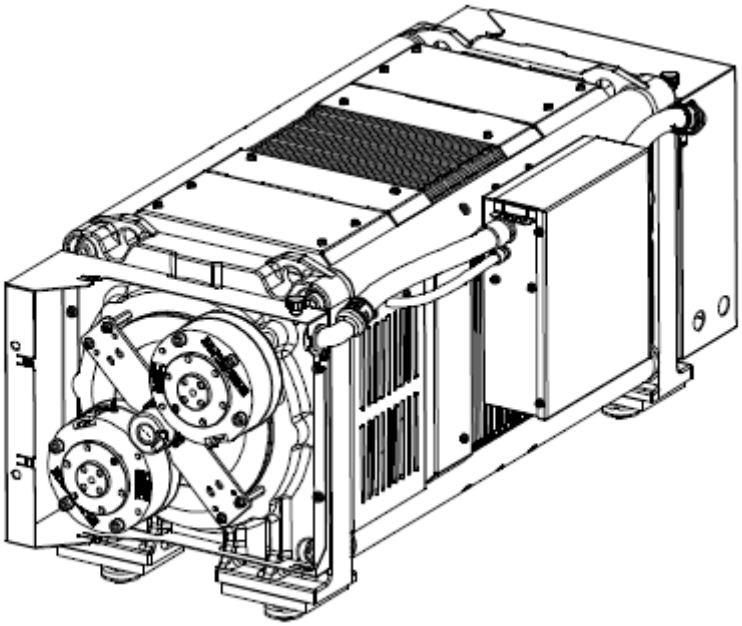
Ascensores Schindler de Colombia S.A.S
MDC

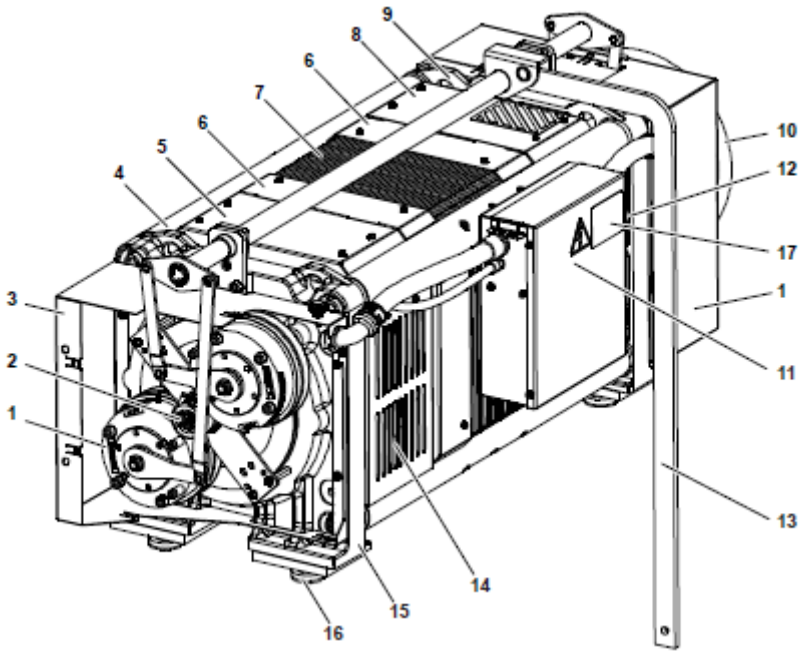
PML160/ 200 de Yaskawa



DR PML 160/200 información técnica máquina sin reductor

Acerca de este Documento
Este manual se muestra información técnica acerca del componente, para uso de revisión en certificación Retie.

1. Vista General



1- Freno
2- Encoder
3- Cubierta freno
4- Soporte
5- Ventiladores
6- Cubierta de motor
7- Estator
8- Cubierta de máquina
9- Argolla de elevación
10- Volante (para MMR)
11- Caja de conexiones
12- Boton de parada
13- Liberación manual de freno(MMR)
14- Polea de tracción
15- Base de cojinete
16- Bases amortiguadoras
17- Placa de identificación

2. Características de funcionamiento específicas

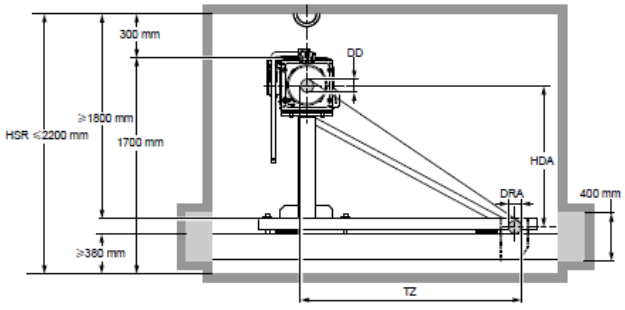
Item	Abbr.	Value
Rated Load [1]	GQ	630 ... 2500 kg
Rated Speed of Car [1]	VKN	1.0 ... 3.0 m/s
Travel Height	HQ	≤ 150 m
Reeving Factor Nominal	KZU	2:1
Admissible Resultant Radial Force on Traction Sheave	FDRZ	18 ... 48 kN
Traction Sheave Diameter FML/PML 160	DD	125 mm
Traction Sheave Diameter FML/PML 200	DD	150 mm
Balancing of Load	KG	≤ 50 %
Number of Starts per Hour	ZKH	≤ 240
Duty Cycle Factor	ED	≤ 50 %

1) Depending on the elevator program

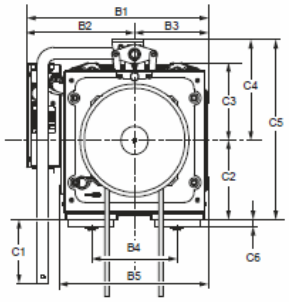
Parameter	Value / Range	Altitude of Installation Site
Ambient Temperature during Operation	5 ... 40 °C 0 ... 40 °C for ≤ 2 hours	≤ 2000 m ASL
	5 ... 30 °C 0 ... 30 °C for ≤ 2 hours	≤ 3000 m ASL
	5 ... 20 °C 0 ... 20 °C for ≤ 2 hours	≤ 4000 m ASL
Air Humidity	≤ 95 % non-condensing	-
Storage Temperature	-10 ... 55 °C	-

Characteristic	Symbol	Unit	FML160		FML200		
			A	B	C	D	E
Weight of FML Machine	GM	kg	265	300	485	515	550
Weight of FML Traction Sheave including Traction Shaft and Rotor	-	kg	79	89	156	165	180
Weight of PML Machine	GM	kg	265	300	485	515	550
Weight of PML Traction Sheave including Traction Shaft and Rotor	-	kg	75	84	151	162	178

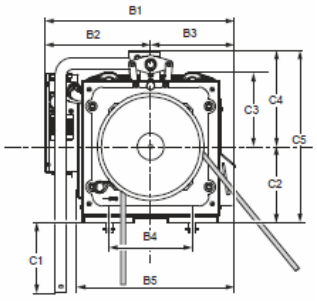
3. Dimensiones y posición de trabajo (Horizontal)



MMR Rear with Secondary Sheave [34024; 28.11.2013]



MMR Side and MRL shown with MBR, HWD and Belt [38125; 28.11.2013]



MMR Rear shown with MBR, HWD and Belt [38126; 28.11.2013]

[mm]	Description	FML/PML 160			FML/PML 200			FML 200 C/D
		without NA versions			NA only with FML machines			
		MRL Side	MMR Side	MMR Rear	MRL Side	MMR Side	MMR Rear	MRL Rear
DD	Traction sheave diameter	125			150			
DRA	Secondary sheave diameter	125			150			
HWD	Handwheel drive [1]	56.5			56.5			-
TZ	Distance between rope fall centers at the machine, 25 mm steps depending on HDA	-	-	805 ... 1155	-	-	875 ... 1200	955 ... 1112
				1180 ... 1530			1225 ... 1775	1705 ... 2012
HDA	Vertical distance between shaft centers of sheaves	-	-	900	-	-	900	480
				1300			1400	680
A1	Without MBR	913.2			C/D = 1099.2 E = 1139.2			C/D = 1099.2
	With MBR [1]	969.2			C/D = 1147.2 E = 1187.2			-
	With MBR and HWD [1]	1114.1			C/D = 1283.1 E = 1323.1			-
A2	-	670			C/D = 780 E = 820			C/D = 780
A3	Without MBR	121.6			159.6			159.6
	With MBR [1]	149.6			183.6			-
	With MBR and HWD [1]	149.6			183.6			-
A4	Without MBR	121.6			159.6			159.6
	With MBR [1]	149.6			183.6			-
	With MBR and HWD [1]	238.0			263.0			-
B1	Without MBR	430		468.1	534.5 [2]		572 [2]	534.5 [2]
	With MBR [1]	439		477.1	574.5		612	574.5
B2	Without MBR	256			317 / 357 [2]			
	With MBR [1]	265			317 / 357			
B3	-	174		212.1	217.5		255	217.5
B4	-	220			250			
B5	-	351.5		389.0	440		477.5	440
C1	With MBR only [1]	476			391			-
C2	-	180			225			
C3	-	180			220			
C4	With MBR only [1]	255			288			-
C5	Without MBR	360			445			
	With MBR [1]	435			513			-
C6	Loads on bases and damping pads	15		-	15		-	-

4. Datos Técnicos del motor

Hoisting Motor

Characteristic	Technical Data
Drive System Variodyn	VFxxxBR (VABxxx) VFxxxPF1 (VAPxxx) VAFxxx
Protection Class	IP 21
Insulation Class	F (≤ 155 °C)
Number of Trips per Hour ZKH	≤ 240
Duty Cycle Factor ED	≤ 50 % ON time
Noise Level of Machine at Rated Speed	≤ 70 dBA (ISO 3744, 1 m distance from motor)
Rated Voltage UMN	– 180 V – 340 V – 415 V – 460 V
Rated Frequency F_{min}	15 Hz

5. Datos eléctricos del motor

Hoisting Motor PML 160-8A UMN = 180 V Global Applicat. Except China

Hoisting Motor Type	PMN [kW]	IMN [A]	UMN [V]	IMAZ [A]	TMN [Nm]	TMAZ [Nm]	NMN [1/min]
PML 160-8A524	5.5	24	180	41	170	270	306
PML 160-8A372	8.2	34		58			458
PML 160-8A348	8.7	36		63			489
PML 160-8A320	9.5	39		68			535
PML 160-8A288	10.9	44		77			611

Hoisting Motor PML 160-8A UMN = 340 V Global Applicat. Except China

Hoisting Motor Type	PMN [kW]	IMN [A]	UMN [V]	IMAZ [A]	TMN [Nm]	TMAZ [Nm]	NMN [1/min]
PML 160-8A984	5.5	13	340	22	170	270	306
PML 160-8A700	8.2	18		31			458
PML 160-8A660	8.7	19		33			489
PML 160-8A600	9.5	21		36			535
PML 160-8A552	10.9	23		40			611

Hoisting Motor PML 160-8A UMN = 460 V Global Applicat. Except China

Hoisting Motor Type	PMN [kW]	IMN [A]	UMN [V]	IMAZ [A]	TMN [Nm]	TMAZ [Nm]	NMN [1/min]
PML 160-8A1332	5.5	9	460	16	170	270	306
PML 160-8A948	8.2	13		23			458
PML 160-8A892	8.7	14		24			489
PML 160-8A812	9.5	15		27			535
PML 160-8A748	10.9	17		29			611

Hoisting Motor PML 160-8A UMN = 180 V Global Applicat. Except China

Hoisting Motor Type	PMN [kW]	IMN [A]	UMN [V]	IMAZ [A]	TMN [Nm]	TMAZ [Nm]	NMN [1/min]
PML 160-8A524	5.5	24	180	41	170	270	306
PML 160-8A372	8.2	34		58			458
PML 160-8A348	8.7	36		63			489
PML 160-8A320	9.5	39		68			535
PML 160-8A288	10.9	44		77			611

Hoisting Motor PML 160-8A UMN = 340 V Global Applicat. Except China

Hoisting Motor Type	PMN [kW]	IMN [A]	UMN [V]	IMAZ [A]	TMN [Nm]	TMAZ [Nm]	NMN [1/min]
PML 160-8A984	5.5	13	340	22	170	270	306
PML 160-8A700	8.2	18		31			458
PML 160-8A660	8.7	19		33			489
PML 160-8A600	9.5	21		36			535
PML 160-8A552	10.9	23		40			611

Hoisting Motor PML 160-8A UMN = 460 V Global Applicat. Except China

Hoisting Motor Type	PMN [kW]	IMN [A]	UMN [V]	IMAZ [A]	TMN [Nm]	TMAZ [Nm]	NMN [1/min]
PML 160-8A1332	5.5	9	460	16	170	270	306
PML 160-8A948	8.2	13		23			458
PML 160-8A892	8.7	14		24			489
PML 160-8A812	9.5	15		27			535
PML 160-8A748	10.9	17		29			611

Hoisting Motor PML 160-8B UMN = 180 V Global Applicat. Except China

Hoisting Motor Type	PMN [kW]	IMN [A]	UMN [V]	IMAZ [A]	TMN [Nm]	TMAZ [Nm]	NMN [1/min]
PML 160-8B364	8.3	32	180	54	260	400	306
PML 160-8B252	12.5	46		78			458
PML 160-8B236	13.3	50		84			489
PML 160-8B216	14.6	54		92			535
PML 160-8B192	16.6	62		103			611

Hoisting Motor PML 160-8B UMN = 340 V Global Applicat. Except China

Hoisting Motor Type	PMN [kW]	IMN [A]	UMN [V]	IMAZ [A]	TMN [Nm]	TMAZ [Nm]	NMN [1/min]
PML 160-8B680	8.3	17	340	29	260	400	306
PML 160-8B468	12.5	25		42			458
PML 160-8B440	13.3	27		45			489
PML 160-8B404	14.6	29		49			535
PML 160-8B360	16.6	33		55			611

Hoisting Motor PML 160-8B UMN = 460 V Global Applicat. Except China

Hoisting Motor Type	PMN [kW]	IMN [A]	UMN [V]	IMAZ [A]	TMN [Nm]	TMAZ [Nm]	NMN [1/min]
PML 160-8B920	8.3	13	460	22	260	400	306
PML 160-8B632	12.5	19		31			458
PML 160-8B596	13.3	20		33			489
PML 160-8B548	14.6	22		36			535
PML 160-8B488	16.6	24		41			611

PMN [KW]: Potencia Nominal

IMN [A]: Corriente excitación Nominal

UMN [V]: Tensión excitación Nominal

IMAZ [A]: Corriente de Arranque

TMN [Nm]: Torque Nominal

TMAZ [Nm]: Torque Arranque

NMN [1/min]: Sobre velocidad admisible

Hoisting Motor PML 200-8C UMN = 180 V Global Applicat. Except China

Hoisting Motor Type	PMN [kW]	IMN [A]	UMN [V]	IMAZ [A]	TMN [Nm]	TMAZ [Nm]	NMN [1/min]
PML 200-8C320	13.6	62	180	102	510	770	255
PML 200-8C222	20.4	91		148			382
PML 200-8C208	21.8	96		158			407
PML 200-8C190	23.8	107		172			446
PML 200-8C172	27.2	117		190			509

Hoisting Motor PML 200-8C UMN = 340 V Global Applicat. Except China

Hoisting Motor Type	PMN [kW]	IMN [A]	UMN [V]	IMAZ [A]	TMN [Nm]	TMAZ [Nm]	NMN [1/min]
PML 200-8C604	13.6	33	340	54	510	770	255
PML 200-8C420	20.4	48		78			382
PML 200-8C392	21.8	51		84			407
PML 200-8C356	23.8	57		92			446
PML 200-8C324	27.2	62		101			509
PML 200-8C256	34.0	79		128			637
PML 200-8C212	40.8	95		155			764

Hoisting Motor PML 200-8C UMN = 460 V Global Applicat. Except China

Hoisting Motor Type	PMN [kW]	IMN [A]	UMN [V]	IMAZ [A]	TMN [Nm]	TMAZ [Nm]	NMN [1/min]
PML 200-8C816	13.6	25	460	40	510	770	255
PML 200-8C568	20.4	35		58			382
PML 200-8C532	21.8	38		62			407
PML 200-8C484	23.8	42		68			446
PML 200-8C436	27.2	46		75			509
PML 200-8C346	34.0	58		95			637
PML 200-8C286	40.8	70		115			764

Hoisting Motor PML 200-8D UMN = 180 V Global Applicat. Except China

Hoisting Motor Type	PMN [kW]	IMN [A]	UMN [V]	IMAZ [A]	TMN [Nm]	TMAZ [Nm]	NMN [1/min]
PML 200-8D280	16.0	71	180	115	600	900	255
PML 200-8D194	24.0	102		165			382
PML 200-8D180	25.6	110		178			407
PML 200-8D164	28.0	121		195			446

Hoisting Motor PML 200-8D UMN = 340 V Global Applicat. Except China

Hoisting Motor Type	PMN [kW]	IMN [A]	UMN [V]	IMAZ [A]	TMN [Nm]	TMAZ [Nm]	NMN [1/min]
PML 200-8D536	16.0	37	340	60	600	900	255
PML 200-8D372	24.0	53		86			382
PML 200-8D348	25.6	57		92			407
PML 200-8D316	28.0	63		101			446
PML 200-8D284	32.0	70		113			509
PML 200-8D226	40.0	88		142			637
PML 200-8D186	48.0	106		172			764

Hoisting Motor PML 200-8D UMN = 460 V Global Applicat. Except China

Hoisting Motor Type	PMN [kW]	IMN [A]	UMN [V]	IMAZ [A]	TMN [Nm]	TMAZ [Nm]	NMN [1/min]
PML 200-8D724	16.0	27	460	44	600	900	255
PML 200-8D504	24.0	39		64			382
PML 200-8D472	25.6	42		68			407
PML 200-8D428	28.0	46		75			446
PML 200-8D384	32.0	52		84			509
PML 200-8D306	40.0	65		105			637
PML 200-8D252	48.0	78		127			764

Hoisting Motor PML 200-8E UMN = 180 V Global Applicat. Except China

Hoisting Motor Type	PMN [kW]	IMN [A]	UMN [V]	IMAZ [A]	TMN [Nm]	TMAZ [Nm]	NMN [1/min]
PML 200-8E236	19.7	85	180	130	740	1100	255
PML 200-8E164	29.6	120		186			382

Hoisting Motor PML 200-8E UMN = 340 V Global Applicat. Except China

Hoisting Motor Type	PMN [kW]	IMN [A]	UMN [V]	IMAZ [A]	TMN [Nm]	TMAZ [Nm]	NMN [1/min]
PML 200-8E444	19.7	45	340	69	740	1100	255
PML 200-8E308	29.6	64		99			382
PML 200-8E288	31.6	69		106			407
PML 200-8E264	34.5	75		116			446
PML 200-8E238	39.5	83		128			509
PML 200-8E188	49.3	106		163			637
PML 200-8E156	59.2	127		196			764

Hoisting Motor PML 200-8E UMN = 460 V Global Applicat. Except China

Hoisting Motor Type	PMN [kW]	IMN [A]	UMN [V]	IMAZ [A]	TMN [Nm]	TMAZ [Nm]	NMN [1/min]
PML 200-8E600	19.7	33	460	51	740	1100	255
PML 200-8E416	29.6	48		73			382
PML 200-8E388	31.6	51		79			407
PML 200-8E356	34.5	56		86			446
PML 200-8E320	39.5	62		95			509
PML 200-8E254	49.3	78		121			637
PML 200-8E210	59.2	94		146			764

PMN [KW]: Potencia Nominal

IMN [A]: Corriente excitación Nominal

UMN [V]: Tensión excitación Nominal

IMAZ [A]: Corriente de Arranque

TMN [Nm]: Torque Nominal

TMAZ [Nm]: Torque Arranque

NMN [1/min]: Sobre velocidad admisible

Hoisting Motor PML 160-8A UMN = 340 V Compliant with GB30253 (China)

Hoisting Motor Type	PMN0 [kW]	IMN0 [A]	UMN [V]	IMAZ [A]	TMN0 [Nm]	TMAZ [Nm]	NMN [1/min]
PML 160-8A700	6.2	14	340	31	130	270	458
PML 160-8A660	6.7	15		33			489
PML 160-8A600	7.3	17		36			535
PML 160-8A552	8.3	18		40			611

Hoisting Motor PML 160-8A UMN = 460 V Compliant with GB30253 (China)

Hoisting Motor Type	PMN0 [kW]	IMN0 [A]	UMN [V]	IMAZ [A]	TMN0 [Nm]	TMAZ [Nm]	NMN [1/min]
PML 160-8A948	6.2	10	460	23	130	270	458
PML 160-8A892	6.7	11		24			489
PML 160-8A812	7.3	12		27			535
PML 160-8A748	8.3	13		29			611

Hoisting Motor PML 160-8B UMN = 340 V Compliant with GB30253 (China)

Hoisting Motor Type	PMN0 [kW]	IMN0 [A]	UMN [V]	IMAZ [A]	TMN0 [Nm]	TMAZ [Nm]	NMN [1/min]
PML 160-8B680	6.4	14	340	29	200	400	306
PML 160-8B468	9.6	20		42			458
PML 160-8B440	10.2	21		45			489
PML 160-8B404	11.2	23		49			535
PML 160-8B360	12.8	25		55			611

Hoisting Motor PML 160-8B UMN = 460 V Compliant with GB30253 (China)

Hoisting Motor Type	PMN0 [kW]	IMN0 [A]	UMN [V]	IMAZ [A]	TMN0 [Nm]	TMAZ [Nm]	NMN [1/min]
PML 160-8B920	6.4	10	460	22	200	400	306
PML 160-8B632	9.6	15		31			458
PML 160-8B596	10.2	16		33			489
PML 160-8B548	11.2	17		36			535
PML 160-8A488	12.8	19		41			611

Hoisting Motor PML 200-8C UMN = 340 V Compliant with GB30253 (China)

Hoisting Motor Type	PMN0 [kW]	IMN0 [A]	UMN [V]	IMAZ [A]	TMN0 [Nm]	TMAZ [Nm]	NMN [1/min]
PML 200-8C420	15.2	37	340	78	380	770	382
PML 200-8C392	16.2	39		84			407
PML 200-8C356	17.7	43		92			446
PML 200-8C324	20.3	47		101			509
PML 200-8C256	25.3	59		128			637
PML 200-8C212	30.4	71		155			764

Hoisting Motor PML 200-8C UMN = 460 V Compliant with GB30253 (China)

Hoisting Motor Type	PMN0 [kW]	IMN0 [A]	UMN [V]	IMAZ [A]	TMN0 [Nm]	TMAZ [Nm]	NMN [1/min]
PML 200-8C568	15.2	27	460	58	380	770	382
PML 200-8C532	16.2	29		62			407
PML 200-8C484	17.7	31		68			446
PML 200-8C436	20.3	35		75			509
PML 200-8C346	25.3	43		95			637
PML 200-8C286	30.4	53		115			764

Hoisting Motor PML 200-8D UMN = 340 V Compliant with GB30253 (China)

Hoisting Motor Type	PMN0 [kW]	IMN0 [A]	UMN [V]	IMAZ [A]	TMN0 [Nm]	TMAZ [Nm]	NMN [1/min]
PML 200-8D372	19.2	43	340	86	480	900	382
PML 200-8D316	22.4	51		101			446
PML 200-8D284	25.6	56		113			509
PML 200-8D226	32.0	70		142			637
PML 200-8D186	38.4	85		172			764

Hoisting Motor PML 200-8D UMN = 460 V Compliant with GB30253 (China)

Hoisting Motor Type	PMN0 [kW]	IMN0 [A]	UMN [V]	IMAZ [A]	TMN0 [Nm]	TMAZ [Nm]	NMN [1/min]
PML 200-8D504	19.2	32	460	64	480	900	382
PML 200-8D428	22.4	38		75			446
PML 200-8D384	25.6	42		84			509
PML 200-8D306	32.0	52		105			637
PML 200-8D252	38.4	63		127			764

Hoisting Motor PML 200-8E UMN = 340 V Compliant with GB30253 (China)

Hoisting Motor Type	PMN0 [kW]	IMN0 [A]	UMN [V]	IMAZ [A]	TMN0 [Nm]	TMAZ [Nm]	NMN [1/min]
PML 200-8E444	16.0	37	340	69	600	1100	255
PML 200-8E308	24.0	52		99			382
PML 200-8E288	25.6	56		106			407
PML 200-8E264	28.0	61		116			446
PML 200-8E238	32.0	67		128			509
PML 200-8E188	40.0	85		163			637
PML 200-8E156	48.0	102		196			764

Hoisting Motor PML 200-8E UMN = 460 V Compliant with GB30253 (China)

Hoisting Motor Type	PMN0 [kW]	IMN0 [A]	UMN [V]	IMAZ [A]	TMN0 [Nm]	TMAZ [Nm]	NMN [1/min]
PML 200-8E600	16.0	28	460	51	600	1100	255
PML 200-8E416	24.0	40		73			382
PML 200-8E388	25.6	42		79			407
PML 200-8E356	28.0	46		86			446
PML 200-8E320	32.0	51		95			509
PML 200-8E254	40.0	64		121			637
PML 200-8E210	48.0	77		146			764

PMN [KW]: Potencia Nominal

IMN [A]: Corriente excitación Nominal

UMN [V]: Tensión excitación Nominal

IMAZ [A]: Corriente de Arranque

TMN [Nm]: Torque Nominal

TMAZ [Nm]: Torque Arranque

NMN [1/min]: Sobre velocidad admisible

6. Referencia numérica de las normas aplicadas.

Code	Code Requirement (description)	TICO	DR FML 160	DR FML 200	DR FML 200-NA	DR PML 160	DR PML 200
Global		**X**					
ISO 8100-1:2019	Safety rules for the construction and installation of lifts -- Lifts for the transport of persons and goods -- Part 1: Passenger and goods passenger lifts	X	Yes	Yes	Yes	Yes	Yes
ISO 8100-2:2019	Safety rules for the construction and installation of lifts -- Lifts for the transport of persons and goods -- Part 2: Design rules, calculations, examinations and tests of lift components	X	Yes	Yes	Yes	Yes	Yes
ISO 8102-1:2020	Electrical requirements for lifts, escalators and moving walks -- Part 1: Electromagnetic compatibility with regard to emission	X	O	O	O	O	O
ISO 8102-2:2021	Electrical requirements for lifts, escalators and moving walks -- Part 2: Electromagnetic compatibility with regard to immunity	X	O	O	O	O	O
ISO 22201-1:2017	Lifts (elevators), escalators and moving walks -- Programmable electronic systems in safety-related applications -- Part 1: Lifts (elevators) (PESSRAL)	X	O	O	O	O	O
ISO 4190-2:2001	Lift installation - Part 2 (Goods lifts)	X	O	O	O	O	O
ISO 4190-5:2006	Lift installation - Part 5 (Control devices, signals and additional fittings)	X	O	O	O	O	O
Europe		**X**					
	Laws	**X**					
(EU) 2021-821	Dual Use Regulation	X	O	O	O	O	O
2006/42/EC	Machine Directive	X	Yes	Yes	Yes	Yes	Yes
2014/33/EU	Lifts Directive	X	Yes	Yes	Yes	Yes	Yes
2014/35/EU	Low Voltage Directive	X	Yes	Yes	Yes	Yes	Yes
2014/30/EU	EMC Directive	X	O	O	O	O	O
2014/53/EU	Radio Equipment Directive (RED)	X	O	O	O	O	O
2011/65/EU	Restriction of Hazardous Substances (RoHS)	X	Yes	Yes	Yes	Yes	Yes
2016 No.1093 / 2019 No. 696 (UKCA)	The Lifts Regulations 2016 amended by The Product Safety and Metrology (EU Exit) Regulations 2019	X	O	O	O	O	O
	Codes and Standards	**X**					
EN 81-20:2014	Safety rules for the construction and installation of lifts - Lifts for the transport of persons and goods	X old	Yes	Yes		Yes	Yes
EN 81-20:2020	Safety rules for the construction and installation of lifts - Lifts for the transport of persons and goods	X	Yes	Yes	Yes	Yes	Yes
EN 81-50:2014	Safety rules for the construction and installation of lifts - Examinations and tests	X old	Yes	Yes	Yes	Yes	Yes
EN 81-50:2020	Safety rules for the construction and installation of lifts - Examinations and tests	X	Yes	Yes	Yes	Yes	Yes
EN 81-21:2022	New passenger and goods passenger lifts in existing buildings.	X	O	O	O	O	O
EN 81-28:2022	Remote alarm on passenger and goods passenger lifts	X	O	O	O	O	O
EN 81-58:2018	Fire protection for landing doors: EI 60 / EI 120	X	O	O	O	O	O