



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT

APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0437

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: KONE

Manufacturer's Technical Representative: Jorge Torres

Mailing Address: 450 Century Parkway, Allen, TX 75013

Telephone: (469) 854-8741

Email: JorgeAlberto.Torres@kone.com

Product Information

Product Name: LCE Traction Elevator Logic and Drive Controller w/ KDM 150 Drive

Product Model Number(s): See Attachment 1

Product Category: Elevator Equipment

Product Sub-Category: Elevator Controllers

General Description: Electronic motion control system for the operation of people-moving elevators.

Mounting Description: Base Mounted Rigid -

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: EASE LLC

Contact Person: Jonathan Roberson

Mailing Address: 5877 Pine Ave, Suite 210, Chino Hills, CA 91709

Telephone: (909) 606-7622

Email: j.roberson@easeco.com

Title: S.E.



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

Company Name: EASE LLC

Name: Jonathan Roberson

California License Number: S4197

Mailing Address: 5877 Pine Ave., Suite 210, Chino Hills, CA 91709

Telephone: (951) 295-1892

Email: jon@EASECo.com

Certification Method

☐ GR-63-Core

☒ ICC-ES AC156

☐ IEEE 344

☐ IEEE 693

☐ NEBS 3

☐ Other (Please Specify): _____

Testing Laboratory

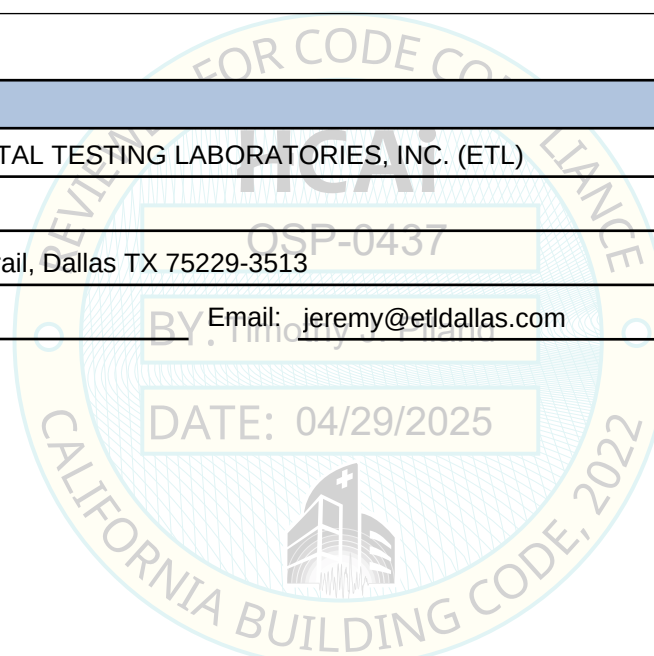
Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)

Contact Person: Jeremy Lange

Mailing Address: 11034 Indian Trail, Dallas TX 75229-3513

Telephone: (972) 247-9657

Email: jeremy@etldallas.com





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.44

SDs (Design spectral response acceleration at short period, g) = 2.00

a_p (Amplification factor) = 1

R_p (Response modification factor) = 2.5

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1

Natural frequencies (Hz) = See Attachment 2

Overall dimensions and weight = See Attachment 1, Table 1

HCAI Approval (For Office Use Only) - Approval Expires on 04/29/2031

Date: 4/29/2025

Name: Timothy Piland

Title: Senior Structural Engineer

Special Seismic Certification Valid Up to: SDs (g) = 2.00

z/h = 1

Condition of Approval (if applicable):

ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

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TABLE 1: SEISMIC CERTIFIED COMPONENTS

Manufacturer	KONE								
Product Line	LCE Traction Elevator Logic and Drive Controller w/ KDM 150 Drive								
COMPONENT	MANUF.	MODEL NO.	DIMENSIONS (IN.)			APPROX. WT. (LB.)	MOUNT	BASIS	
			W	D	H				
LCE2 LOGIC & DRIVE CONTROLLERS									
ReSolve 400 – LCE2 Traction Elevator Logic Controller	KONE	51086260D20	20.2	14.1	84.5	256	Floor	UUT1	
KDM 150 Drive Machine Controller Assembly ^[2]	KONE	50077900C01	20.5	20.8	73.0	600			
KCM 831 - LCE2 Traction Elevator Logic Controller	KONE	51086260D20	20.2	14.1	84.5	256	Floor	UUT2	
KDM 150 Drive Machine Controller Assembly ^[2]	KONE	50077900C01	20.5	20.8	73.0	600			
EXTERNAL MAIN LINE TRANSFORMERS ^[3]									
110 KVA Transformer 208V-240V	Nova Magnetics	KM785076G09	25.0	14.0	34.0	558	Floor	UUT3	
110 KVA Transformer 440V-500V	Nova Magnetics	KM785077G09	18.0	16.5	27.5	230	Floor	INT	
110 KVA Transformer 575V-600V	Nova Magnetics	KM785078G09	21.0	18.0	31.0	370	Floor	INT	
90 KVA Transformer 208V-240V	Nova Magnetics	KM785076G08	25.0	14.0	34.0	360	Floor	INT	
90 KVA Transformer 440V-500V	Nova Magnetics	KM785077G08	18.0	16.5	27.5	205	Floor	INT	
90 KVA Transformer 575V-600V	Nova Magnetics	KM785078G08	21.0	18.0	31.0	325	Floor	INT	
70 KVA Transformer 208V-240V	Nova Magnetics	KM785076G07	21.0	18.0	31.0	320	Floor	INT	
70 KVA Transformer 440V-500V	Nova Magnetics	KM785077G07	18.0	16.5	27.5	180	Floor	INT	
70 KVA Transformer 575V-600V	Nova Magnetics	KM785078G07	18.0	16.5	27.5	265	Floor	INT	
55 KVA Transformer 200V - 240V	Nova Magnetics	KM785076G05	17.3	16.0	27.4	281	Floor	UUT5	
55 KVA Transformer 440V - 500V	Nova Magnetics	KM785077G05	18.0	16.5	27.5	175	Floor	INT	
55 KVA Transformer 575V - 600V	Nova Magnetics	KM785078G05	18.0	16.5	27.5	230	Floor	INT	
10 KVA Transformer 200V - 240V	Nova Magnetics	KM785076G06	13.5	13.5	18.0	95	Floor	INT	
10 KVA Transformer 440V - 500V	Nova Magnetics	KM785077G06	12.8	13.0	18.0	66	Floor	UUT6	
10 KVA Transformer 575V - 600V	Nova Magnetics	KM785078G06	13.5	13.5	18.0	71	Floor	INT	
Mount	Floor (Rigid Base) Mount: free-standing, base-mounted tower configuration with the component rigidly attached to a supporting structure and no lateral support above the base.								
Notes	1. BASIS: - UUT#: Indicates that a test specimen matching these characteristics was tested as part of this testing program. - INT (Interpolate/Extrapolate): indicates a model that was not specifically tested, and by which seismic certification is established through evaluation of testing of other, similar models in the product line 2. Test specimen included enhancements not found on then-standard production units. These enhancements are a necessary and essential condition for Seismic Qualification. 3. Dry type main line transformers with copper windings.								

ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

ATTACHMENT PAGE | 2 OF 2

TABLE 2: SEISMIC CERTIFIED SUBCOMPONENTS

SUBCOMPONENT DESCRIPTION		MANUFACTURER	PART NO.	MATERIAL	BASIS
RESOLVE 400 & KCM 831 LOGIC CONTROLLERS		KONE INDUSTRIAL	51086260D20		UUT1 UUT2
TRANSFORMER, CONTROL, POS. 245, 208 - 240VAC, 1350VA		GRAND TRANSFORMERS INC	KM977496G02	Laminated Steel / Copper windings / Varnished / Open Core	UUT1
TRANSFORMER, CONTROL, POS. 245, 420 - 480 VAC, 1350VA		GRAND TRANSFORMERS INC	KM977496G01	Laminated Steel / Copper windings / Varnished / Open Core	UUT2
KONE KDM 150 Drive Controller		KONE INDUSTRIAL	50077900C01		UUT1 UUT2
CABINET MECHANICS		PREMEC OY	KM50057160G02	Galvanized CRS / Painted CRS	UUT1 UUT2
AC DRIVE, VACON KR8 150A		VACON OYJ	KM50077901G01	Aluminum / Galvanized CRS / FR4 PCB / Plastic / Copper	UUT1 UUT2
Notes	1. BASIS: • UUT#: Indicates that a test specimen matching these characteristics was tested as part of this testing program. • INT (Interpolate/Extrapolate): indicates a model that was not specifically tested, and by which seismic certification is established through evaluation of testing of other, similar models in the product line. 2. Certification in this table is limited subcomponents identified when installed as part of a complete assembly of the equipment defined in Table 1. 3. CRS = Cold-Rolled Sheet-Steel. 4. FR4 PCB = Copper-clad, epoxy-fiberglass substrate, printed circuit board (PCB) material.				

ATTACHMENT 2: TEST SPECIMEN SUMMARY

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UUT- 1				ReSolve 400 LCE Logic Drive Controller Assembly w/ KDM 150 Drive				
MANUFACTURER:		KONE Inc.						
IDENTIFICATION:		ReSolve 400		KDM 150				
		51086260D20		50077900C01				
DESCRIPTION:		ReSolve 400 - LCE2 Traction Elevator Logic Controller: for Induction Motor Applications Input: 208 - 600 Vac, 6A maximum, 1ph, 50/60 Hz; Outputs: brake/door circuit 230 Vac, 1ph, 50/60 Hz, 6 A; safety circuit 120/230Vac, 1ph, 50/60 Hz, 1A; logic circuits 24 Vdc, 3 A per circuit. KDM150 Traction Elevator Drive Machine Controller: Input: 400 Vac, 3-ph, 50/60 Hz, 125 A; Outputs: motor circuit 0 - 400 Vac, 3-ph, 0-250 Hz, 140 A maximum nominal, 69 kW/93hp at 400V; brake circuits (2) 200 Vdc, 8 A pick, 4 A hold, Enclosure Type 1. Cabinets are connected at common side: • Top of KDM 150 Drive cabinet with (3) – M8-8.8 hex head bolts with hex nuts. • Lower edge with (2) – M8-8.8 hex head bolts with hex nuts See subcomponent listing in Table 2 for additional information						
MOUNTING:		Floor mounted using: ReSolve 400: (5) – 3/8" diameter Grade 8 and KDM 150: (5) – 5/8" diameter Grade 8 bolts.						
								
PROPERTIES:								
DIMENSIONS (in.)				Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)			
Width	Depth	Height	Front-Axis		Side-Axis	Vertical-Axis		
20.22	14.1	84.51	6.2		6.5	43.2		
20.43	20.75	73.03	595	6.3	8.5	27.8		
SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	S _{DS} (g)	z/h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.34	0.54
Unit maintained structural integrity and functionality after the ICC-ES AC 156 test								

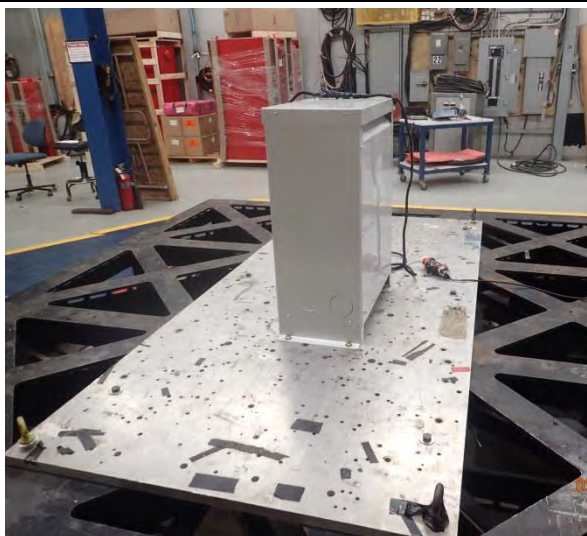
ATTACHMENT 2: TEST SPECIMEN SUMMARY

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UUT- 2		KCM 831 LCE Logic Drive Controller Assembly w/ KDM 150 Drive						
MANUFACTURER:		KONE Inc.						
IDENTIFICATION:		KCM 831	KDM 150					
		51086260D20	50077900C01					
DESCRIPTION:		KCM831 - LCE2 Traction Elevator Logic Controller: for MX32 Permanent Magnet Motor Applications Input: 208 - 600 Vac, 6A maximum, 1ph, 50/60 Hz; Outputs: brake/door circuit 230 Vac, 1ph, 50/60 Hz, 6 A; safety circuit 120/230Vac, 1ph, 50/60 Hz, 1A; logic circuits 24 Vdc, 3 A per circuit. KDM150 Traction Elevator Drive Machine Controller: Input: 400 Vac, 3-ph, 50/60 Hz, 125 A; Outputs: motor circuit 0 - 400 Vac, 3-ph, 0-250 Hz, 140 A maximum nominal, 69 kW/93hp at 400V; brake circuits (2) 200 Vdc, 8 A pick, 4 A hold, Enclosure Type 1. Cabinets are connected at common side: • Top of KDM 150 Drive cabinet with (3) – M8-8.8 hex head bolts with hex nuts. • Lower edge with (2) – M8-8.8 hex head bolts with hex nuts See subcomponent listing in Table 2 for additional information						
MOUNTING:		Floor mounted using: KCM 831: (5) – 3/8" diameter Grade 8 and KDM 150: (5) – 5/8" diameter Grade 8 bolts.						
								
PROPERTIES:								
BY: Timothy J. Piland								
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)				
Width	Depth	Height		Front-Axis	Side-Axis	Vertical-Axis		
20.22	14.1	84.51	250	5.6	8.1	>50		
20.43	20.75	73.03	600	5.6	8.1	>50		
SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	S _{DS} (g)	z/h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.34	0.54
Unit maintained structural integrity and functionality after the ICC-ES AC 156 test								

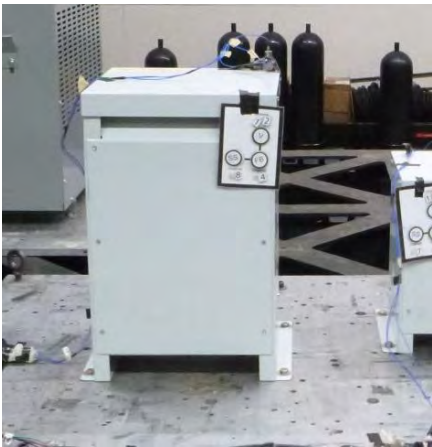
ATTACHMENT 2: TEST SPECIMEN SUMMARY

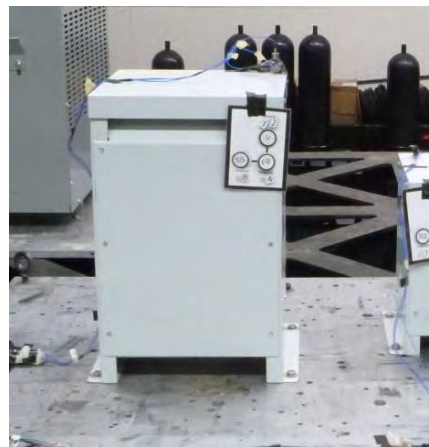
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UUT- 3				110 KVA Transformer 200V-240V					
MANUFACTURER:		Nova Magnetics							
IDENTIFICATION:		KM785078G09							
DESCRIPTION:		Component of the LCE Elevator Control System 110 KVA Transformer 200V-240V dry type transformer, open core & coil with copper windings.							
MOUNTING:		Floor mounted using (4) – 1/2” diameter Grade 8 hex head bolts to test fixture.							
									
PROPERTIES:									
DIMENSIONS (in.)					LOWEST RESONANT FREQUENCY (Hz.)				
Width	Depth	Height	Weight (lb.)		Side -Axis	Front-Axis	Vertical-Axis		
25.0	14.0	340	558		15.5	43.0	31.0		
SHAKE TABLE TEST PARAMETERS									
CODE	TEST CRITERIA	S _{DS} (g)	z/h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)	
CBC 2022	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.34	0.54	
Unit maintained structural integrity and functionality after the ICC-ES AC 156 test									

ATTACHMENT 2: TEST SPECIMEN SUMMARY

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UUT- 5		55kVa Transformer						
MANUFACTURER:		Nova Magnetics						
IDENTIFICATION:		Model No.: KM785076G05						
DESCRIPTION:		Component of the LCE Elevator Control System Dry type transformer, open core & coil with copper windings.						
MOUNTING:		Floor mounted using (4) – 1/2” diameter Grade 8 hex head bolts to test fixture.						
								
PROPERTIES:								
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)				
Width	Depth	Height		Front-Axis	Side-Axis	Vertical-Axis		
17.25	16	27.375		12.2	17.6	46.9		
SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	S _{DS} (g)	z/h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.34	0.54
Unit maintained structural integrity and functionality after the ICC-ES AC 156 test								



UUT- 6		10kVa autotransformer						
MANUFACTURER:		Nova Magnetics						
IDENTIFICATION:		Model No.: KM785077G06						
DESCRIPTION:		Component of the LCE Elevator Control System Dry type transformer, open core & coil with copper windings.						
MOUNTING:		Floor mounted using (4) – 1/2” diameter Grade 8 hex head bolts to test fixture.						
								
PROPERTIES:								
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)				
Width	Depth	Height		Side -Axis	Front-Axis	Vertical-Axis		
12.75	13	18		26.6	19.3	38.8		
SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	S _{DS} (g)	z/h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.34	0.54
Unit maintained structural integrity and functionality after the ICC-ES AC 156 test								

