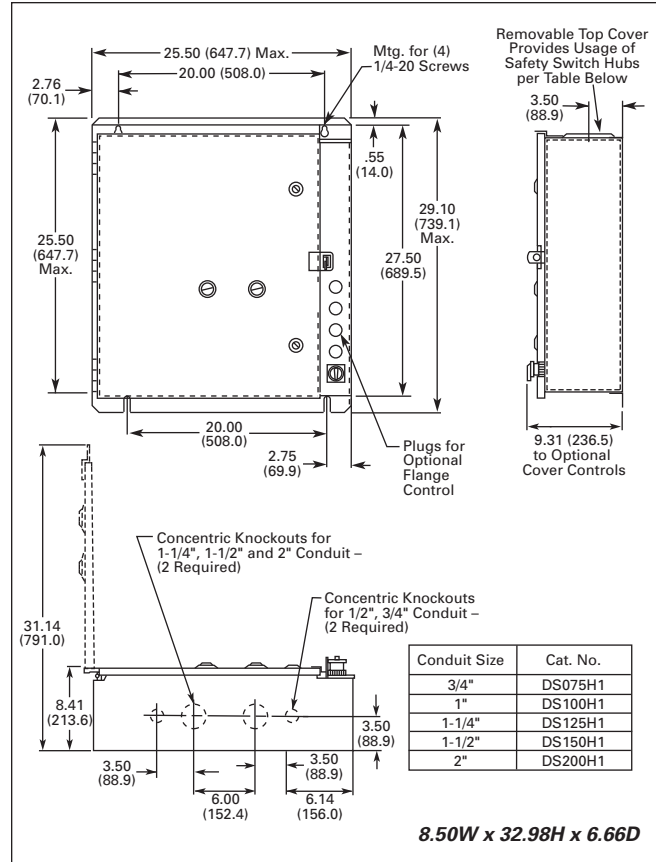


Figure 9. Box 9, Type 3R — Approximate Dimensions in Inches (mm)

Cover Control

Non-reversing

Flange Control Kits

For on-the-job conversion of Type 1, 3R, 4X and 12 enclosed starters. Knockouts are provided on the Type 1 flange. Type 3R, 4X and 12 have prepunched holes with removable hole plugs.

Factory Installed Pilot Devices

To order factory installed pilot devices, change the 9th character of the Catalog Number to the alpha shown in the table below. Example: to order an **ECN0514CAA** with START/STOP pushbuttons and a red pilot light, change the **A** to a **C**, i.e. **ECN0514CCA**.



Figure 10.

Figure 11.

Standards and Certifications

- UL Listed
- cUL Listed (indicates appropriate CSA Standard investigation)
- ABS Type Approval

Dimensions

Table 26. Type 1, 3R, 4X, 12 Duplex Pump Panels Non-combination

NEMA Size	Box No.	Shipping Wt. Lbs. (kg)
0 – 2	G	44 (20)
3 – 4	G1	120 (54)
5 – 6	F1E	405 (184)

Table 27. Type 1, 3R, 4X, 12 Duplex Pump Panels Combination

NEMA Size	Box No.	Shipping Wt. Lbs. (kg)
0 – 2	H	75 (34)
3 – 4	H1	180 (82)
5 – 6	F1E	425 (193)

Note: For Box Dimensions, see *Enclosed Control Product Guide*.

Table 28. Non-reversing Pilot Devices

Description	Factory Installed Flange Control			Field Installation Kits	
	Position 9 Alpha	Non-combination ① See Figure 10	Combination (NEMA only) ② See Figure 11	Non-combination ① See Figure 10 Catalog Number	Combination (NEMA only) ② See Figure 11 Catalog Number
No Cover Mounted Pilot Devices	A	■	■	C400GK0	—
START/STOP Pushbuttons	B	■	■	C400GK1	C400T1
with Red RUN Pilot Light	C	■	■	C400GK12 ③	—
with Red RUN/Green OFF Lights	D	■	■	C400GK16 ③	—
ON/OFF Pushbuttons	E	—	■	—	C400T2
with Red RUN Pilot Light	F	—	■	—	—
with Red RUN/Green OFF Lights	G	—	■	—	—
HAND/OFF/AUTO Selector Switch	H	■	■	C400GK3	C400T12
with Red RUN Pilot Light	J	■	■	C400GK32 ③	—
with Red RUN/Green OFF Lights	K	■	■	C400GK36 ③	—
START Pushbutton	L	—	■	—	C400T3
ON Pushbutton	M	—	■	—	C400T4
OFF Pushbutton	N	—	■	—	C400T5
Red RUN Pilot Light	P	■	■	C400GK42 ③	C400T9 ③
Green OFF	Q	■	■	C400GK41 ③	C400T10 ③
Red RUN/Green OFF Pilot Lights	R	■	■	C400GK46 ③	C400T11 ③
START/STOP Selector Switch	S	—	■	—	C400T13
with Red RUN Pilot Light	T	—	■	—	—
with Red RUN/Green OFF Lights	U	—	■	—	—
ON/OFF Selector Switch	V	—	■	—	C400T14
with Red RUN Pilot Light	W	—	■	—	—
with Red RUN/Green OFF Lights	X	—	■	—	—

① Type 1, NEMA Sizes 00 – 4/IEC Frames A – M Non-combination ONLY.

② Type 1, NEMA Sizes 5 – 9/IEC Frames N – V Non-combination PLUS all Type 3R, 4X, 12 Non-combination PLUS all Combination — NEMA Sizes only.

③ Add Code Letter from the table below to Catalog Number for voltage — Kits only. Example: C400T9B.

Rating	Code Letter	Rating	Code Letter	Rating	Code Letter
120V 60 Hz	A	240V 60 Hz	B	480V 60 Hz	C
208V 60 Hz	E	380V 50 Hz	L	600V 60 Hz	D