

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :				
Product line	: W20 GENERAL PURPOSE IE4 Three-Phase	Product code :	17547113	
Frame	: W315S/M	Cooling method	: IC411 - TEFC	
Insulation class	: F	Mounting	: B3T	
Duty cycle	: S1	Rotation <sup>1</sup>	: Both (CW and CCW)	
Ambient temperature	: -20°C to +40°C	Starting method	: Direct On Line	
Altitude	: 1000	Approx. weight <sup>3</sup>	: 782 kg	
Protection degree	: IP55	Moment of inertia (J)	: 1.24 kgm <sup>2</sup>	
Design	: N			
Output [kW]	110		110	
Poles	2		2	
Frequency [Hz]	50		60	
Rated voltage [V]	400/690		460	
Rated current [A]	188/109		166	
L. R. Amperes [A]	1523/883		1378	
LRC [A]	8.1		8.3	
No load current [A]	56.0/32.5		52.0	
Rated speed [RPM]	2978		3581	
Slip [%]	0.73		0.53	
Rated torque [Nm]	353		294	
Locked rotor torque [%]	240		270	
Breakdown torque [%]	300		350	
Service factor	1.00		1.00	
Temperature rise	80 K		80 K	
Locked rotor time	45s (cold) 25s (hot)		59s (cold) 33s (hot)	
Noise level <sup>2</sup>	77.0 dB(A)		81.0 dB(A)	
Efficiency (%)	25%			
	50%	94.0	94.2	
	75%	95.0	95.4	
	100%	96.0	95.4	
Power Factor	25%			
	50%	0.78	0.76	
	75%	0.85	0.84	
	100%	0.88	0.87	
Losses at normative operating points (speed;torque), in percentage of rated output power				
Losses (%)	P1 (0,9;1,0)	4.1	4.8	
	P2 (0,5;1,0)	3.0	3.0	
	P3 (0,25;1,0)	2.5	2.2	
	P4 (0,9;0,5)	2.4	3.4	
	P5 (0,5;0,5)	1.4	1.7	
	P6 (0,5;0,25)	1.0	1.4	
	P7 (0,25;0,25)	0.5	0.7	
Bearing type	: <u>Drive end</u> 6314 C3 <u>Non drive end</u> 6314 C3	Foundation loads		
Sealing	: WSeal WSeal	Max. traction		
Lubrication interval	: 6600 h 6600 h	Max. compression		
Lubricant amount	: 27 g 27 g			
Lubricant type	: Mobil Polyrex EM			
This revision replaces and cancel the previous one, which must be eliminated. (1) Looking the motor from the shaft end. (2) Measured at 1m and with tolerance of +3dB(A). (3) Approximate weight subject to changes after manufacturing process.		These are average values based on tests with sinusoidal power supply, subject to the tolerances stipulated in IEC 60034-1.		
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## Three Phase Induction Motor - Squirrel Cage



Customer : \_\_\_\_\_

Notes

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## Three Phase Induction Motor - Squirrel Cage



Customer : \_\_\_\_\_

### Thermal protection

ID	Application	Type	Quantity	Sensing Temperature
1	Winding	Thermistor - 2 wires	1 x Phase	155 °C

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# TORQUE AND CURRENT VS SPEED CURVE

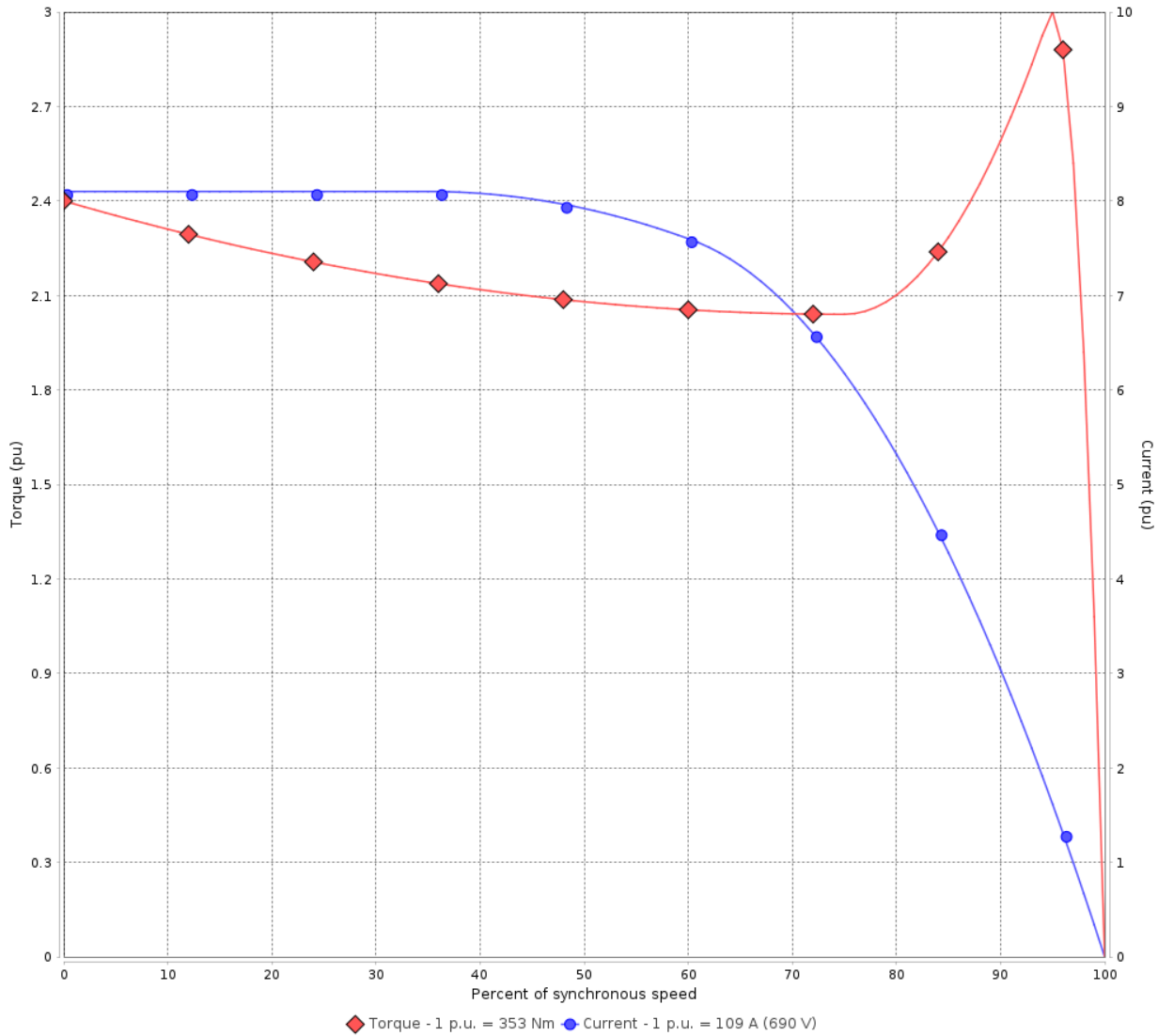
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W20 GENERAL PURPOSE IE4 Three-Phase      Product code : 17547113

TORQUE AND CURRENT VS SPEED CURVE



Performance : 400/690 V 50 Hz 2P

Rated current	: 188/109 A	Moment of inertia (J)	: 1.24 kgm <sup>2</sup>
LRC	: 8.1	Duty cycle	: S1
Rated torque	: 353 Nm	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.00
Breakdown torque	: 300 %	Temperature rise	: 80 K
Rated speed	: 2978 rpm	Design	: N

Locked rotor time : 45s (cold) 25s (hot)

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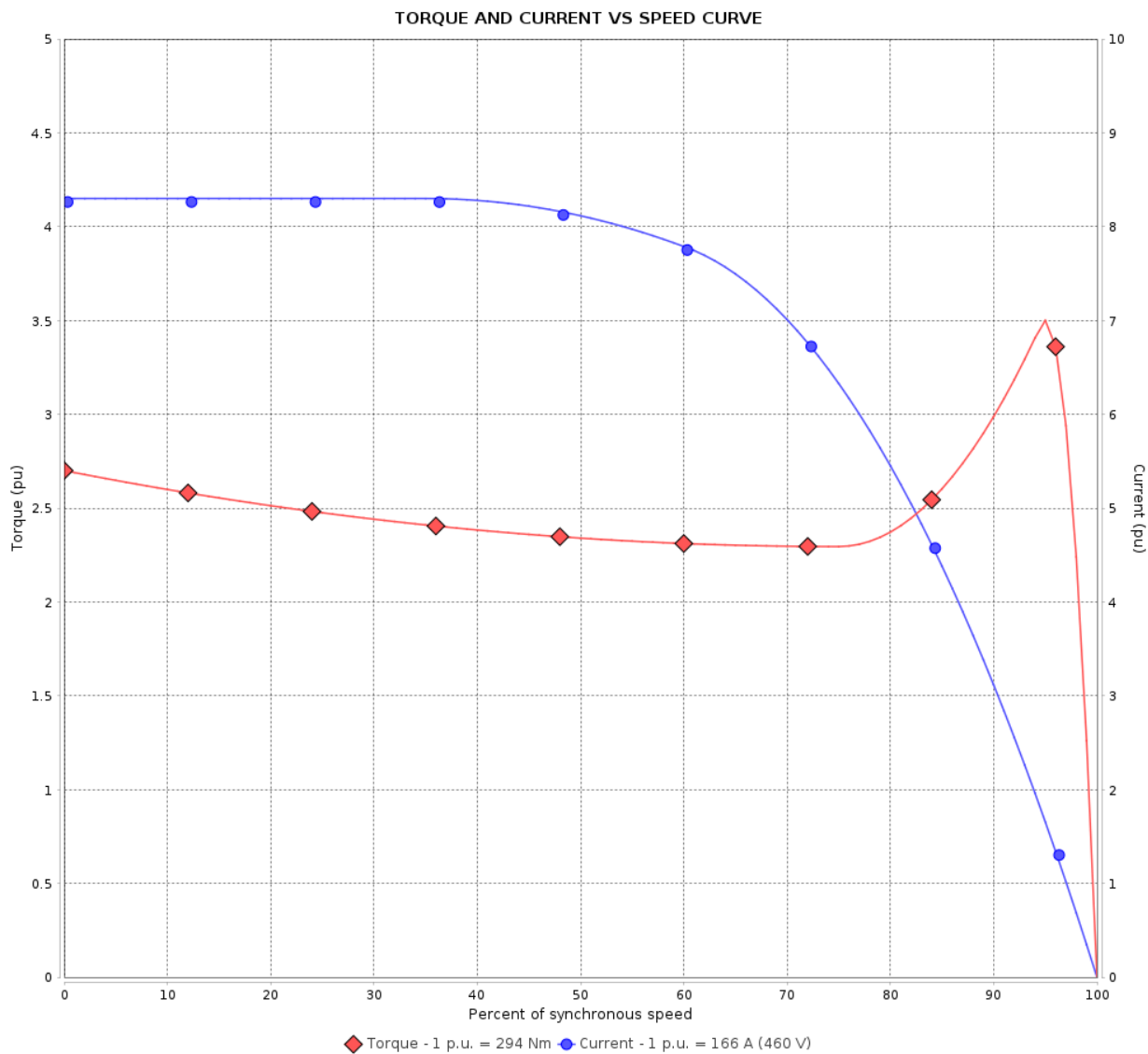
# TORQUE AND CURRENT VS SPEED CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W20 GENERAL PURPOSE IE4 Three-Phase Product code : 17547113



Performance : 460 V 60 Hz 2P

Rated current	: 166 A	Moment of inertia (J)	: 1.24 kgm <sup>2</sup>
LRC	: 8.3	Duty cycle	: S1
Rated torque	: 294 Nm	Insulation class	: F
Locked rotor torque	: 270 %	Service factor	: 1.00
Breakdown torque	: 350 %	Temperature rise	: 80 K
Rated speed	: 3581 rpm	Design	: N

Locked rotor time : 59s (cold) 33s (hot)

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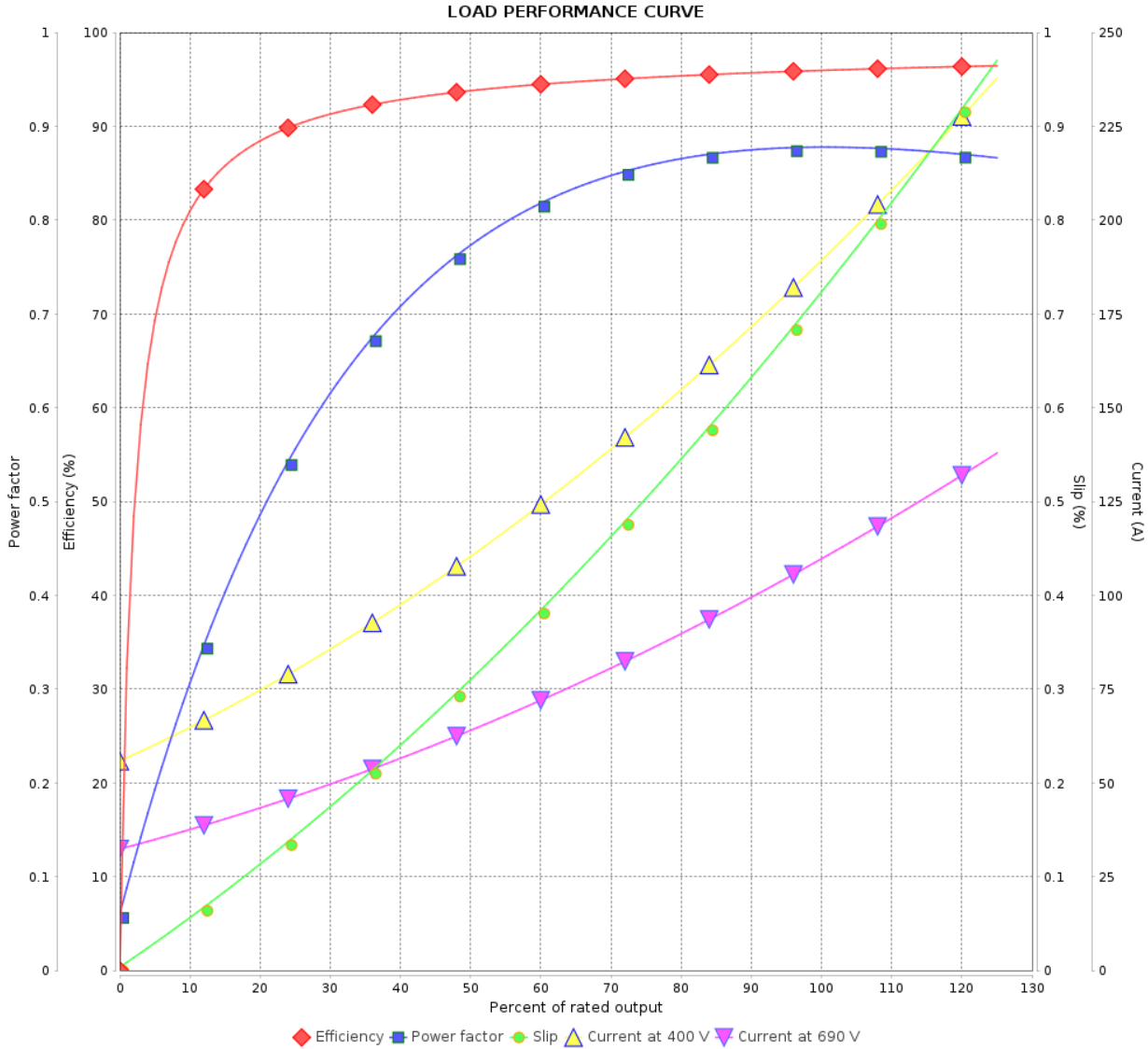
# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage



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Locked rotor torque	: 240 %	Service factor	: 1.00
Breakdown torque	: 300 %	Temperature rise	: 80 K
Rated speed	: 2978 rpm	Design	: N

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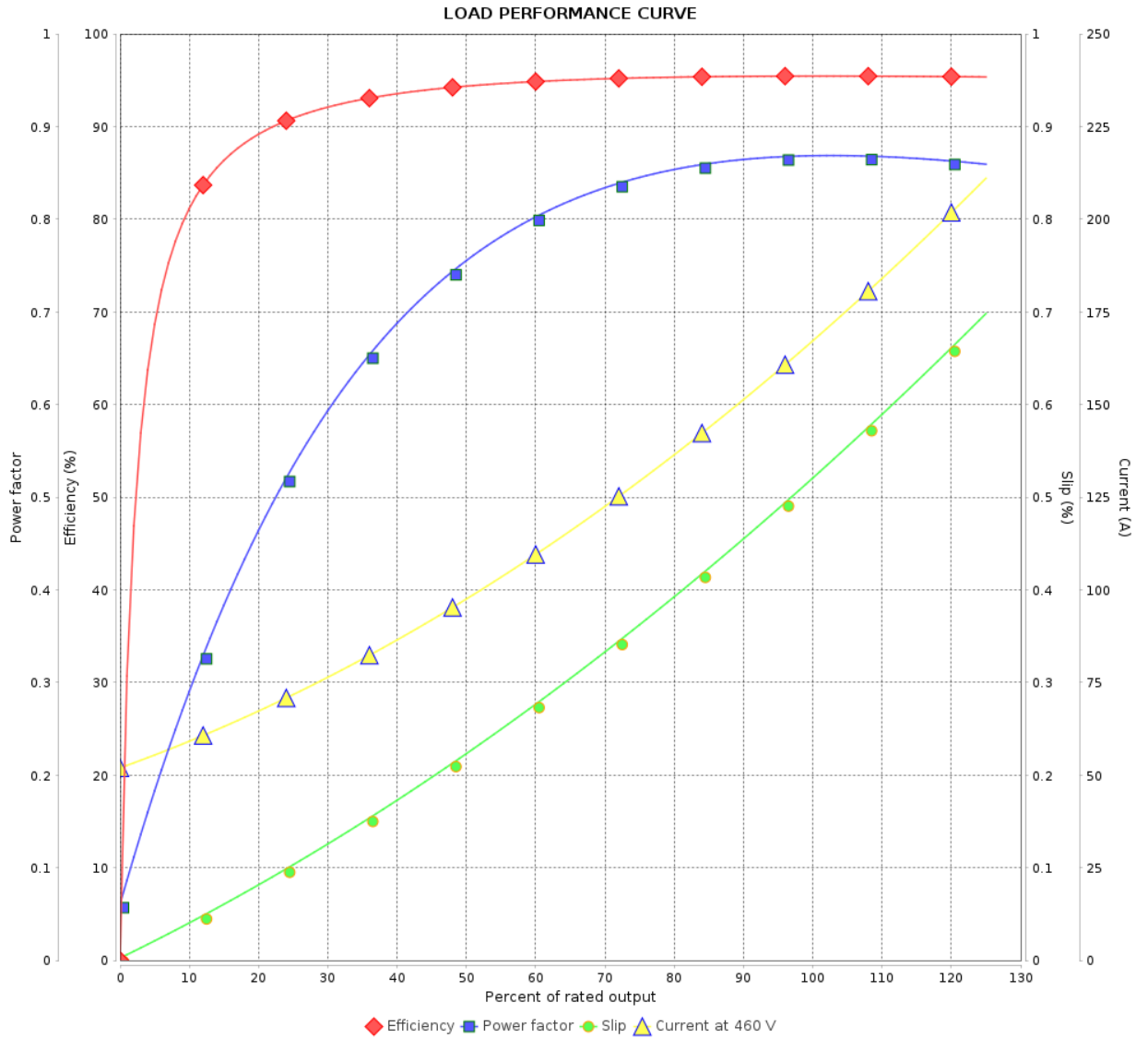
# LOAD PERFORMANCE CURVE

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 Locked rotor torque : 270 %  
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 Rated speed : 3581 rpm

Moment of inertia (J) : 1.24 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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# THERMAL LIMIT CURVE

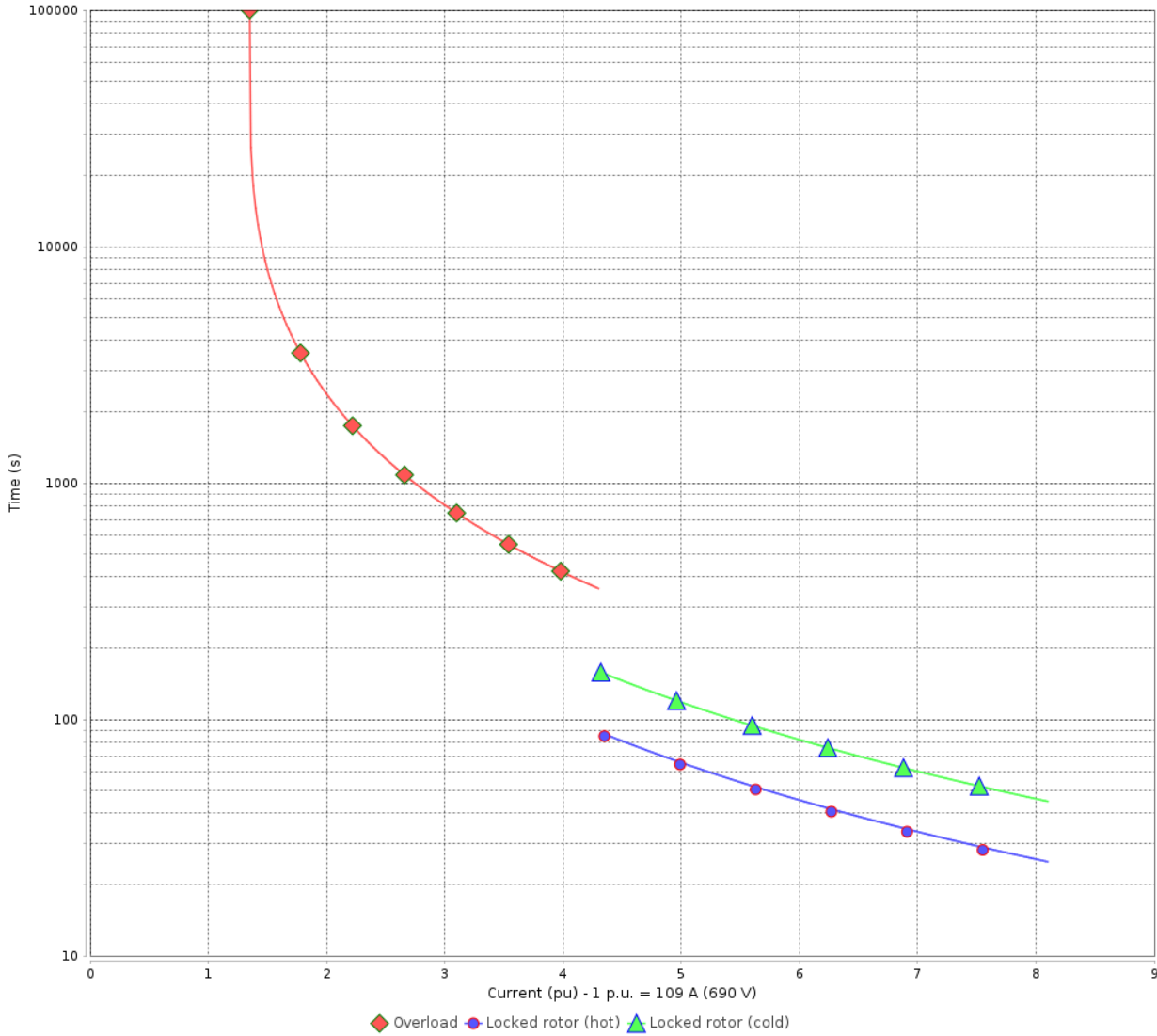
Three Phase Induction Motor - Squirrel Cage



Customer :

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THERMAL LIMIT CURVE



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Locked rotor torque	: 240 %	Service factor	: 1.00
Breakdown torque	: 300 %	Temperature rise	: 80 K
Rated speed	: 2978 rpm	Design	: N

Heating constant

Cooling constant

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# THERMAL LIMIT CURVE

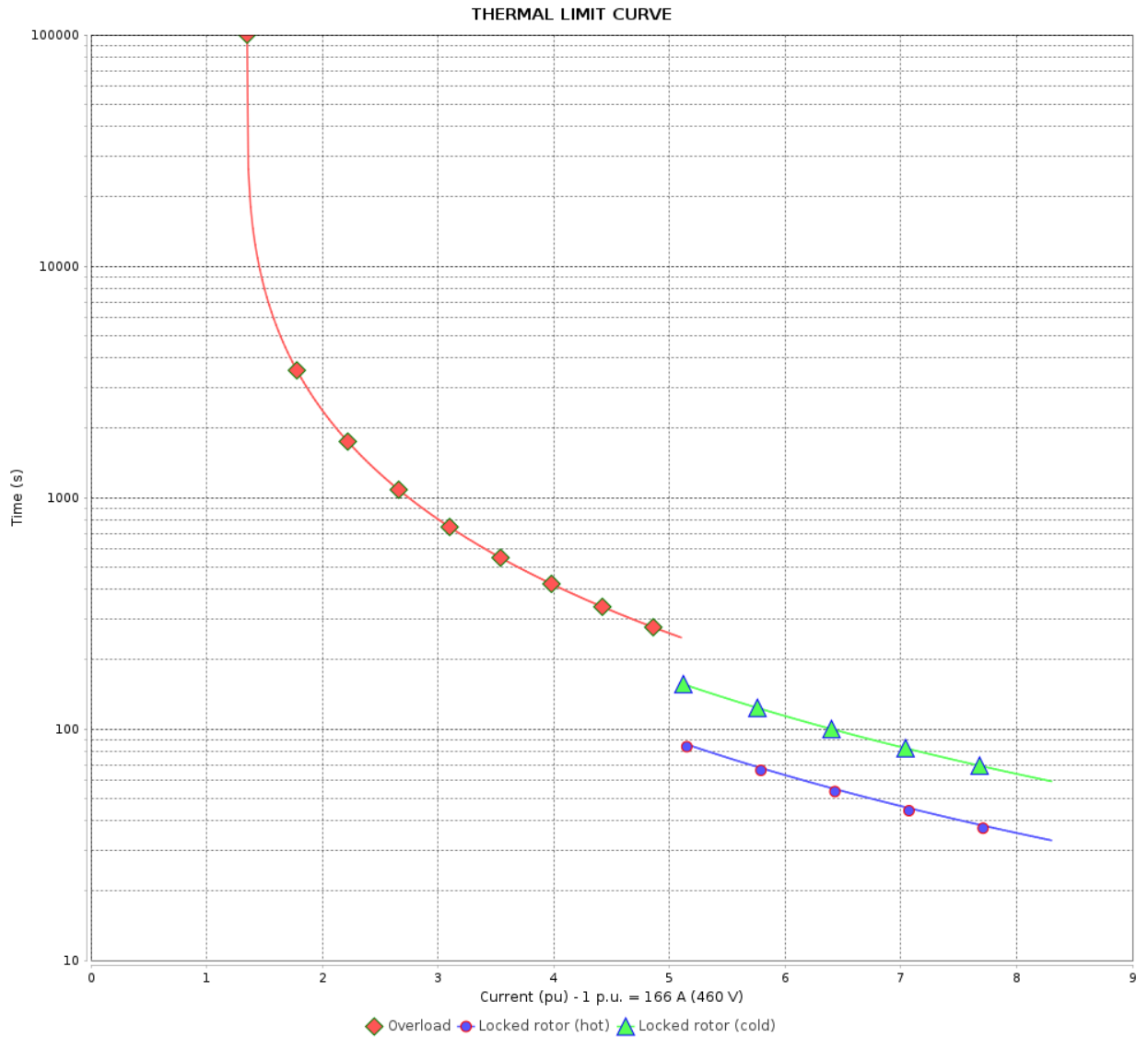
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Product code : 17547113



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Moment of inertia (J) : 1.24 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

Heating constant

Cooling constant

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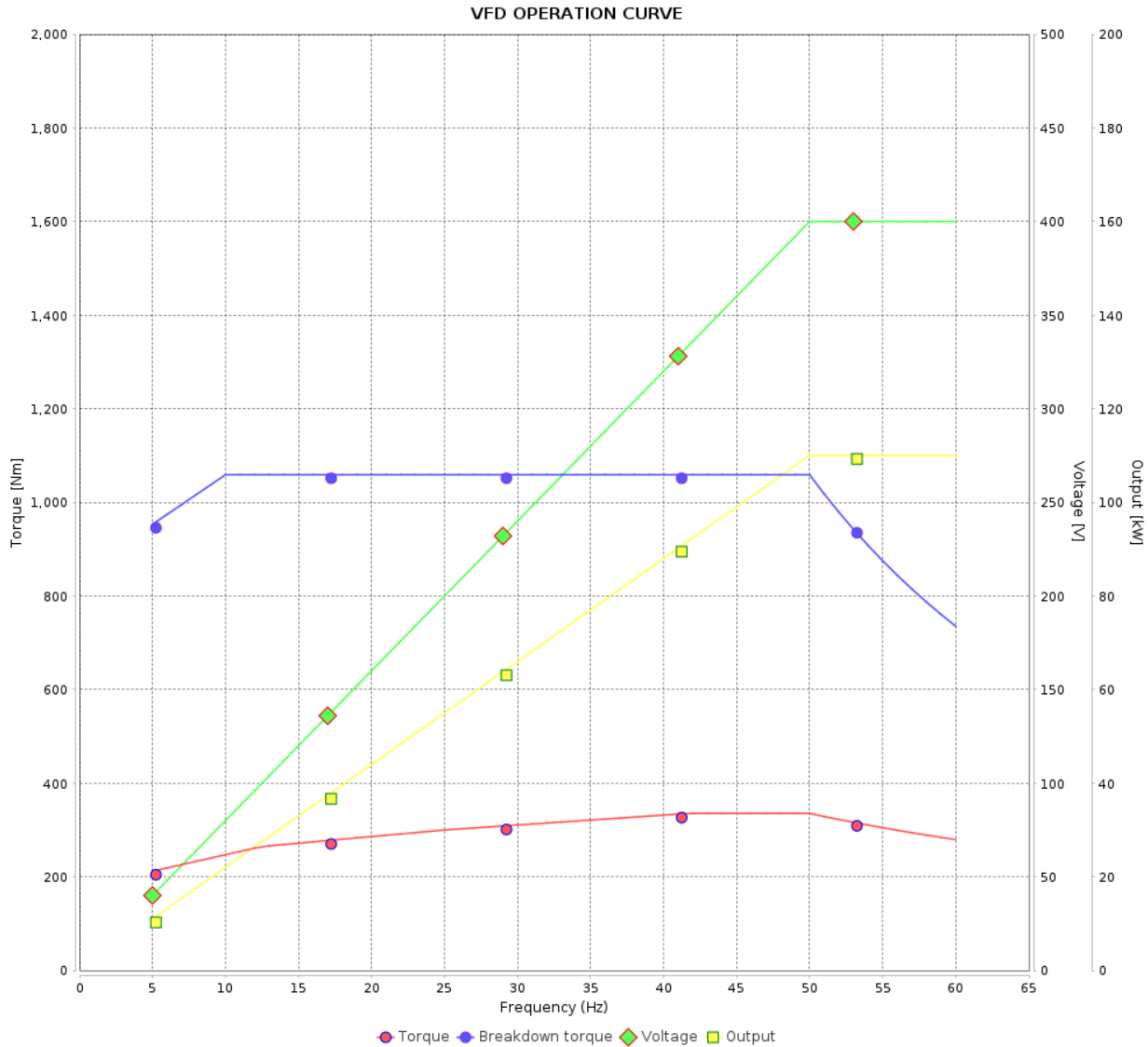
# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



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LRC	: 8.1	Duty cycle	: S1
Rated torque	: 353 Nm	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.00
Breakdown torque	: 300 %	Temperature rise	: 80 K
Rated speed	: 2978 rpm	Design	: N

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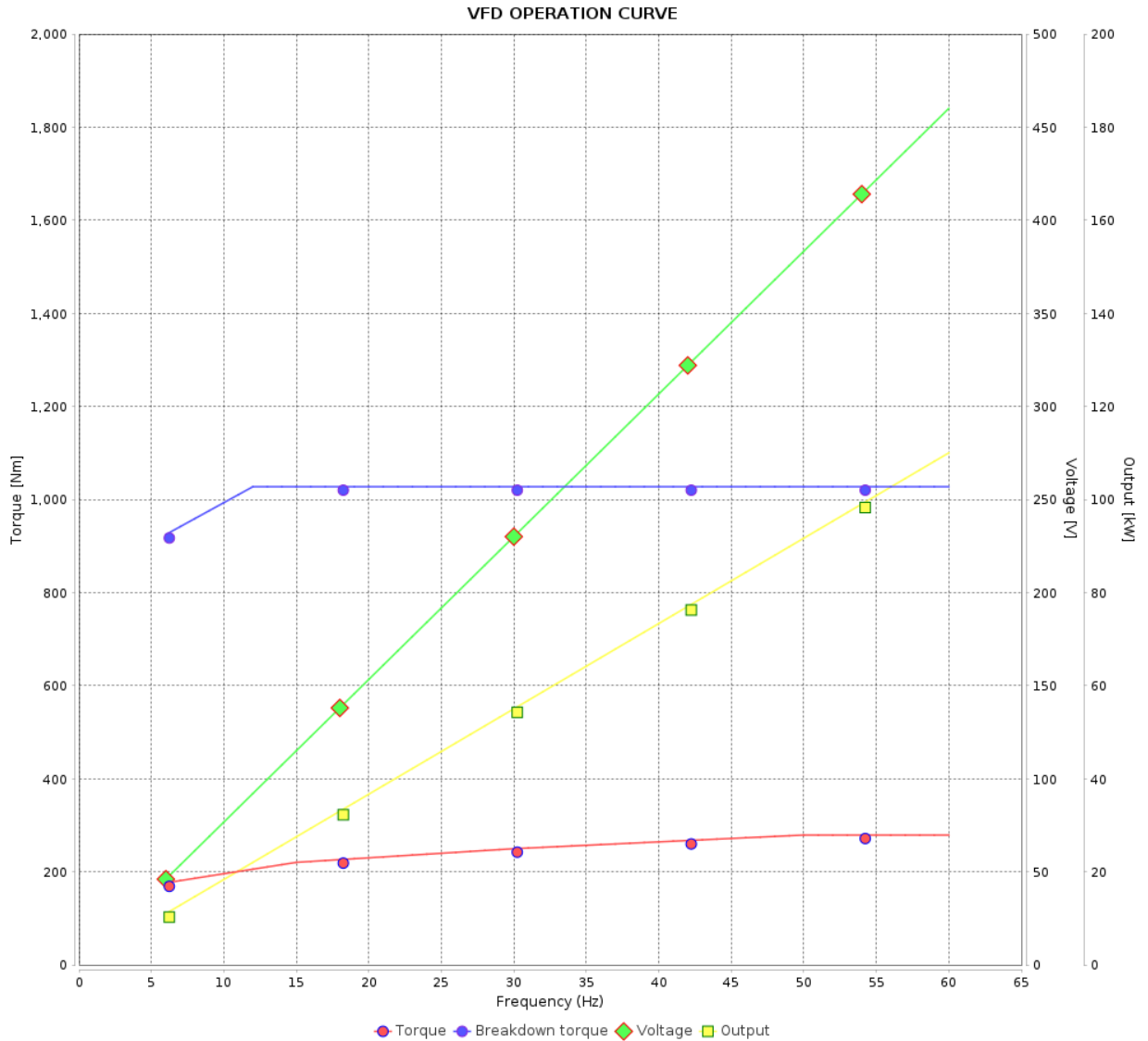
# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer : \_\_\_\_\_

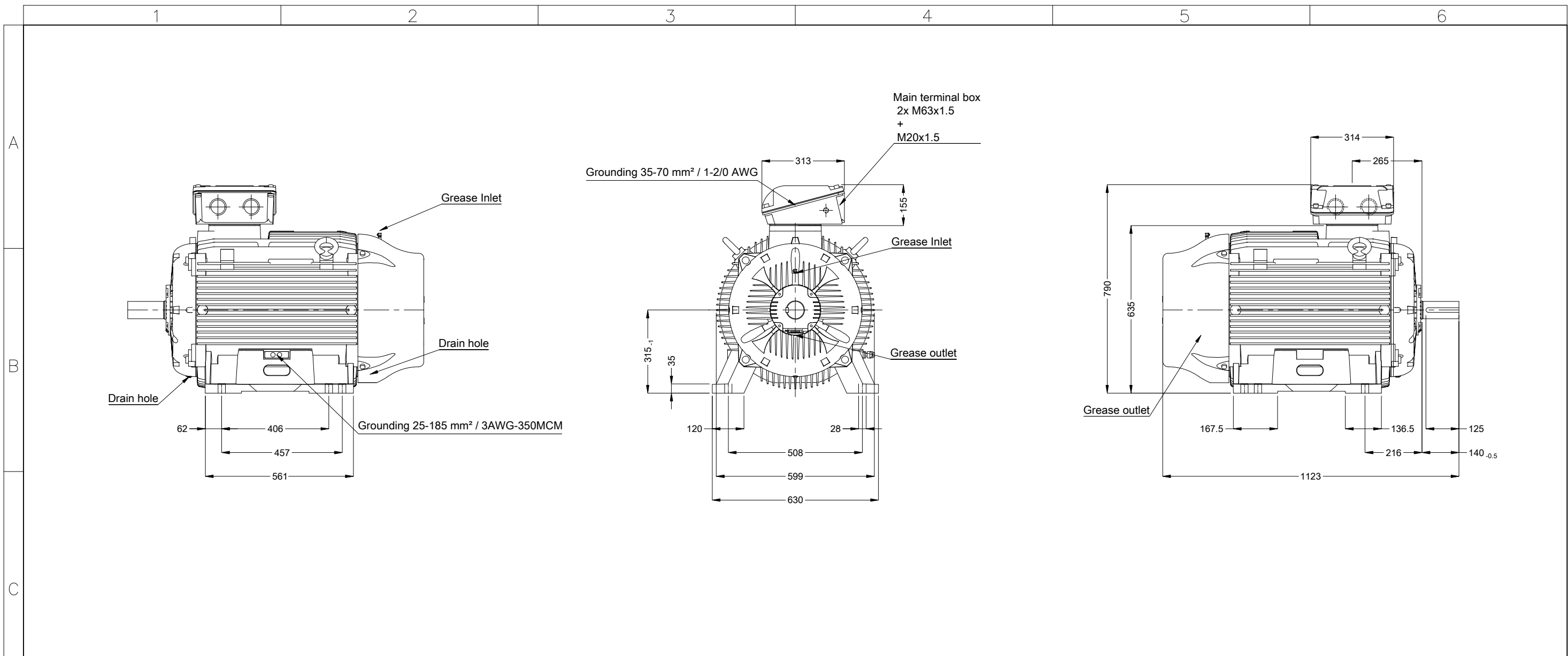
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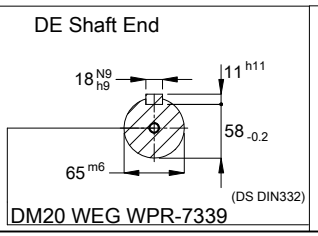
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				110 kW 02 Poles 50 Hz		A
				Scale		1 : 15
				HYBRISUSER		00
ECM	LOC	SUMMARY OF MODIFICATIONS		EXECUTED	CHECKED	RELEASED
EXECUTED	HYBRISUSER	THREE PH. MOTOR W20 GENERAL PURPOSE IE4		EXECUTED	CHECKED	RELEASED
CHECKED		FRAME W315S/M IP55 TEFC		EXECUTED	CHECKED	RELEASED
RELEASED				EXECUTED	CHECKED	RELEASED
REL. DATE				EXECUTED	CHECKED	RELEASED

NDE endshield with electrically insulated bearing hub  
 Color RAL 7042  
 Painting plan 203A  
 Mounting NEMA F-3  
 Mounting B3T



Dimensions in mm

PREVIEW  
 WDD 00  
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