



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0693

HCAI Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: ASCO Power Technologies LP

Manufacturer's Technical Representative: Scott Littler

Mailing Address: 6700 Tower Circle, Suite 700, Franklin, TN 37067

Telephone: (615) 267-9407

Email: Scott.Littler@se.com

Product Information

Product Name: Switchgear/Switchboards

Product Type: Switchgear - Low Voltage

Product Model Number: Power Control Systems (PCS) Series 4000 & 7000 with Overhead Lifting Trolley

General Description: Low Voltage Switchgear Systems with Square D Circuit Breakers.

Mounting Description: Rigid, Floor/Wall Mounted

Tested Seismic Enhancements: Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units.

Applicant Information

Applicant Company Name: Pre Compliance

Contact Person: Galen Reid

Mailing Address: 36 Southwest Wall Street, Bend, OR 97702-3425

Telephone: (541) 241-2310

Email: galen@go-pre.com

Title: Principal





**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION**

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

Company Name: PRE COMPLIANCE
Name: Andrew Coughlin California License Number: S6082
Mailing Address: 36 SW Wall Street, Bend, OR 97702
Telephone: (415) 635-8461 Email: Andy@go-pre.com

Certification Method

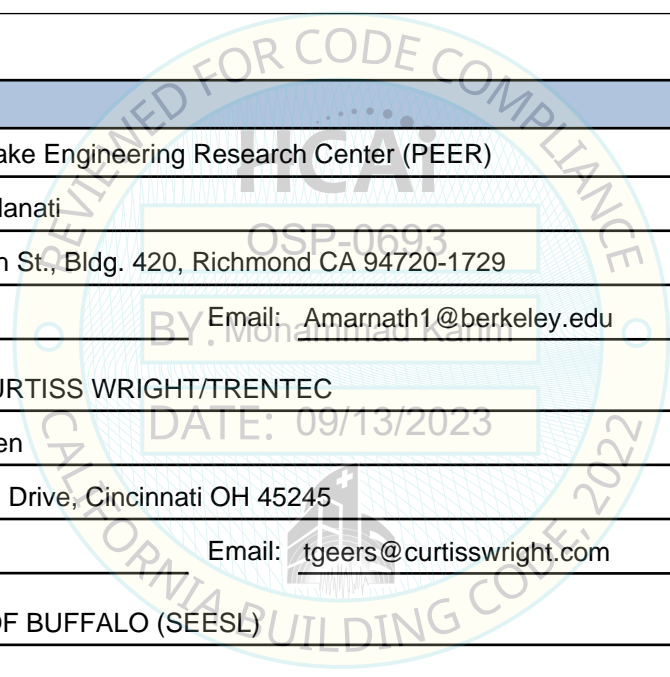
GR-63-Core ICC-ES AC156 IEEE 344 IEEE 693 NEBS 3
 Other (Please Specify): _____

Testing Laboratory

Company Name: Pacific Earthquake Engineering Research Center (PEER)
Contact Person: Amarnath Kasalanati
Mailing Address: 1301 South 46th St., Bldg. 420, Richmond CA 94720-1729
Telephone: (510) 642-3437 Email: Amarnath1@berkeley.edu

Company Name: QUALTECH/CURTISS WRIGHT/TRENTEC
Contact Person: Timothy A. Green
Mailing Address: 4600 East Tech Drive, Cincinnati OH 45245
Telephone: (513) 528-7900 Email: tgeers@curtisswright.com

Company Name: UNIVERSITY OF BUFFALO (SEESL)
Contact Person: Mark Pitman
Mailing Address: 212 Ketter Hall, Buffalo NY 14260
Telephone: (716) 645-4377 Email: mpitman@buffalo.edu





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FACILITIES DEVELOPMENT DIVISION**

Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.5 at z/h=1; 1.11 at z/h=0

SDS (Design spectral response acceleration at short period, g) = 2.00 at z/h=1; 2.46 at z/h=0

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 and 0

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

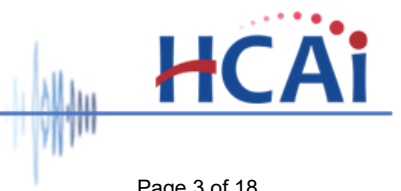
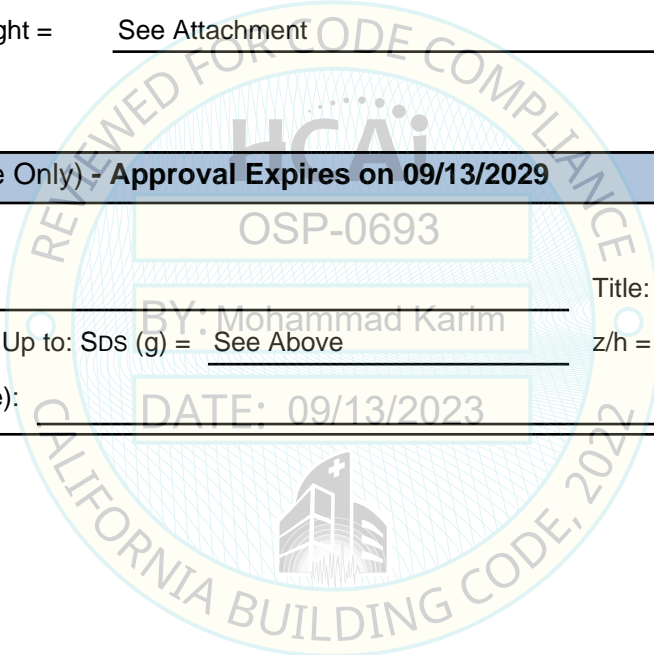
HCAI Approval (For Office Use Only) - Approval Expires on 09/13/2029

Date: 9/13/2023

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = See Above z/h = See Above

Condition of Approval (if applicable): DATE: 09/13/2023



Manufacturer: ASCO Power Technologies LP
Product Type: Switchgear – Low Voltage
Model Line: Power Control Systems (PCS)

Seismic Parameters

$S_{DS} = 2.00g$ for $z/h=1$
 $S_{DS} = 2.46g$ for $z/h=0$ $I_p = 1.5$

Building Codes

CBC 2022

TABLE 1

Mounting Configuration: Base Mounted - Rigid

Construction Summary

Enclosures constructed of 11 ga. Carbon steel.

Options Summary

B=Breaker Compartment; **C**=Controls Compartment;
X=Tall Ventilated Breaker Compartment;
S=Empty Compartment; **H**=Qty. of Breakers

Model Number	Main Bus Rating (Amp)	Breaker Rating (Amp)	NEMA Type	Max. Dimensions (in)			Wt. (lb)	Notes	UUT
				D	W	H			
0H-C/C/C/C	N/A	N/A	Type 1	24	26	94	500		2
0H-C/C/C/C	N/A	N/A	Type 1	30	36	94	1089		Interp.
0H-C/C/C/C	0 - 10,000	N/A	Type 1	84	36	94	1713		Interp.
6H-B/B/B/B/B/B-3P	3,000 - 10,000	250 - 1200	Type 1	84	40	94	2991		Interp.
2H-B/C/C/B-3P	6000	(2) 800	Type 1	72	26	94	3000		1a
1H-B/S/C/S-3P	2,000 - 10,000	800 - 3,200	Type 1	84	40	94	3345		Interp.
1H-B/S/C/S-4P	2,000 - 10,000	800 - 3,200	Type 1	84	40	94	3627		Interp.
1H-B/C/C/C-3P	2,000 - 10,000	800 - 3,200	Type 1	84	40	94	3704		Interp.
2H-B/B/C/S-3P	2,000 - 10,000	800 - 3,200	Type 1	84	40	94	3733		Interp.
3H-B/B/B/C-3P	3,000 - 10,000	800 - 3,200	Type 1	84	40	94	3746		Interp.
3H-B/B/C/B-3P	3,000 - 10,000	800 - 3,200	Type 1	84	40	94	3746		Interp.
4H-B/B/B/B-3P	3,000 - 10,000	800 - 2,000	Type 1	84	40	94	3837		Interp.
1H-B/X/C/C-3P	2,000 - 10,000	800 - 5,000	Type 1	84	40	94	3941		Interp.
1H-B/C/C/C-4P	2,000 - 10,000	800 - 3,200	Type 1	84	40	94	3987		Interp.
1H-B/X/C/C-3P	6,000	5,000	Type 1	84	40	110	4000		3
4H-B/B/B/B-3P	10,000	(4) 800	Type 1	84	26	110	4000		3
1H-S/B/C/C-3P	2,000 - 10,000	6,000	Type 1	84	40	94	4006		Interp.
2H-B/C/B/S-3P	2,000 - 10,000	800 - 3,200	Type 1	84	40	94	4123		Interp.
2H-B/B/C/S-4P	2,000 - 10,000	800 - 3,200	Type 1	84	40	94	4152		Interp.
3H-B/B/B/C-4P	3,000 - 10,000	800 - 3,200	Type 1	84	40	94	4201		Interp.
3H-B/B/C/B-4P	3,000 - 10,000	800 - 3,200	Type 1	84	40	94	4201		Interp.
1H-B/X/C/C-4P	2,000 - 10,000	800 - 5,000	Type 1	84	46	94	4275		Interp.
2H-B/C/C/B-3P	2,000 - 10,000	800 - 4,000	Type 1	84	40	94	4322		Interp.
4H-B/B/B/B-4P	3,000 - 10,000	800 - 2,000	Type 1	84	40	94	4385		Interp.
1H-S/B/C/C-4P	2,000 - 10,000	6000	Type 1	84	46	94	4497		Interp.
2H-B/C/B/S-4P	2,000 - 10,000	800 - 3,200	Type 1	84	40	94	4687		Interp.
2H-B/C/C/B-3P	10000	(2) 4,000	Type 1	84	36	94	4800		1b
2H-B/C/C/B-4P	2,000 - 10,000	800 - 4,000	Type 1	84	46	94	4800		Interp.
OH-C/C/C/C	0-6,000	N/A	Type 3R	84	40	101.5	2618		Interp.
6H-B/B/B/B/B/B-3P	6,000	(6) 1200	Type 3R	84	40	101.5	3700		4

Manufacturer: ASCO Power Technologies LP
Product Type: Switchgear – Low Voltage
Model Line: Power Control Systems (PCS)

Seismic Parameters

$S_{DS} = 2.00g$ for $z/h=1$ $I_p = 1.5$
 $S_{DS} = 2.46g$ for $z/h=0$

Building Codes

CBC 2022

TABLE 3

Table Description: Electrical Subcomponents for Base Mounted Units

Component	Manufacturer	Model	Description	Wt. (lb)	UUT
Breakers	Square D	P-FRAMEG/J/K/L	1,200A	31	4
		NW08N/L/H	800A	109	1a,3
		NW08L1/H1-H3	800A	109	Interp.
		MTZ08N/L/H	800A	109	Interp.
		MTZ08L1/H1-H3	800A	109	Interp.
		NW12N/L/H	1200A	109	Interp.
		NW16N/L/H	1600A	109	Interp.
		NW16L1/H1-H3	1600A	109	Interp.
		MTZ16N/L/H	1600A	109	Interp.
		MTZ16L1/H1-H3	1600A	109	Interp.
		NW20N/L/H	2000A	109	Interp.
		MTZ20N/L/H	2000A	109	Interp.
		NW20L1/H1-H3	2000A	127	Interp.
		MTZ20L1/H1-H3	2000A	127	Interp.
		NW25L/H	2500A	127	Interp.
		MTZ25L/H	2500A	127	Interp.
		NW30L/H	3000A	127	Interp.
		MTZ30L/H	3000A	127	Interp.
		MTZ32L1/H1-H3	3200A	127	Interp.
		MTZ2-32 H3	3200A	127	7
		NW32L1/H1-H3	3200A	227	Interp.
		NW40L/H	4000A	227	1b
		NW40L1/H1-H3	4000A	227	Interp.
		MTZ40L/H	4000A	227	Interp.
		MTZ40L1/H1-H3	4000A	227	Interp.
		NW50L/H	5000A	227	3
		NW50L1/H2/H3	5000A	227	Interp.
		MTZ50L/H	5000A	227	Interp.
MTZ50L1/H2/H3	5000A	227	Interp.		
MTZ3-50 H	5000A	227	7		
NW60L1/H2/H3	6000A	227	Interp.		
MTZ60L1/H2/H3	6000A	227	Interp.		
Transformers	ITI	20XSUM3	Summing Transformer	3	2
		19SHT	CT / 600V 300:5 to 3000:5	3	1a

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 $S_{DS} = 2.46g$ for $z/h=0$

Building Codes

CBC 2022

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Component	Manufacturer	Model	Description	Wt. (lb)	UUT
Transformers	ITI	568T	CT / 600V 400:5/1 to 5000:5/1	4	1b
		561	CT / 600V 150:5 to 4000:5	8	Interp.
		135	CT / 600V 150:5 to 5000:5	18	1b
		142	CT / 600V 400:5 to 6000:5	31	3
	Square D	3VTN460277FF	Potential Transformer	23	3
		CG0500480120F	Potential Transformer, Fuse	15	1a,1b,3
		S33579	Neut Current Transformer	7	Interp.
		S34036	Neut Current Transformer	25	1a,1b,3
		S48182	Neut Current Transformer	25	1a,1b,3
Power Supplies	Vicor	VIM13CW03	DC/DC Controller	2	Interp.
		VIMBW301	DC/DC Controller	2	2,3
		VIMW301	DC/DC Controller	2	1a,2,3
Relays/ Controllers	ASCO	267566		<1	1a,2,3
	Yokogawa	246955540AHD0		2	2
	Crompton	253PHDUNWBX		2	2
		253PVBUB		2	2
	Woodward	9907-175		4	3
	BASLER	BE3251A1N5		3	2
		CAD50BD		2	1a,3
	IDEC	LADN04		<1	1a,3
		RH1BUDC24V		<1	2
		RH2BULDC24V		<1	1a,2,3
		RH4BULDLC24V		<1	Interp.
		SH1B05		<1	2
		SH2B05		<1	2,3
SH4B05			<1	Interp.	
SY2S02F1			<1	2	
Controllers & Controller Components	Horner Automation Group	HE200ACM530-17		2	1a,3
		HE200CGM750-17		2	1b
		HE800DIM310-17		2	1a,3
		HE800DQM306-17		2	1a,3
		HE800ETN250-17		2	1a,3

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 $S_{DS} = 2.46g$ for $z/h=0$

Building Codes

CBC 2022

TABLE 3

Table Description: Electrical Subcomponents for Base Mounted Units

Component	Manufacturer	Model	Description	Wt. (lb)	UUT
Controllers & Controller Components	Horner Automation Group	HE800GCM911		2	1a,3
		HE800RCS250-17		2	1a,3
	GE	IC200CHS022		<1	1b
		IC200ALG230		<1	Interp.
		IC200CPUE05		<1	Interp.
		IC200GBI001		<1	1b
		IC200MDD844		<1	1b
		IC200MDL650		<1	Interp.
		IC200MDL750		<1	Interp.
		IC200PWR001		<1	1b
		IC200PWR002		<1	Interp.
		IC693BEM331		<1	1b
		IC693CPU372		<1	1b
		IC693PWR331		<1	1b
		IC695ACC302		<1	Interp.
		IC695ETM001		<1	Interp.
		IC695PSD140		<1	Interp.
		IC695CPE400		<1	Interp.
		IC695ACC403		<1	Interp.
		IC200CPUE05		<1	Interp.
IC695CPU315		2	Interp.		
IC693CHS397		2	1b		
IC695CHS007		3	Interp.		
Switches	ASCO	629800-004	Ethernet Comm. Module, 72E	1	1a,2,3
	B&B	MESR901	Converter, Modbus Gateway	<1	2
	MOXA	EDS205	Ethernet Switch, 5 port, 24VDC	<1	1a.3
		EDS308	Ethernet Switch, 8 port, 24VDC	1.4	Interp.
		EDS316	Ethernet Switch, 16 port, 24VDC	2.5	Interp.
		EDS316MMST	Ethernet Switch, 16 port, 24VDC	2.5	1a,3
	CHINT	985436	10A	<1	1a,2,3
		985437	10A	<1	1a,3
		985438	16A	<1	1a,1b,2
		985451	20A	<1	2
985230		20A	<1	Interp.	

UUT 1a

Test Report# Q0007-01-01-01

Manufacturer: ASCO Power Technologies LP
Model Line: Power Control Systems (PCS)
Model Number: 2H-B/C/C/B-3P
Serial Number: N/A

Highest Passed Test Level						
S _{DS}	z/h	I _p	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}
2.46	1		3.94	2.95	1.64	0.66
2.46	0	1.5				

Dimensions/Weights			
Depth (in)	Width (in)	Height (in)	Weight (lbs.)
72	26	91	3000

Lowest Natural Frequency (Hz)		
Front-Back	Side-Side	Vertical
4.7	15	15

Building Codes

CBC 2022

Test Criteria

ICC-ES AC156

Construction/Option Summary

NEMA Type 1, 11 ga. carbon steel enclosure

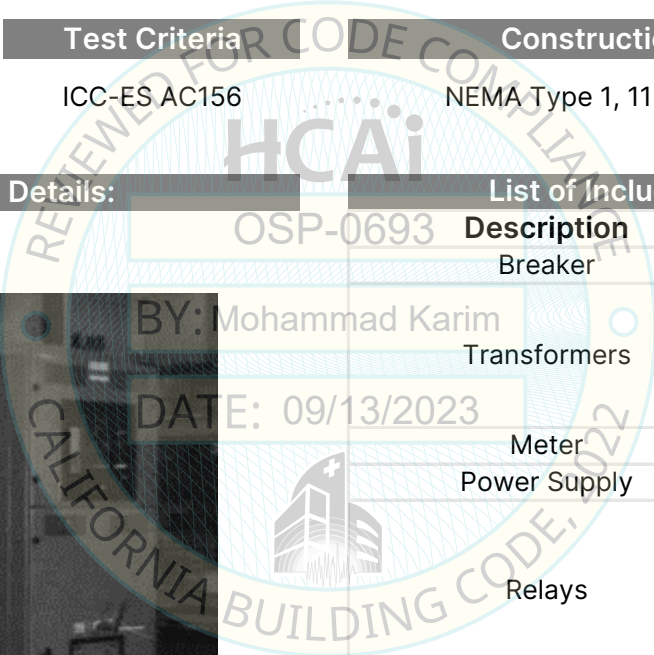
UUT Mounting Details:



UUT was rigid base mounted to table using (6) 1/2" Grade 8 bolts.
 Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Description	Model #
Breaker	NW08N/L/H
	19SHT
Transformers	CG0500480120F
	S34036
	S48182
Meter	629269-001
Power Supply	VIMW301
	267566
	CAD50BD
Relays	LADN04
	RH2BULDC24V
	SY4S02F1
Controllers	HE200ACM530-17
	HE800ACM310-17
	HE800DQM306-17
	HE800ETN250-17
	HE800GCM911
	HE800RCS250-17
Switches	985436
	985437
	985438
	CHM1D
	629800-004
	CA10A231600FT1
	CA10A232600FT1
	CA10A252600FT1
	EDS205
	EDS316MMST



UUT 2

Test Report# Q0007-03-01-01

Manufacturer: ASCO Power Technologies LP
Model Line: Power Control Systems (PCS)
Model Number: 0H-C/C/C/C
Serial Number: N/A

Highest Passed Test Level						
S _{DS}	z/h	I _p	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}
2.46	1					
2.46	0	1.5	3.94	2.95	1.64	0.66

Dimensions/Weights			
Depth (in)	Width (in)	Height (in)	Weight (lbs.)
24	26	91	500

Lowest Natural Frequency (Hz)		
Front-Back	Side-Side	Vertical
8.2	14	8.4

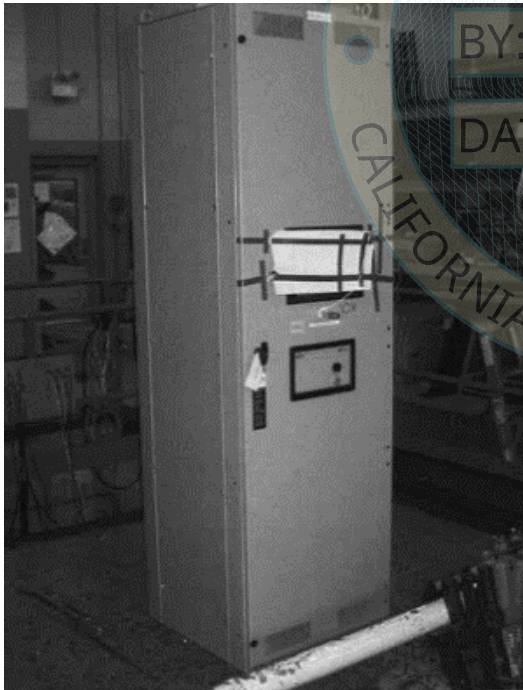
Building Codes
CBC 2022

Test Criteria
ICC-ES AC156

Construction/Option Summary
NEMA Type 1, 11 ga. carbon steel enclosure

UUT Mounting Details:

List of Included Subcomponents



UUT was rigid base mounted to table using (4) 1/2" Grade 8 bolts.
 Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

Description	Model #
Transformer	20XSUM3
Power Supplies	VIMBW301
	VIMW301
	267566
	246955540AHD0
	253PHDUNWBX
	253PVBU
	BE3251A1N5
	RH1BUDC24V
	RH2BULDC24V
	SH1B05
	SY2S02F1
	SY4S02F1
	985436
	985438
	985451
Relays	CHM1D
	943987001
	629800-004
Switches	MESR901
	HEQX651-16
Display & Interface Monitor	

UUT 3

Test Report# Q0007-04-01-01

Manufacturer: ASCO Power Technologies LP
Model Line: Power Control Systems (PCS)
Model Number: 4H-B/B/B/B-3P & 1H-B/X/C/C-3P
Serial Number: N/A

Highest Passed Test Level						
S _{DS}	z/h	I _p	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}
2.46	1	1.5	3.94	2.95	1.64	0.66
2.46	0					

Dimensions/Weights			
Depth (in)	Width (in)	Height (in)	Weight (lbs.)
84	66	110	8000

Lowest Natural Frequency (Hz)		
Front-Back	Side-Side	Vertical
4.7	2.5	28

Building Codes
CBC 2022

Test Criteria
ICC-ES AC156

Construction/Option Summary
NEMA Type 1, 11 ga. carbon steel enclosure

UUT Mounting Details:



UUT was rigid base mounted to table using (12) 1/2" Grade 8 bolts.
 Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Description	Model #
Breakers	NW08N/L/H
	NW50L/H
	142
Transformers	3VTN460277FF
	CG0500480120F
	S34036
	S48897
Meter	629269-001
Controllers	HE200ACM530-17
	HE800DIM310-17
	HE800DQM306-17
	HE800ETN250-17
	HE800GCM911
	HE800RCS250-17
	985436
	985437
Switches	CHM1D
	629800-004
	CA10A231600FT1
	CA10A232600FT1
	CA10A252600FT1
	EDS205
	EDS316MMST

