



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0158

HCAI Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Firetrol, Inc

Manufacturer's Technical Representative: Thomas Feighery

Mailing Address: 3362 Apex Peakway Apex, NC 27502

Telephone: (919) 460-5228

Email: Tom.Feighery@firetrol.com

Product Information

Product Name: Electrical Control Panels on Life Safety/Critical Branch

Product Type: Fire Protection & Security Panels

Product Model Number: See Attached Certified Components Listing

General Description: Firetrol FTA Fire Pump Controllers and accessories. Enclosures are Nema 2, 3R, 4, 12, or 4X, constructed of cold-rolled steel, stainless steel, or polycarbonate. Certified components include but are not limited to: various enclosure sizes, backplates, leg enclosures, circuit breakers, isolation switches, transformers, contactors, soft starters, autotransformers, resistor banks, fusible disconnects, and automatic transfer switches.

Mounting Description: Rigid, Floor/Wall Mounted

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: Dynamic Certification Laboratories

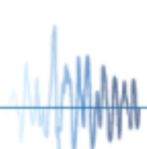
Contact Person: Kelly Laplace

Mailing Address: 1315 Greg Street, Suite 109 Sparks, NV 89431

Telephone: (775) 358-5085

Email: kelly@shaketest.com

Title: Business Manager





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California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

Company Name: THE VMC GROUP
Name: Kenneth Tarlow California License Number: S2851
Mailing Address: 980 9th Street, 16th Floor Sacramento, CA 95814
Telephone: (832) 627-2214 Email: ken.tarlow@thevmcgroup.com

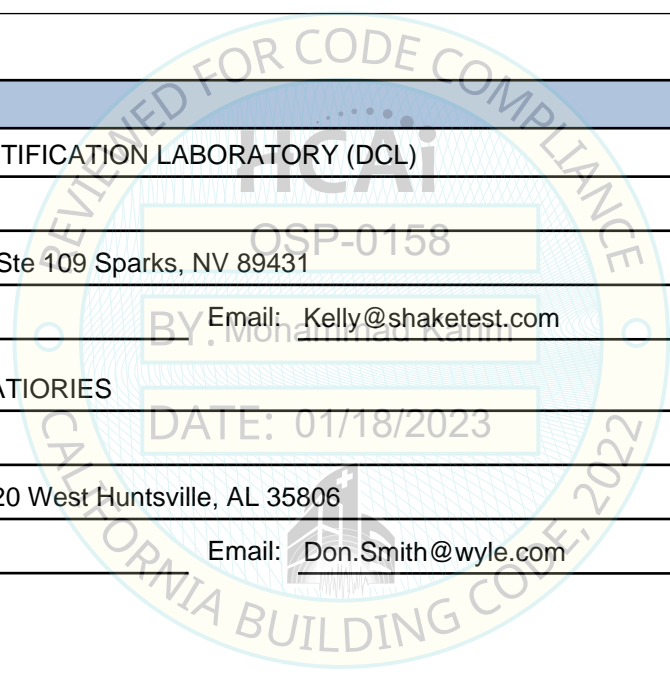
Certification Method

GR-63-Core ICC-ES AC156 IEEE 344 IEEE 693 NEBS 3
 Other (Please Specify): _____

Testing Laboratory

Company Name: DYNAMIC CERTIFICATION LABORATORY (DCL)
Contact Person: Kelly Laplace
Mailing Address: 1315 Greg St., Ste 109 Sparks, NV 89431
Telephone: (775) 358-5085 Email: Kelly@shaketest.com

Company Name: WYLE LABORATORIES
Contact Person: Don Smith
Mailing Address: 7800 Highway 20 West Huntsville, AL 35806
Telephone: (256) 837-4411 Email: Don.Smith@wyle.com





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.35

SDS (Design spectral response acceleration at short period, g) = 1.8

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

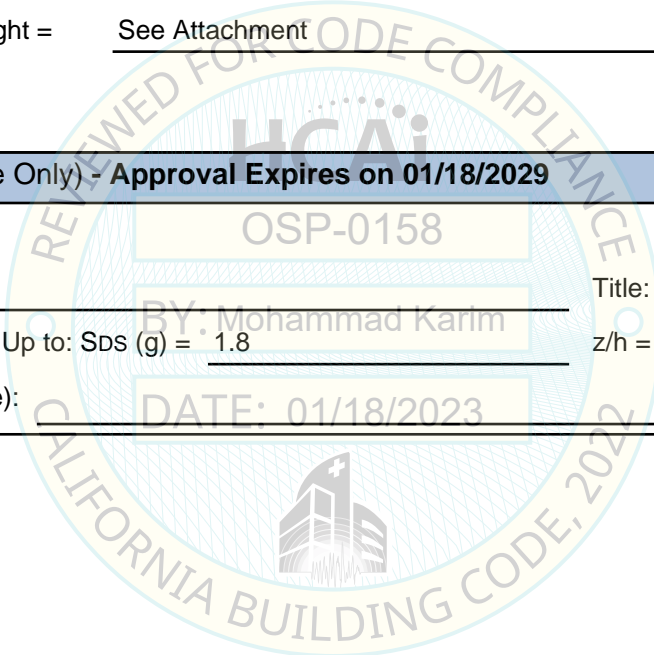
HCAI Approval (For Office Use Only) - Approval Expires on 01/18/2029

Date: 01/18/2023

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = 1.8 z/h = 1

Condition of Approval (if applicable): DATE: 01/18/2023



Special Seismic Certification

Table 1 - Certified Components - Wall Mount



DCL Project Number: 19012-2201
Manufacturer: Firetrol, Inc
Mounting Configuration: Rigid Wall Mount
Certified Seismic Level : $S_{DS} = 1.80g$, $z/h=1.0$

Model Number	Model Line	Notes	Max. Dimensions (in)			Max. Weight (lb.)	Unit
			Depth	Width	Height		
FTA550F-AG014B-BW	FTA550F Across-the-Line Jockey Pump Controller	Across-the-Line Jockey Pump Controller	8	14	16	15	UUT-11
FTA550F-AG002D-AM-NZ			8	14	16	15	UUT-12
FTA500-AF-01B-BN	FTA500 Across-the-Line Jockey Pump Controller	Jockey Pump Controller with Fusible Disconnect	8	18	24	44	UUT-04A
FTA500-AF-50B-BN			8	18	24	50	UUT-02A
FTA500-AA-50B-BN			8	18	24	50	UUT-01A
FTA550E-AA013B-BW	FTA550E Across-the-Line Jockey Pump Controller	Across-the-Line Jockey Pump Controller	8	20	24	57	UUT-09
FTA550E-AA050B-BW			8	20	24	66	UUT-10
FTA1100-JL24N	FTA 1100 Diesel Engine Fire Pump Controllers	Diesel Engine Controller	12	26	36	160	UUT-13
FTA1100-JL12N			12	26	36	160	UUT-14

Table 2 - Certified Components - Base Mount

DCL Project Number: 19012-2201
Manufacturer: Firetrol, Inc
Mounting Configuration: Rigid Base Mount
Certified Seismic Level : $S_{DS} = 1.80g$, $z/h=1.0$

BY: Mohammad Karim

DATE: 01/18/2023

Model Number	Model Line	Notes	Max. Dimensions (in)			Max. Weight (lb.)	Unit
			Depth	Width	Height		
916750-001	Soft Starter and Autotransformer	25HP, 480V Autotransformer	14	26	68	240	UUT-08B
916750		552A Soft Starter and 200HP, 380V Autotransformer	14	26	68	580	UUT-08A
FTA1930-AM50B	FTA 900/901/950/951 Electric Fire Pump Controllers and FTA 1000-1930 Diesel Engine Fire Pump Controllers	Soft-start Electric Controller	12	38	60	280	UUT-06
FTA1350-AM200B		Wye-Delta Start Electric Controller	14	41	68	380	UUT-04B
FTA1800-AM100B		Autotransformer Start Controller	12	38	60	418	UUT-05
FTA1000-AM300F		Across-the-Line Electric Controller	18	36	80	575	UUT-02B
FTA1930-AM150B-TS		Soft-start Electric Controller with Standard ATS	12	76	60	645	UUT-01B
FTA950-AM150B		Across-the-Line Electric Controller with E-Bypass ATS	24	71	70	750	UUT-03B
FTA1000-AM100B-TAB							
FTA951-AM100B							
FTA1100-JL24N	FTA 1100 Diesel Engine Fire Pump Controllers	Diesel Engine Controller Type 2 Enclosure	12	26	48	192	UUT-03A
FTA1100-JL24N-FDP		Diesel Engine Controller SS Type 4X Enclosure	12	26	60	208	UUT-07
J7ACTBB30600N5XM	J-Bypass ATS	J-Bypass ATS Type 3R Enclosure	37	49	95	1762	UUT-02C

Special Seismic Certification

Table 3 - Certified Subcomponents/Rigid Wall Mount - Enclosures



DCL Project Number: 19012-2201

Subcomponent No.	Dimensions (in)			Manufacturer	Material	NEMA Enclosure	Unit
	Depth	Width	Height				
915221	8.0	14.0	15.5	Firetrol, Inc	Polycarbonate	2/12/3R/4/4X	UUT-11, UUT-12
EN-1366	8.0	18.0	24.0		14 GA CRS	2	UUT-01A, UUT-02A, UUT-04A
EN-2254	8.0	20.0	24.0		14 GA CRS	2/12/3R/4	UUT-09, UUT-10
EN-1240	12.0	26.0	48.0		14 GA CRS	2	UUT-13, UUT-14

Table 4 - Certified Subcomponents/Rigid Wall Mount

DCL Project Number: 19012-2201

Backplates					
Subcomponent No.	Manufacturer	Description	Material	Approx. Weight (lb.)	Unit
PL-2027	Firetrol, Inc	Backplate	0.80THK 5052-H32 Aluminum	1	UUT-11, UUT-12
PL-2035		Backplate	0.100THK 5052-H32 Aluminum	3	UUT-09, UUT-10
PL-1366		Backplate	14 GA CRS	5	UUT-01A, UUT-02A
Circuit Breakers					
Subcomponent No.	Manufacturer	Description	Material	Approx. Weight (lb.)	Unit
PL-1366	ABB	Thermal Magnetic Molded Case Circuit Breaker, 150A Frame	Plastic	7	UUT-01A
PL-2027		Thermal Magnetic Molded Case Circuit Breaker, 100A Frame		7	UUT-10
PL-2035		Thermal Magnetic Molded Case Circuit Breaker, 15A Frame		7	UUT-09
Transformers					
Subcomponent No.	Manufacturer	Description	Material	Approx. Weight (lb.)	Unit
917248	Firetrol, Inc	Control 58VA, 208/230/400/460/575-24V	Laminated Steel (Varnished)	3	UUT-09, UUT-10, UUT-11, UUT-12
TF-0200		Control 50VA, 240V/480-120V		3	Interpolated
TF-0202		Control 150VA, 240/480-120V		5	UUT-10
Contactors					
Subcomponent No.	Manufacturer	Description	Material	Approx. Weight (lb.)	Unit
CT-1701	ABB	A12 Frame	Plastic	<1	UUT-04A
CT-1706		1A, 24-60VAC, 20-60VDC		<1	UUT-09
CT-2252		25.3A, 20-60VAC, 20-60VDC		<1	UUT-11
CT-2254		25.3A, 48-130VAC/DC Coil		<1	UUT-12
CT-2253		32.2A, 20-60VAC, 20-60VDC		<1	Interpolated
CT-1750		80A, 110-120VAC		2	UUT-10

Special Seismic Certification

Table 4 - Certified Subcomponents/Rigid Wall Mount Cont.



DCL Project Number: 19012-2201

Fusible Disconnect					
Subcomponent No.	Manufacturer	Description	Material	Approx. Weight (lb.)	Unit
DC-1047	ABB	30A	Plastic	<1	UUT-04A
DC-1049		100A		2	UUT-02A
Control Units					
Subcomponent No.	Manufacturer	Description	Material	Approx. Weight (lb.)	Unit
905102	Firetrol, Inc	Jockey XG Pump Control Unit	Plastic	<1	UUT-09, UUT-10, UUT-11, UUT-12
Manual Motor Protectors					
Subcomponent No.	Manufacturer	Description	Material	Approx. Weight (lb.)	Unit
DC-1081	ABB	0.63-1.0A	Plastic	<1	UUT-11
DC-1082		1.0-1.6A		<1	Interpolated
DC-1083		1.6-2.5A		<1	Interpolated
DC-1804		2.5-4.0A		<1	Interpolated
DC-1805		4.0-6.3A		<1	Interpolated
DC-1806		6.3-10.0A		<1	Interpolated
DC-1807		8.0-12.0A		<1	Interpolated
DC-1088		10.0-16.0A		<1	Interpolated
DC-1089		16.0-20.0A		<1	Interpolated
DC-1090		20.0-25.0A		<1	UUT-12
DC-1092		25.0-32.0A		<1	Interpolated

Table 5 - Certified Subcomponents/Rigid Base Mount - Enclosures

DCL Project Number: 19012-2201

Subcomponent No.	Dimensions (in)			Manufacturer	Material	NEMA Enclosure	Unit
	Depth	Width	Height				
EN-1240	12.0	26.0	48.0	Firetrol, Inc	14 GA CRS	2	UUT-03A
EN-1218, EN-2219	14.0	26.0	68.0		14 GA CRS	2	UUT-08A, UUT-08B
EN-1173, EN-1210, EN-1212	12.0	76.0	60.0		14 GA CRS	2	UUT-01B
EN-1211	12.0	38.0	60.0		14 GA 316 SS	2	UUT-06
EN-1985-001	12.0	26.0	60.0		14 GA CRS	4X	UUT-07
EN-1216	14.0	41.0	68.0		14 GA CRS	2	UUT-04B
EN-1211	12.0	38.0	60.0		14 GA CRS	2	UUT-05
EN-1215, EN-1246	18.0	71.0	68.0		14 GA CRS	2	UUT-03B
EN-1213	18.0	36.0	80.0		12 GA CRS	2	UUT-02B
806143-021	37.0	49.0	95.0		11 GA CRS	3R	UUT-02C

Notes:
Height includes 12-inch legs for floor-standing units

Special Seismic Certification
Table 6 - Certified Subcomponents/Rigid Base Mount



DCL Project Number: 19012-2201

Backplates					
Subcomponent No.	Manufacturer	Description	Material	Approx. Weight (lb.)	Unit
PL-1219	Firetrol, Inc	Backplate, Relay Board	14 GA CRS	5	UUT-01B
PL-1220		Backplate, PTR 48"	14 GA CRS	13	UUT-01B
PL-1222		Backplate, PTR 80"	12 GA CRS	16	UUT-02B
PL-1221		Backplate, PTR 56"	14 GA CRS	18	UUT-03B
PL-1240		Backplate, 36"	14 GA CRS	20	UUT-03A
PL-1937		Backplate, 48"	14 GA CRS	25	UUT-07
Legs					
Subcomponent No.	Manufacturer	Description	Material	Approx. Weight (lb.)	Unit
LG-1045	Firetrol, Inc	Leg Enclosure, 12"H x 12"D	14 GA CRS	7	UUT-01B
LG-1046		Leg Enclosure, 12"H x 14"D	14 GA CRS	7	UUT-05
LG-1366		Leg Enclosure, 12"H x 12"D	14 GA 316 SS	7	UUT-07
LG-1048		Leg Enclosure, 6"H x 12"D	3/16" CRS	7	Interpolated
LG-1049		Leg Enclosure, 6"H x 14"D	3/16" CRS	7	Interpolated
LG-1152		Leg Enclosure, 12"H x 14"D	14 GA 316 SS	7	Interpolated
LG-1045		Leg Enclosure, 12"H x 12"D	14 GA CRS	7	UUT-03A
LG-1366		Leg Enclosure, 12"H x 12"D	14 GA 316 SS	7	UUT-07
LG-1155		Leg Enclosure, 12"H x 18"D	14 GA CRS	9	UUT-03B
Isolation Switches					
Subcomponent No.	Manufacturer	Description	Material	Approx. Weight (lb.)	Unit
DC-1055/DC-1056	ABB	Molded Case Isolation Switch, 150/225A Frame	Plastic	6	UUT-06
CC-4201/CC-4205		Breaker used as Isolation Switch, 150, 175A (250A Frame)		6	Same as UUT-06
DC-1057		Molded Case Isolation Switch, 250A Frame		6	UUT-01B
DC-1096		Molded Case Isolation Switch, 250A Frame		6	Same as UUT-01B
DC-1058		Molded Case Isolation Switch, 400A Frame		9	UUT-04B
DC-1059/DC-1060		Molded Case Isolation Switch, 600/800A Frame		22	UUT-02B
Contactors					
Subcomponent No.	Manufacturer	Description	Material	Approx. Weight (lb.)	Unit
CT-1744*/CT-1754*	ABB	A50/A75 Frame	Plastic	2	UUT-04B
CT-2217/CT-2219		AF116/AF140 Frame		4	Interpolated
CT-1764*/CT-1774*		A95/A110 Frame		5	UUT-04B
CT-2221/CT-2223		AF190/AF205 Frame		6	Interpolated
CT-1806*/CT-1816*		A145/A185 Frame		7	UUT-05
CT-2225/CT-2227		AF265/AF305 Frame		10	Interpolated
CT-1826*/CT-1836*/CT-1846*		A210/A260/A300 Frame		13	UUT-01B
CT-1851*/CT-1861*		AF400/AF460 Frame		26	Interpolated
CT-1871*/CT-1881*		AF580/AF750A Frame		33	UUT-02B

Notes:
 The 6"H leg enclosures are approved because the 12"H (the weakest configuration) was tested. 3/16" CRS is stronger than 14 GA CRS.
 *Part number shown is a contactor with a 460V coil. 208, 220, and 220/440V coils may also be used.

Special Seismic Certification
Table 6 - Certified Subcomponents/Rigid Base Mount Cont.



DCL Project Number: 19012-2201

Control Units					
Subcomponent No.	Manufacturer	Description	Material	Approx. Weight (lb.)	Unit
AS-2001	Firetrol, Inc	Battery Charger, 12/24VDC	Aluminum	3	UUT-07
473670-006		Group 1 ATS Control Unit	Plastic	5	UUT-01B
AS-1198/1199		Mark II Fire Pump Control Unit	CRS Zinc Plate	7	UUT-04B
AS-2000		Mark II Fire Pump Control Unit		7	UUT-07
601800-002		Group 5 ATS Control Unit	Plastic	11	UUT-03B
Transformers					
Subcomponent No.	Manufacturer	Description	Material	Approx. Weight (lb.)	Unit
TF-0204	Firetrol, Inc	Control 250VA, 220V-480V	Laminated Steel (Varnished)	10	UUT-04B
TF-0206		Control 250VA, 208V		10	Interpolated
TF-1370		12VDC Charger		11	Interpolated
TF-1371		24VDC Charger		17	UUT-07
Circuit Breakers					
Subcomponent No.	Manufacturer	Description	Material	Approx. Weight (lb.)	Unit
CC-3091/CC-4053	ABB	Molded Case Circuit Breaker, 150/225A Frame	Plastic	7	UUT-06
CC-4201/CC-4205		Molded Case Circuit Breaker, 150, 175A (250A Frame)		6	Same as UUT-06
PL-1220		Molded Case Circuit Breaker, 250A Frame		7	UUT-01B
CC-4203		Molded Case Circuit Breaker, 250A Frame		6	Same as UUT-01B
CC-4097 ¹		Molded Case Circuit Breaker, 400A Frame		9	UUT-04B
CC-4167 ²		Molded Case Circuit Breaker, 600/800A Frame		21	UUT-02B

Notes:
 1. CC-4097 was previously PL-1221
 2. CC-4167 was previously PL-1222

Special Seismic Certification
Table 6 - Certified Subcomponents/Rigid Base Mount Cont.



DCL Project Number: 19012-2201

Soft Starters					
Subcomponent No.	Manufacturer	Description	Material	Approx. Weight (lb.)	Unit
VF-1689	Benshaw	65A	Aluminum	26	UUT-06
VF-1690		56A		27	Interpolated
VF-1691		240A		37	UUT-01B
VF-1693		720A		110	Interpolated
VF-1692		552A		110	UUT-08A
Autotransformers					
Subcomponent No.	Manufacturer	Description	Material	Approx. Weight (lb.)	Unit
TF-1039	Hammond	25/30 HP	Laminated Steel (Varnished)	51	UUT-08B
TF-1064		100 HP		140	UUT-05
TF-1084		250 HP		245	Interpolated
TF-1078		200 HP		280	UUT-08A
Automatic Transfer Switches					
Subcomponent No.	Manufacturer	Description	Material	Approx. Weight (lb.)	Unit
9403104, 9403150, 7ATS3100, 7ATS3150	Firetrol, Inc	D Frame STD ATS 30-230A	Plastic	20	UUT-01B
9403260, 9403400, 7ATS3260, 7ATS3400		E Frame STD ATS 260/400A		45	UUT-03B
9403400, 9403800, 94031000, 7ATS3400, 7ATS3800, 7ATS31000		H Frame STD ATS 600/800/1000A		142	Interpolated
7ATB3150, 7ATB3260, 7ATB3400		E Frame BYPASS ATS 260/400A		145	UUT-03B
7ATB3150, 7ATB3260, 7ATB3400, 7ATB3600		J Frame BYPASS ATS 400/600A		600	UUT-02C
Resistor Banks					
Subcomponent No.	Manufacturer	Description	Material	Approx. Weight (lb.)	Unit
RS-4601	Post Glover	Resistor Set	Stainless Steel	9	Extrapolated*
RS-4657				15	UUT-04B

Notes:

*RS-4601 and RS-4657 are identical in construction; only number of resistor banks is different

Special Seismic Certification
Table 7 - Tested Units



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Mounting Configuration: Wall and Base Mount

Model Number	Model Line	Notes	Max. Dimensions (in)			Max. Weight (lb.)	Mounting Configuration	Sds (g)	Unit
			Depth	Width	Height				
FTA550F-AG014B-BW	FTA550F Across-the-Line	Across-the-Line Jockey Pump Controller	8	14	16	15	Wall Mount	2.50	UUT-11
FTA550F-AG002D-AM-NZ	Jockey Pump Controller		8	14	16	15		2.50	UUT-12
FTA550E-AA013B-BW	FTA550E Across-the-Line		8	20	24	57		2.50	UUT-09
FTA550E-AA050B-BW	Jockey Pump Controller		8	20	24	66		2.50	UUT-10
FTA500-AF-01B-BN	FTA500 Across-the-Line Jockey Pump Controller	Jockey Pump Controller with Fusible Disconnect	8	18	24	44		2.50	UUT-04A
FTA500-AF-50B-BN		Jockey Pump Controller with Circuit Breaker	8	18	24	50		1.80	UUT-02A
FTA500-AA-50B-BN		Jockey Pump Controller with Circuit Breaker	8	18	24	50		1.93	UUT-01A
FTA1100-JL24N	FTA 1100 Diesel Engine Fire Pump Controllers	Diesel Engine Controller	12	26	36	160		2.50	UUT-13
FTA1100-JL12N		Diesel Engine Controller	12	26	36	160		2.50	UUT-14
FTA1100-JL24N		Diesel Engine Controller Type 2 Enclosure	12	26	48	192		1.80	UUT-03A
FTA1100-JL24N-FDP		Diesel Engine Controller SS Type 4X Enclosure	12	26	60	208	2.50	UUT-07	
916750-001	Soft Starter and Autotransformer	25HP, 480V Autotransformer	14	26	68	240	2.50	UUT-08B	
916750		552A Soft Starter and 200HP, 380V Autotransformer	14	26	68	580	2.50	UUT-08A	
FTA1930-AM50B	FTA 900/901/950/951 Electric Fire Pump Controllers and FTA 1000-1930 Diesel Engine Fire Pump Controllers	Soft-start Electric Controller	12	38	60	280	2.50	UUT-06	
FTA1350-AM200B		Wye-Delta Start Electric Controller	14	41	68	380	2.50	UUT-04B	
FTA1800-AM100B		Autotransformer Start Controller	12	38	60	418	2.50	UUT-05	
FTA1000-AM300F		Across-the-Line Electric Controller	18	36	80	575	1.80	UUT-02B	
FTA1930-AM150B-TS		Soft-start Electric Controller with Standard ATS	12	76	60	645	1.80	UUT-01B	
FTA950-AM150B		Across-the-Line Electric Controller with E-Bypass ATS	24	71	70	750	1.80	UUT-03B	
FTA1000-AM100B-TAB		Across-the-Line Electric Controller with E-Bypass ATS	24	71	70	750	1.80	UUT-03B	
FTA951-AM100B	J-Bypass ATS	J-Bypass ATS Type 3R Enclosure	37	49	95	1762	1.93	UUT-02C	
J7ACTBB30600N5XM									

UUT-01A Unit Under Test (UUT) Summary Sheet



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Product Line: Fire Pump Controllers and Accessories

Test Laboratory: DCL (Report No. 99864-1001, UUT1)

Model Number: FTA500-AA-50B-BN

Product Construction Summary:

14 gage painted, cold rolled steel enclosure, NEMA 2

Options / Component Summary:

FTA500 Low Voltage Across-the-Line Jockey Pump Controller with A75 contactor and 100 Amp circuit breaker

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
50	8	18	24	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.51

Unit Mounting Description:



The rigid-mount support system consisted of a rigid steel frame, a stud wall composed of 16-gage steel studs at 24-inches on center, and backing plates to accommodate the UUT as per manufacturer's instructions. An overall view of the support system and UUT is shown above. The support system, including rigid steel frame and its attachment to the shake table platform, was provided by DCL. The fixturing wall was attached to the shake table using M12 threaded rod at a spacing of approximately 12-inches on center. The UUT was attached to the fixturing wall at four corners utilizing 1/4-inch 20x1 hex cap bolts and the existing openings in the back of the back-box. (note: attachment in the field need not match the test, but must be acceptable to the engineer of record)

Overall view of UUT-01A

UUT-01B Unit Under Test (UUT) Summary Sheet



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Product Line: Fire Pump Controllers and Accessories

Test Laboratory: Wyle (Report No. T57168-1)

Model Number: FTA1930-AM150B-TS, FTA950-AM150B

Product Construction Summary:

14 gage painted, cold rolled steel enclosure, NEMA 2

Options / Component Summary:

FTA1930 Soft Start Fire Pump Controller w/Mark II XG and D-Frame ATS

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
644	12	76	60	7	18	>33

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	1.8	1.0	1.5	2.88	2.16	1.20	0.48

Unit Mounting Description:



The UUT was bolted to a Wyle-fabricated test fixture using twelve 1/2-inch Grade 5 bolts. The test fixture was welded to the seismic test table so that the horizontal axes of the UUT were colinear with the horizontal axes of the test table.

Overall view of UUT-01B

UUT-02A Unit Under Test (UUT) Summary Sheet



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Product Line: Fire Pump Controllers and Accessories

Test Laboratory: DCL (Report No. 99864-1001, UUT2)

Model Number: FTA500-AF-50B-BN

Product Construction Summary:

14 gage painted, cold rolled steel enclosure, NEMA 2

Options / Component Summary:

FTA500 Low Voltage Across-the-Line Jockey Pump Controller with A75 contactor and 100 Amp fusible disconnect

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
50	8	18	24	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.51

Unit Mounting Description:



The rigid-mount support system consisted of a rigid steel frame, a stud wall composed of 16-gage steel studs at 24-inches on center, and backing plates to accommodate the UUT as per manufacturer's instructions. An overall view of the support system and UUT is shown above. The support system, including rigid steel frame and its attachment to the shake table platform, was provided by DCL. The fixturing wall was attached to the shake table using M12 threaded rod at a spacing of approximately 12-inches on center. The UUT was attached to the fixturing wall at four corners utilizing 1/4-inch 20x1 hex cap bolts and the existing openings in the back of the back-box.

Overall view of UUT-02A

UUT-02B

Unit Under Test (UUT)

Summary Sheet



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Product Line: Fire Pump Controllers and Accessories

Test Laboratory: Wyle (Report No. T57168-2)

Model Number: FTA1000-AM300F

Product Construction Summary:

14 gage painted, cold rolled steel enclosure, NEMA 2

Options / Component Summary:

FTA1000 Across-the-Line Fire Pump Controller w/ Mark II XG

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
600	18	36	80	9	11	>33

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	1.8	1.0	1.5	2.88	2.16	1.20	0.48

Unit Mounting Description:



The UUT was bolted to a Wyle-fabricated test fixture using six 1/2-inch Grade 5 bolts. The test fixture was welded to the seismic test table so that the horizontal axes of the UUT were colinear with the horizontal axes of the test table.

Overall view of UUT-02B

UUT-02C

Unit Under Test (UUT)

Summary Sheet



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Product Line: Fire Pump Controllers and Accessories

Test Laboratory: Wyle (Report No. 58168R10-2)

Model Number: J7ACTBB30600N5XM

Product Construction Summary:

14 gage painted, cold rolled steel enclosure, NEMA 3R

Options / Component Summary:

J 600 Amp bypass switch, 480V, 50-60 Hz, 3 phase, 3 poles w/ an additional switched neutral

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
1,726	37	49	95	8.6	9.5	>33

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.68	0.67

Unit Mounting Description:



The UUT was bolted to a Wyle-fabricated test fixture using eight 1/2-inch Grade 5 bolts. The test fixture was welded to the seismic test table so that the horizontal axes of the UUT were colinear with the horizontal axes of the test table.

Overall view of UUT-02C

UUT-03A Unit Under Test (UUT) Summary Sheet



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Product Line: Fire Pump Controllers and Accessories

Test Laboratory: Wyle (Report No. 54614R07, EUT3)

Model Number: FTA1100-JL24N

Product Construction Summary:

14 gage painted, cold rolled steel enclosure, NEMA 2

Options / Component Summary:

FTA1100 Mark II Diesel Engine Fire Pump Controller

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

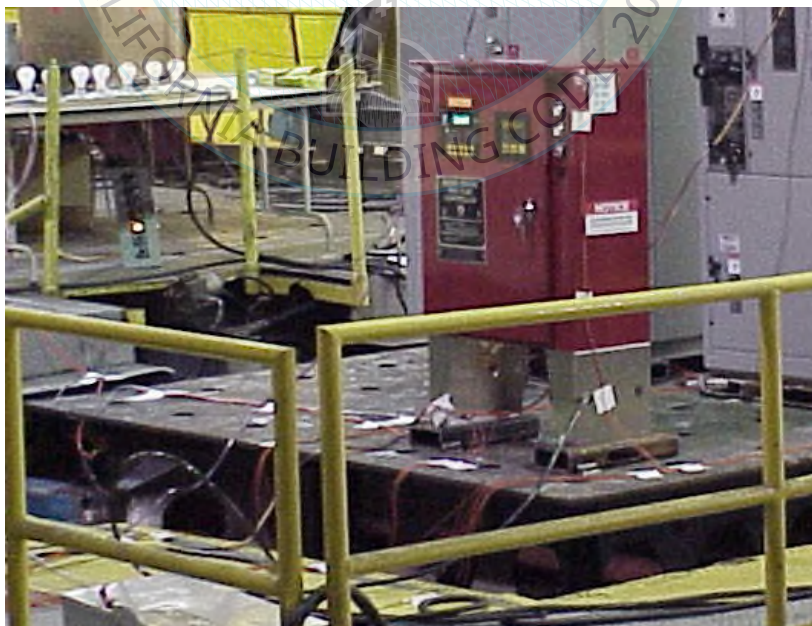
Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
192	12	26	48	11	19	30

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	1.8	1.0	1.5	2.88	2.16	1.20	0.48

Unit Mounting Description:

DATE: 01/18/2023



The UUT was bolted to a Wyle-fabricated test fixture using six 1/2-inch Grade 5 bolts. The test fixture was welded to the seismic test table so that the horizontal axes of the UUT were colinear with the horizontal axes of the test table.

Overall view of UUT-03A

UUT-03B Unit Under Test (UUT) Summary Sheet



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Product Line: Fire Pump Controllers and Accessories

Test Laboratory: Wyle (Report No. T57345-3)

Model Number: FTA1000-AM100B-TAB, FTA951-AM100B

Product Construction Summary:

14 gage painted, cold rolled steel enclosure. NEMA 2

Options / Component Summary:

ASCO FTA1000 Across-the-Line Fire Pump Controller w/ Mark II XG and E-Bypass ATS

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
800	24	71	70	8.5	10	>33

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	1.8	1.0	1.5	2.88	2.16	1.20	0.48

Unit Mounting Description:



The UUT was bolted to a Wyle-fabricated test fixture using twelve 1/2-inch Grade 5 bolts. The test fixture was welded to the seismic test table so that the horizontal axes of the UUT were colinear with the horizontal axes of the test table.

Overall view of UUT-03B

UUT-04A Unit Under Test (UUT) Summary Sheet



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Product Line: Fire Pump Controllers and Accessories

Test Laboratory: Wyle (Report No. T57168-4, UUT4)

Model Number: FTA500-AF-01B-BN

Product Construction Summary:

14 gage painted, cold rolled steel enclosure, NEMA 2

Options / Component Summary:

FTA500 Low Voltage Across-the-Line Jockey Pump Controller with A12 contactor and 30 Amp fusible disconnect

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

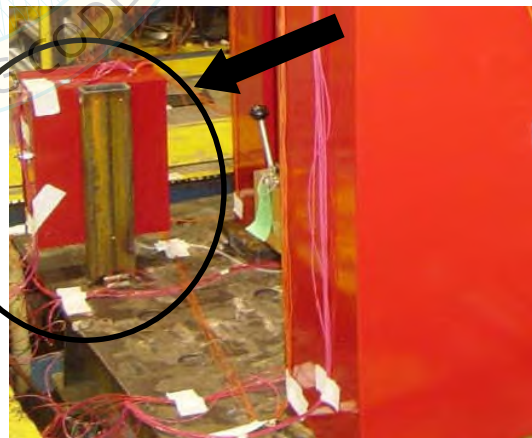
Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
44	8	18	24	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	1.8	1.0	1.5	2.88	2.16	1.20	0.48

Unit Mounting Description:

DATE: 01/18/2023



The UUT was bolted to a Wyle-fabricated test fixture using three 5/16-inch Grade 5 bolts. The test fixture was welded to the seismic test table so that the horizontal axes of the UUT were colinear with the horizontal axes of the test table.

Overall view of UUT-04A

UUT-04B

Unit Under Test (UUT)

Summary Sheet



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Product Line: Fire Pump Controllers and Accessories

Test Laboratory: Wyle (Report No. 58168R10-4)

Model Number: FTA1350-AM200B

Product Construction Summary:

14 gage painted, cold rolled steel enclosure, NEMA 2

Options / Component Summary:

FTA1350 Electric Motor Fire Pump Controller, Wye-Delta Start, 480 Vac, 50/60Hz, Three Phase

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
380	14	41	68	7.7	12.5	33

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.68	0.67

Unit Mounting Description:

DATE: 01/18/2023



UUT4B is shown in the front-center of the test units in the above photo. The UUT was bolted to a Wyle-fabricated test fixture using six 5/16-inch Grade 5 bolts. The test fixture was welded to the seismic test table so that the horizontal axes of the UUT were colinear with the horizontal axes of the test table.

Overall view of UUT-04B

UUT-05 Unit Under Test (UUT) Summary Sheet



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Product Line: Fire Pump Controllers and Accessories

Test Laboratory: Wyle (Report No. 58168R10-5)

Model Number: FTA1800-AM100B

Product Construction Summary:

Single door, 14 gage CRS enclosure, welded construction, NEMA 2

Options / Component Summary:

FTA 1800 Autotransformer Start Electric Controller with Mark II XG operator interface and a water pressure transducer

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
418	14	38	60	10	15	>33

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.68	0.67

Unit Mounting Description:

DATE: 01/18/2023



The UUT was bolted to a Wyle-fabricated test fixture using six 5/16-inch Grade 5 bolts. The test fixture was welded to the seismic test table so that the horizontal axes of the UUT were colinear with the horizontal axes of the test table.

Overall view of UUT-05

UUT-06 Unit Under Test (UUT) Summary Sheet



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Product Line: Fire Pump Controllers and Accessories

Test Laboratory: Wyle (Report No. 58168R10-6)

Model Number: FTA1930-AM50B

Product Construction Summary:

Single door, 14 gage CRS enclosure, welded construction, NEMA 2

Options / Component Summary:

FTA1930 Soft Start Electric Controller with Mark II XG Operator Interface and a water pressure transducer

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
280	12	38	60	9	21.5	>33

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.68	0.67

Unit Mounting Description:

DATE: 01/18/2023



The UUT was bolted to a Wyle-fabricated test fixture using six 5/16-inch Grade 5 bolts. The test fixture was welded to the seismic test table so that the horizontal axes of the UUT were colinear with the horizontal axes of the test table.

Overall view of UUT-06

UUT-07

Unit Under Test (UUT)

Summary Sheet



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Product Line: Fire Pump Controllers and Accessories

Test Laboratory: Wyle (Report No. 58168R10-7)

Model Number: FTA1100-JL24N-FDP

Product Construction Summary:

Single door, 14 gage 316 painted stainless steel enclosure, welded construction, NEMA 4X

Options / Component Summary:

FTA1100 Diesel Engine Fire Pump Controller SS with Mark II XG operator interface, two 24 V engine battery chargers and a water pressure transducer.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
208	12	26	60	12.5	19.6	>33

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.68	0.67

Unit Mounting Description:



The UUT was bolted to a Wyle-fabricated test fixture using six 5/16-inch Grade 5 bolts. The test fixture was welded to the seismic test table so that the horizontal axes of the UUT were colinear with the horizontal axes of the test table.

Overall view of UUT-07

UUT-08A Unit Under Test (UUT) Summary Sheet



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Product Line: Fire Pump Controllers and Accessories

Test Laboratory: DCL (Report No. 99841-1101)

Model Number: 916750

Product Construction Summary:

Single door, 14 gage CRS enclosure, welded construction, NEMA 2

Options / Component Summary:

552A Soft Starter and 200HP, 380V Autotransformer

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
580	14	26	68	9	9	>33

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.68	0.67

Unit Mounting Description:



The UUT was bolted to a DCL-fabricated test fixture using six 1/2-inch Grade 5 bolts (3 per leg). The test fixture was attached to the seismic test table with M12 threaded rod, spaced approximately 8-inches on center, so that the horizontal axes of the UUT were colinear with the horizontal axes of the test table.

Overall view of UUT-08A

UUT-08B

Unit Under Test (UUT)

Summary Sheet



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Product Line: Fire Pump Controllers and Accessories

Test Laboratory: DCL (Report No. 99841-1101)

Model Number: 916750-001

Product Construction Summary:

Single door, 14 gage CRS enclosure, welded construction, NEMA 2

Options / Component Summary:

25HP, 480V Autotransformer

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
240	14	26	68	8.5	8.8	>33

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.68	0.67

Unit Mounting Description:



The UUT was bolted to a DCL-fabricated test fixture using six 1/2-inch Grade 5 bolts (3 per leg). The test fixture was attached to the seismic test table with M12 threaded rod, spaced approximately 8-inches on center, so that the horizontal axes of the UUT were colinear with the horizontal axes of the test table.

Overall view of UUT-08B

UUT-09 Unit Under Test (UUT) Summary Sheet



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Product Line: Fire Pump Controllers and Accessories

Test Laboratory: DCL (Report No. 99683-1201)

Model Number: FTA550E-AA013B-BW

Product Construction Summary:

NEMA Type 2 painted cold rolled steel enclosure

Options / Component Summary:

Programmable running period timer, circuit breaker, 1/3 HP, 480V-3Phase and contacts for remote indication and system pressure

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
57	8	20	24	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.67	0.67

Unit Mounting Description:



Unit attached to DCL steel stud wall shake table interface fixture with four 3/8-inch diameter Grade 5 bolts, using the manufacturer-provided mounting holes at the back of the enclosure.

Overall view of UUT-09

UUT-10 Unit Under Test (UUT) Summary Sheet



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Product Line: Fire Pump Controllers and Accessories

Test Laboratory: DCL (Report No. 99683-1201)

Model Number: FTA550E-AA050B-BW

Product Construction Summary:

NEMA Type 2 painted cold rolled steel enclosure

Options / Component Summary:

Programmable running period timer, circuit breaker, 50 HP, 480V-3Phase and contacts for remote indication and system pressure

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
66	8	20	24	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.67	0.67

Unit Mounting Description:



Unit attached to DCL steel stud wall shake table interface fixture with four 3/8-inch diameter Grade 5 bolts, using the manufacturer-provided mounting holes at the back of the enclosure.

Overall view of UUT-10

UUT-11 Unit Under Test (UUT) Summary Sheet



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Product Line: Fire Pump Controllers and Accessories

Test Laboratory: DCL (Report No. 99683-1201)

Model Number: FTA550F-AG014B-BW

Product Construction Summary:

NEMA Type 2/3R/4/4X/12 polycarbonate enclosure

Options / Component Summary:

Programmable running period timer, manual motor protector, 1/4 HP, 480V-3Phase and contacts for remote indication and phase failure/reversal

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
15	8	14	15.5	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.67	0.67

Unit Mounting Description:



Unit attached to DCL steel stud wall shake table interface fixture with four 3/8-inch diameter Grade 5 bolts, using the manufacturer-provided mounting holes at the back of the enclosure.

Overall view of UUT-11

UUT-12

Unit Under Test (UUT)

Summary Sheet



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Product Line: Fire Pump Controllers and Accessories

Test Laboratory: DCL (Report No. 99683-1201)

Model Number: FTA550F-AG002D-AM-NZ

Product Construction Summary:

NEMA Type 2/3R/4/4X/12 polycarbonate enclosure

Options / Component Summary:

Programmable running period timer, manual motor protector, 2 HP, 110V-1Phase; contacts for remote indication, failed to start; interlock output contacts to prevent jockey pump from starting during main controller operation

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
15	8	14	15.5	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.67	0.67

Unit Mounting Description:



Unit attached to DCL steel stud wall shake table interface fixture with four 3/8-inch diameter Grade 5 bolts, using the manufacturer-provided mounting holes at the back of the enclosure.

Overall view of UUT-12

UUT-13

Unit Under Test (UUT)

Summary Sheet



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Product Line: Fire Pump Controllers and Accessories

Test Laboratory: DCL (Report No. 99683-1201)

Model Number: FTA1100-JL24N

Product Construction Summary:

NEMA Type 2, painted cold rolled steel enclosure

Options / Component Summary:

Diesel engine fire pump controller, Mark II controller, lead acid battery, 24V DC, negative ground

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
160	12	26	36	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.67	0.67

Unit Mounting Description:



Unit attached to DCL steel stud wall shake table interface fixture with four 1/2-inch diameter Grade 5 bolts, using the manufacturer-provided mounting tabs at the back of the enclosure.

Overall view of UUT-13

UUT-14 Unit Under Test (UUT) Summary Sheet



DCL Project Number: 19012-2201

Manufacturer: Firetrol, Inc

Product Line: Fire Pump Controllers and Accessories

Test Laboratory: DCL (Report No. 99683-1201)

Model Number: FTA1100-JL12N

Product Construction Summary:

NEMA Type 2, painted cold rolled steel enclosure

Options / Component Summary:

Diesel engine fire pump controller, Mark II controller, lead acid battery, 12V DC, negative ground

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
160	12	26	36	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2010	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.67	0.67

Unit Mounting Description:



Unit attached to DCL steel stud wall shake table interface fixture with four 1/2-inch diameter Grade 5 bolts, using the manufacturer-provided mounting tabs at the back of the enclosure.

Overall view of UUT-14