CERTIFICATION PREAPPROVAL (OSP)	APPLICATION #: OSP – 0333
OSHPD Special Seismic Certification Preapproval (OSP)	
Type: ☐ New ☐ Renewal	
Manufacturer Information	
Manufacturer: TRANE	
Manufacturer's Technical Representative: Tom Troyanek	
Mailing Address: 3600 Pammel Creek Road, La Crosse, WI 54601	
Telephone: (608) 787-3447 Email: troyan	ek@trane.com
Product Information	MA
Product Name: TR200 Drives & Panels	T ₁
Product Type: Variable Frequency Drives OSP-0333	C.
Product Model Number: D1h, D2h, D5h, D6h, D7h & D8h frame size (List all unique product identification numbers and/or part numbers) O1h J Pilat General Description: Variable frequency drives for the control of independent	
DATE: 03/15/2021	
Mounting Description: Rigid base mounted, rigid wall mounted and rigid	gid wall/floor mounted. See attachments.
	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
Applicant Information Applicant Company Name: EASE	.00V
Applicant Company Name: EASE	
Contact Person: Jonathan Roberson, S.E.	
Mailing Address: _5877 Pine Ave, Suite 210, Chino Hills, CA. 91709	
Telephone: (909) 606-7622 Email: <u>j.robers</u>	son@easeco.com
I hereby agree to reimburse the Office of Statewide Health Faccordance with the California Administrative Code, 2016.	·
Signature of Applicant:	Date: October 1, 2019
Title: Principal Structural Engineer Company Name: EASE	

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"





California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)
Company Name: EASE
Name: Jonathan Roberson, S.E. California License Number: S4197
Mailing Address: _ 5877 Pine Ave, Suite 210, Chino Hills, CA. 91709
Telephone: (909) 606-7622 Email: j.roberson@easeco.com
Supports and Attachments Preapproval
 Supports and attachments are preapproved under OPM- (Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required) Supports and attachments are not preapproved
Certification Method
 ✓ Testing in accordance with: ✓ ICC-ES AC156 ✓ Other (Please Specify):
BY:Timothy J Piland
Testing Laboratory DATE: 03/15/2021
Company Name: Environmental Testing Laboratory, Inc.
Contact Name: Brady Richard
Mailing Address: 11034 Indian Trail, Dallas, TX. 75229-3513
Telephone: (972) 247-9657 Email: brady@etldallas.com



03/15/2021

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OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

Seismic Parameters
Design in accordance with ASCE 7-10 Chapter 13: ⊠ Yes ☐ No
Design Basis of Equipment or Components (F _p /W _p) = 1.95g
S _{DS} (Design spectral response acceleration at short period, g) = 2.60
a _p (In-structure equipment or component amplification factor) = <u>2½</u>
R _p (Equipment or component response modification factor) =6
Ω_0 (System overstrength factor) =2
I _p (Importance factor) = 1.5
z/h (Height factor ratio) = 1
Equipment or Component Natural Frequencies (Hz) = See Attachment 2
Overall dimensions and weight (or range thereof) = See Attachment 1
Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: Yes No
Design Basis of Equipment or Components (V/W) =
S _{DS} (Design spectral response acceleration at short period, g) =
S _{D1} (Design spectral response acceleration at 1 second period, g) =
R (Response modification coefficient) =
Ω_0 (System overstrength factor) = $\underline{\text{By:Timothy J Piland}}$
C _d (Deflection amplification factor) =
I_p (Importance factor) = 1.5 DATE: 03/15/2021
Height to Center of Gravity above base =
Equipment or Component Natural Frequencies (Hz) =
Overall dimensions and weight (or range thereof) =
Tank(s) designed in accordance with ASME BPVC, 2015: ☐ Yes ☒ No
List of Attachments Supporting Special Seismic Certification
Other(s) (Please Specify): Attachments 1 & 2
OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2025
11/1 P
Signature: Date: March 15, 2021 Print Name: Timothy J. Piland Title: SSE
Special Seismic Certification Valid Up to: $S_{DS}(g) = \underline{2.60}$ $z/h = \underline{1}$
Condition of Approval (if applicable):

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"



OSHPD

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ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

ATTACHMENT PAGE | 1 OF 6

TABLE 1: TRANE TR200 DRIVE & CLASSIC PANEL CHARACTERISTICS

Product Line	REVISED DE TRANE TR2	-FRAME DRIVI 00 Drives	E MODEL	BASI TR-2	E DRIVE MO 00		LASSIC PA 200	NEL	
FRAME	DRIVE [1]	DRIVE /	TYPE		DIMENSION	· · · · · · · · · · · · · · · · · · ·	MAX WT		
SIZE	HP RANGE	PANEL [2]	CODE [3]	WIDTH	DEPTH	HEIGHT	(LBS.)	MOUNT	BASIS [4]
		Drive	TR-200*	12.8	14.9	35.5	165	Wall	UUT-1
D1h	75 – 250	Tier 2	T200*	29.7	16.4	47.6	420	Wall	INT
		Tier 3	T200*	46.3	16.4	47.6	585	Wall	INT
		Drive	TR-200*	16.5	14.9	43.6	283	Wall	INT
D2h	250 – 450	Tier 2	T200*	33.5	16.4	62.6	630	Wall	INT
		Tier 3	T200*	50.1	16.4	62.6	1070	Wall	UUT-3
D5h	75 – 250	Drive / Tier 1	TR-200*	12.8	15.0	52.1	219	Wall	INT
D6h	250 – 450	Drive / Tier 1	TR-200*	12.8	15.0	65.6	290	Wall	UUT-2
DRIVES WIT	H PEDESTAL	BASE		2007					
D1h	75 – 250	Drive / Tier 1	TR-200*	12.8	C 14.9	51.2	176	Floor	UUT-4
					MAN			Wall/Floor	UUT-5
D2h	250 – 450	Drive / Tier 1	TR-200*	16.5	14.9	59.3	300	Wall/Floor	INT
D5h	75 – 250	Drive / Tier 1	TR-200*	12.8	15.0	60.0	255	Wall/Floor	INT
D6h	250 – 450	Drive / Tier 1	TR-200*	12.8	15.0	73.4	301	Wall/Floor	INT
D7h	75 – 250	Drive / Tier 1	TR-200*	SH6.533	3 15.1	77.9	407	Wall/Floor	INT
D8h	250 – 450	Drive / Tier 1	TR-200*	16.5	15.8	89.9	540	Wall/Floor	UUT-6
Certified	Wall/Floor: com component to a Wall: fully supp	above the base. ponent is rigidly att n adjacent wall or conted by a building ransformers: GE 57	ached to a supporting wall structure.	structure.	re at its base, v	200	lateral restrain	it at the top and	choring the
Sub- Assemblies	 Drive Fus Main fuse Circuit Br Electronic Electro-M Undervolt None, 2 c Main Disc Brake IGI Safe Stop RFI filter A, B, C, E 	ses: Bussmann 315 ses: Bussmann 200 eakers: See Table cally Controlled Byp lechanical Bypass (age protection, Aut or 3 contactor Bypas connect Switch, Dri BT O Class A1 & A2 O option cards	-800 Amps -600 Amps 2 pass (ECB) or EMB or 3MB for comatic Bypass, as circuit we Disconnect S	or NEMA/UL Ty	ype 3R) with o			r Drive and Byp	ass, Bypass
Notes	2. See Figure 3. Identification above, "*" Certification Certification Certification UUT#	oltages of 380-690\ 2 1: Classic Panel Ton: Type Codes (T/ indicates a variable fied drive Type Code drive Type Code 4: Indicates that a telephology indicate that a telephology indicate and evaluation of telephology in the context of the context	ier Visual Ident C) are alphanur defined as folke es are listed in des are listed in est specimen mes a model that	meric sequence bws: Figure 2. Figure 3. atching these was not spec	characteristics	was tested. and by which s	J		

ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

ATTACHMENT PAGE | 2 OF 6

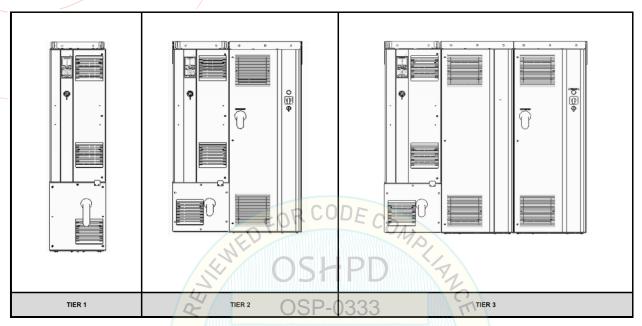


FIGURE 1: CLASSIC PANEL TIER VISUAL IDENTIFICATION

BY:Timothy J Piland

TABLE 2: TRANE TR200 DRIVE CIRCUIT BREAKERS

Drive Manufacturer P/N	Amp Rating
34057800	250
34057900	400
34058000	600
34059900	800
177G5088	320
177G5089	400
177G5090	480
177G5091	600
177G5092	800

ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

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FIGURE 2: CERTIFIED DRIVE TYPE CODES

Т	R	 -	2	0	0																																	
_1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39

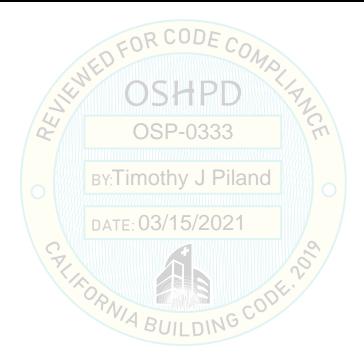
Character	Parameter	Allowed Value	Description
1-6	Product Group	TR-200	Trane HVAC Drive
1 0	1 Toddot Group	N55K	55 kW / 75 HP
		N75K	75 kW / 100 HP
		N90K	90 kW / 125 HP
		N110	110 kW / 150 HP
7-10	Power Size	N132	132 kW / 200 HP
7-10	1 OWEI OIZE	N160	160 kW / 250 HP
		N200	200 kW / 300 HP
		N250	250 kW / 350 HP
		N315	315 kW / 450 HP
	AC Line	T4	Three phase 380-480 VAC
11-12		T5	Three phase 380-500 VAC
11-12	Voltage		
		T7	Three phase 525-690 VAC
		E21	IP 21 / Type 1
		E2D	IP 21 / Type 1 – D1h frame
		E54	IP 54 /Type 12
13-15	Enclosure	E5D	IP 54 /Type 12 – D1h frame
		E2M	IP 21 / Type 1 with mains shield
		E5M	IP 54 / Type 12 with mains shield
		H21	IP 21 / Type 1 with heater
		H54	IP 54 / Type 12 with heater
16-17	RFI filter	H2 _{DV} T;	RFI Class A2
		////H4 ^{BY.}	RFI class A1
		X	No brake IGBT
	\	////B	Brake IGBT
18	Breaking & Safety	TDATE	Safe Stop
		R	Regeneration terminals
		V U	Brake IGBT plus Safe Stop
		X	Blank faceplate, no LCP installed
19	LCP Display	N	Numerical Local Control Panel (LCP-101)
		G	Graphical Local Control Panel (LCP-102)
20	PCB Coating	C	Coated PCB
	· ·	R	Coated PCB + ruggedised
		Х	No mains option
		7	Fuses
21	Mains Input	3	Mains disconnect + fuse
	·	4	Mains contactor + fuse
		Е	Mains disconnect + contactor + fuse
		J	Circuit breaker + fuse
22	Hardware A	X	Standard cable entries
23	Hardware B	X	No adaptation
		Q	Heat-sink access panel
24-27	Special Version	SXXX	No Option
28	LCP Language	X	Standard language package
		AX	No option
		A0	PROFIBUS DP V1 MCA 101
		A4	DeviceNet MCA 104
		AE	BACNet MCA 116
		AF	LonWorks MCA 115
29-30	Fieldbus	AG	LonWorks MCA 108
23-30	า เฮเนมนอ	AJ	BACNet MCA 109
		AL	PROFINET MCA 120
			EtherNet/IP MCA 121
		AN	
		AQ	Modbus TCP MCA 122
		AV	DeviceNet Converter MCA 194



ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

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Character	Parameter	Allowed Value	Description
		BX	No application option
		/ B0	Analog I/O Option MCB 109
		/ B2	PTC Thermistor Card MCB 112
31-32	Application	B4	Sensor Input Card MCB 114
		B5	Programmable I/O Option Module MCB 115
		BK	General Purpose MCB 101
		BP	MCB 105 Relay Expansion
		BW	Real Time Clock MCB 116
33-34	Motion Control	CX	No motion control option
35	Extended Relay	Х	No selection
36-37	Motion Software	XX	No software option
38-39	Control Power	DX	No DC input installed
	Backup Input		
		D0	24 V DC Supply Option MCB 107



ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

ATTACHMENT PAGE | 5 OF 6

FIGURE 3: CERTIFIED PANEL TYPE CODES

/	L	2	0	0																																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

Character	Parameter	Allowed Value	Description
1	Prefix	T	Trane
2-4	Series	200	Trane
	201100	150	150 HP
		200	200 HP
		250	250 HP
5-7	Power Size	300	300 HP
		350	350 HP
		400	400 HP
		T4	460 Volts
8-9	Voltage	T6	600 Volts
		E01	Nema 1
10-12	Enclosure Type	E12	Nema 12
		NO	No Bypass
13-14	Bypass Circuit	2C	2 Contactor Bypass
10 14	Буразо опочи	3C	3 Contactor Bypass
		D	Drive Disconnect Switch
		M	Main Disconnect Switch
15	Switches	C	Main Circuit Breaker
10	Owiteries	N	Main & Drive Disconnect Switches
		F F	Main Circuit Breaker & Drive Disconnect Switch
		X	None None
		D	Drive Fusing
16	Power Fusing	M	Main & Drive Fusing
		N BY:Ti	100 kAIC Label
		X	None
		1	ECB Package
17	Control Selection A	2 DATE	EMB 2 Package
17	Control Selection A	A DATE	
		\	EMB 1 Package
		4	EMB Package
		X 3	None
18	Reactors		3% Input Line Reactor
		D	Output Filter dV/dt Filter
		E	Both Reactor & Filter
19	Power Rating Style	X	P Style Power Rating
		N	N Style Power Rating
20	Motor Quantity	S	Single Motor
	<u> </u>	C	Contactor Motor Select
		U	150 HP 200 HP
21	Motor 1		250 HP
		V	
		W	300 HP
			150 HP
22	Motor 2	V	200 HP
			250 HP
20	Future Ontine	W Z	300 HP
23	Future Option		No Future Option Std. RFI
24	RFI Filter	X	Class A1
		4	
		X	No Brake Chopper
25	Brake & Stop	В	Brake Chopper
	•	T	Safe Stop
		U	Brake Chopper & Safe Stop
00	Diamin	X	Blank cover
26	Display	N	Numerical
		G	Graphical
27	Coating	С	Conformal
28	Adaptation A	X	No Adaptation
29	Adaptation B	X	No Adaptation
30-32	Software	XXX	Latest Release
33	Software Language	X	Standard Language Package



ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

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Character	Parameter	Allowed Value	Description
		/ X	No Option
		/ 4	DeviceNet MCA 104
		/ J	BACNet MCA 109
		/ Q	Modbus TCP
	/	G	Lon Works MCA 108
	Options A	L	Profinet MCA 120
34	Options A	N	Ethernet/IP MCA 121
		0	Profibus DP V1
		Q	Modbus MCA 122
		T	3000 Converter (FC302only)
		U	5000 Converter (FC302only)
		6	CanOpen (FC302 only))
		8	EtherCAT (FC302 only
		X	No Option
		0	Analog I/O MCB 109
		2	PTC Thermistor Card
		4	Sensor Input Card
35	Options B	K	General Purpose I/O MCB 101
33	Options B	P	Relay Card MCB 105
		R	CL Encoder
		U	CL Resolver
		Y	Extended Cascade Control
		/Z/	Safety PLC Interface
		X	No Selection
36	Options C1	4/ 4	SyncPos
		Q / 5	Advanced Control
37	Options C2	X	No Selection
31	Options G2	R	Extended Relay Card
		XX _{DV} .Ti	No software option
38-39	Options C3	//////10	Synchro. Control
30-38	Options C3	<pre>//////11/////////////////////////////</pre>	Positioning Control
		12	Center Winder
40	Options D	W/X DATE	No option / Z U Z
40	Options D	0	Interface for 24V dc MCB 107

PIROPNIA BUILDING CODE: 20

ATTACHMENT 2: TEST SPECIMEN SUMMARY

ATTACHMENT PAGE | 1 OF 2

TABLE 1: SHAKE TABLE TEST PARAMETERS

	BUILDING CODE	TEST CRITERIA	S _{DS}	z/h	lР	A _{FLX-H}	A RIG-H	A _{FLX-V}	ARIG-V
/	IBC 2015 / CBC 2016	ICC-ES AC156	2.6	1.0	1.5	4.16	3.12	1.74	0.70

All test specimens below maintained structural integrity and functionality at the conclusion of all testing.

UUT-1: D1h FRAME DRIVE

132 kW / 200 HP Coated PCB Description: Fuses

Three-phase 380-600 VAC

IP 21 /Type 1 enclosure Standard Cable Entries RFI Class A1 Option Card:

No Brake IGBT -MCA 121 Ethernet IP

Graphical Local Control Panel -MCB 101 General Purpose I/O -MCO 351 Positioning control

Wall mounted w/ (4) - $\frac{1}{4}$ " self-tapping screws w/ 1 - $\frac{1}{4}$ " OD fender washers Mounting:

Dimensions: W (in.) D (in.) H (in.)

14.5 33.2 12.8

Weight: 161 lbs.

Resonance X-Axis Y-Axis Z-Axis Frequencies:

Identification P/N: 134H0949

UUT-2: D6h FRAME DRIVE

Description: 132 kW / 200 HP Coated PCB

Three-phase 525-690 VAC Mains Disconnect, contactor and fuse

IP 54 /Type 12 enclosure Standard Cable Entries Option Card: RFI Class A2

-MCA 121 Ethernet IP Brake IGBT

Graphical Local Control Panel -MCB 101 General Purpose I/O Heater -MCO 351 Positioning control

Mounting: Wall mounted w/ (4) - $\frac{1}{4}$ " self-tapping screws w/ 1 - $\frac{1}{4}$ " OD fender washers

Dimensions: W (in.) D (in.) H (in.)

63.6 12.8 14.625

286.5 lbs.

Resonance X-Axis Y-Axis

Frequencies:

Identification: P/N:134H0931

Weight:





D2h FRAME TIER 3 PANEL UUT-3:

250 kW / 350 HP Coated PCB Description:

Three-phase 380-480 VAC Fuses

IP 54 /Type 12 enclosure (Drive) Standard Cable Entries Type 1 enclosure (Panel) 2 Contactor Bypass RFI Class A2 Main Circuit Breaker No Brake IGBT Drive Disconnect Switch

Graphical Local Control Panel Drive Fusing Line Reactor EMB 2 Package Output dV/dt Filter Standard RFI

Wall mounted using (16) - $\frac{1}{4}$ " self-tapping screws w/ 1 – $\frac{1}{4}$ " OD Fender washers Mounting:

Dimensions: W (in.) D (in.) H (in.)

> 49.7 14.6 61.125

Weight: 1070 lbs.

Resonance X-Axis Y-Axis

Z-Axis Frequencies:

Identification: P/N: 131Z8887



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ATTACHMENT 2: TEST SPECIMEN SUMMARY

UUT-4: D1h FRAME DRIVE

Description: 132 kW / 200 HP Coated PCB

Three-phase 525-690 VAC Fuses IP 21 /Type 1 enclosure Standa

IP 21 /Type 1 enclosure Standard Cable Entries RFI Class A2 Option Card :

No Brake IGBT -MCA 121 Ethernet IP

Graphical Local Control Panel

-MCB 101 General Purpose I/O

Pedestal base

-MCO 351 Positioning control

Mounting: Rigid Base (Floor) Mounted using (4) 1/2" Grade 5 Allen Head Cap Screws w/ washers

Dimensions: W (in.) D (in.) H (in.)
12.8 14.5 48.9

Weight: 142 lbs.

Resonance X-Axis Y-Axis Z-Axis Frequencies: 15.6 15.4 12.8

Identification: P/N:134H0952



UUT-5: D1h FRAME DRIVE

Description: 132 kW / 200 HP Coated PCB
Three-phase 525-690 VAC Fuses

IP 54 /Type 12 enclosure Standard Cable Entries

RFI Class A2 Option Card :
Brake IGBT -MCA 121 Ethernet IP

Graphical Local Control Pane -MCB 101 General Purpose I/O
Pedestal Base -MCO 351 Positioning control

Mounting: Wall/Floor mounted using (4) - 3/8 " Bolts to the floor and

(4) – ¼" self-tapping screws at top anchor point.

Dimensions: W (in.) D (in.) H (in.)

12.75 14.5 48.875

Weight: 142 lbs.

Resonance X-Axis Y-Axis Z-Axis

Frequencies: ___ Identification: P/N:134H0950



UUT-6: D8h FRAME DRIVE

Description: 250 kW / 350 HP Coated PCB

Three-phase 380-500 VAC Mains Disconnect, contactor and fuse

IP 54 /Type 12 enclosure Standard Cable Entries

RFI Class A1 Option Card :
Brake IGBT -MCA 121 Ethernet IP

Graphical Local Control Panel

-MCB 101 General Purpose I/O
Heater

-MCO 351 Positioning control

Mounting: Wall/Floor mounted using (4) - 3/8" gr 8 bolts to floor plate and

(2) - 1/4" self-tapping screws at top anchor point.

Dimensions: W (in.) D (in.) H (in.)

16.6 14.625 80.25

Weight: 540 lbs.

Identification: P/N: 134H0930

