

PRODUCT INFORMATION PACKET

Model No: E3TN3002315B50D41100

Catalog No: E3TN3002315B50D41100

Made in Italy TCN Series, General Purpose Low Voltage IEC motor, Increased Safety, 160,00 kW,
3 phase, 2983 RPM, D400/Y690V 50Hz, 315LA Frame B5, 2 Poles, IC411



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Nameplate Specifications

Output HP	215 Hp	Output KW	160.0 kW
Frequency	50 Hz	Voltage	400/690 V
Current	269.9 A	Speed	2983 rpm
Service Factor	1	Phase	3
Efficiency	95.7 %	Power Factor	0.89
Duty	S1	Insulation Class	F
Frame	315LA	Enclosure	Totally Enclosed Fan Cooled
Ambient Temperature	40 °C	Drive End Bearing Size	6316
Opp Drive End Bearing Size	6316	UL	No
CSA	No	CE	Yes
IP Code	IP55	Number of Speeds	1

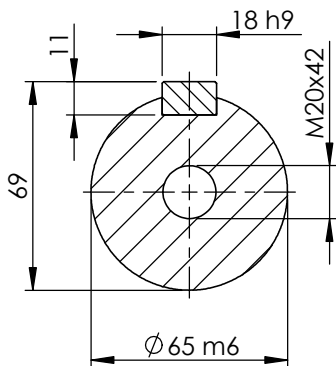
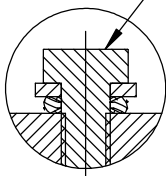
Technical Specifications

Electrical Type	Squirrel Cage	Starting Method	Direct On Line
Poles	2	Rotation	Bi-Directional
Mounting	B5	Motor Orientation	Horizontal
Drive End Bearing	C3	Opp Drive End Bearing	C3
Frame Material	Cast Iron	Shaft Type	Keyed
Overall Length	1287.00 mm	Frame Length	840.00 mm
Shaft Diameter	65.000 mm	Shaft Extension	140 mm
Assembly/Box Mounting	Top		
Outline Drawing	B5A04T8315001B01	Connection Drawing	SC-01-T-1v-1a

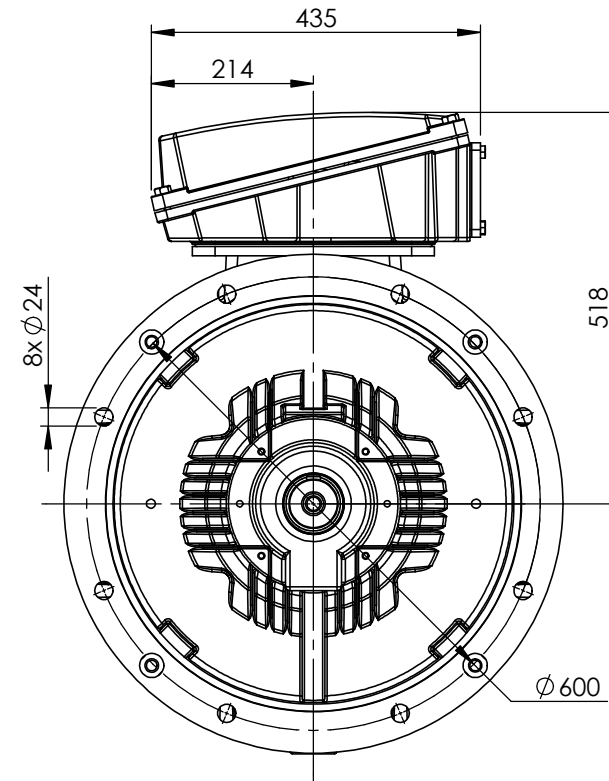
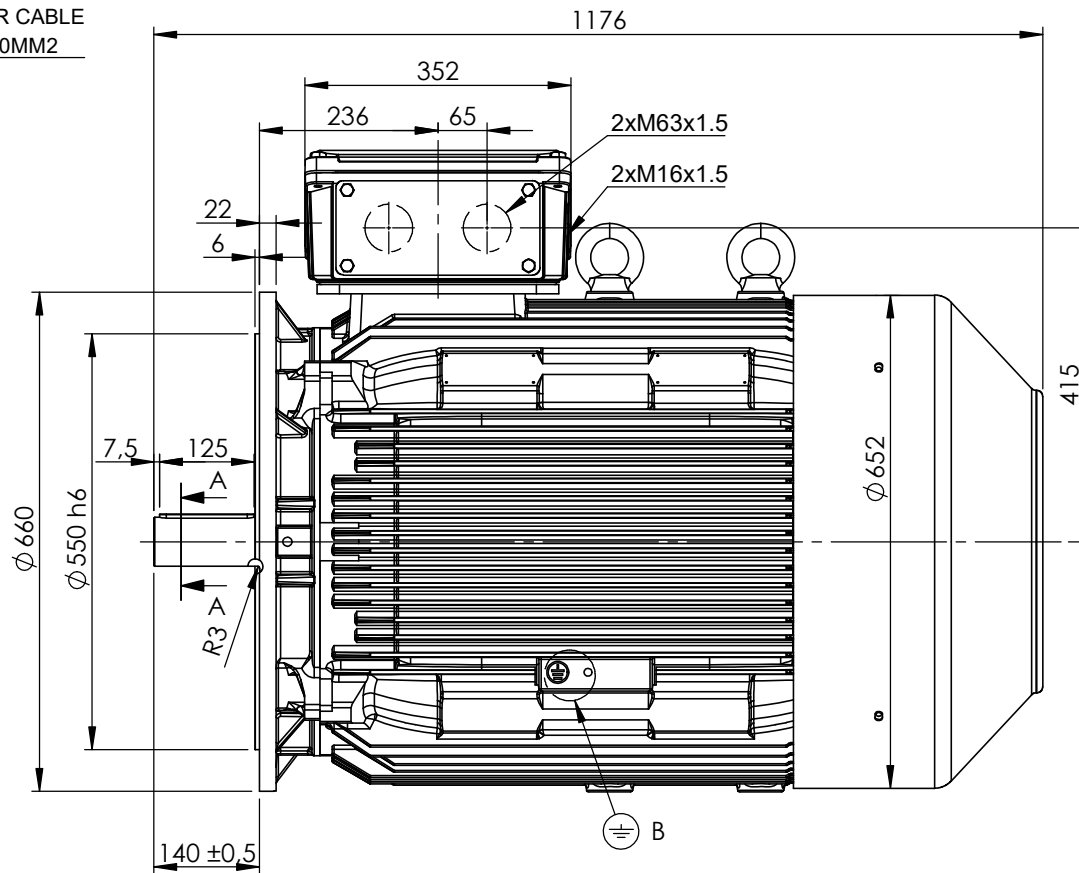
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DETAIL B

EARTH TERMINAL
SUITABLE FOR CABLE
SECTION 10-70MM²



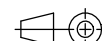
SECTION A-A
SCALE 1 : 2.5



Earth terminal: 1 in the terminal box, 2 on the frame.

CUSTOMER REFERENCE AND ADDITIONAL INFORMATION:

MOTOR TYPE AND DESCRIPTION:

DRAWING REVISION 1	REVISION BY TN	DATE 13/05/2022	TOLERANCES (EXCEPT AS NOTED) TOLERANCES: ±2 * TOLERANCES: ±0.8 DIMENSIONS ARE IN mm ACCORDING TO IEC 60072	DRAWN BY TN	 			
ECO	APPROVED BY LP	DATE 16/05/2022		DATE 01/12/2021				
ECO DESCRIPTION				APPROVED BY LP				
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			SERIAL NUMBER	REFERENCE	DESCRIPTION Motor 315 2P TC (S/M) B5			
					FIRST ANGLE PROJECTION		SIZE A4	DRAWING NUMBER B5A04T8315001B01

Schema di collegamento - *Connection diagram*
Schemas de branchement - *Schaltplan*
Esquemas de conexión



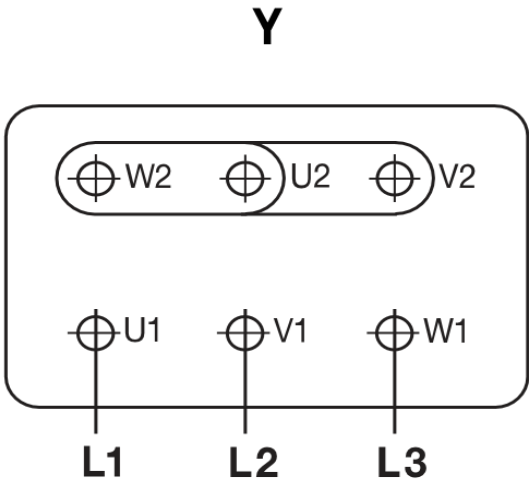
DTE 01/01/2004
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**Motori trifase una velocità - *Single speed, three phase motors* - Moteurs triphasé une vitesse
Drehstrommotor Eine Drehzahlstufe - Motores trifásico una velocidad**

Collegamento - *Connection* - Connexion - *Schaltung* - Conexión



Collegamento - *Connection* - Connexion - *Schaltung* - Conexión



L1 - L2 - L3 = Linea - *Supply* - Reseau - *Netz* - Red

Per invertire la rotazione invertire due fasi - *To change the rotation reverse two phases* - Pour changer le sens de rotation inverser deux phases - *Zur Drehrichtungsänderung zwei Phasen vertauschen* - Para invertir el sentido de rotación invertir dos fases

Marcatura Morsetti Ausiliari - <i>Additional terminals marking (IEC60034-8)</i>		
Marcatura <i>Marking</i>	No. morsetti <i>terminals</i>	Morsetto ausiliare per: <i>Additional terminal for:</i>
TP1A - TP2A (allarme- <i>warning</i>)	2	Termistori PTC (alta velocità) - <i>Thermistor PTC (high speed) [*]</i>
TP1B - TP2B (allarme- <i>warning</i>)	2	Termistori PTC (bassa velocità) - <i>Thermistor PTC (low speed) [*]</i>
R1 - R2 - R3 (I sensore - <i>sensor</i>)	3	Termistore PT100 3 fili - <i>Thermistor PT 100 with 3 wires</i>
R4 - R5 - R6 (II sensore - <i>sensor</i>)	3	
R7 - R8 - R9 (III sensore - <i>sensor</i>)	3	
R11 - R12 - R13 (anteriore - <i>DE</i>)	3	Termistore PT100 su cuscinetto - <i>Thermistor PT 100 on bearing</i>
R21 - R22 - R23 (posteriore - <i>NDE</i>)	3	
TB1 - TB2 (allarme- <i>warning</i>)	2	Protettore bimetallico normalmente chiuso - <i>Normally closed bi-metallic switch (**)</i>
TB3 - TB4 (intervento- <i>switch off</i>)	2	Protettore bimetallico del freno normalmente chiuso - <i>NC brake bi-metallic switch (**)</i>
TB8 - TB9 (intervento- <i>switch off</i>)	2	
TM1 - TM2 (allarme- <i>warning</i>)	2	Protettore bimetallico normalmente aperto - <i>Normally open bi-metallic switch (**)</i>
TM3 - TM4 (intervento- <i>switch off</i>)	2	
HE1- HE2	2	Resistenze riscaldanti - <i>Space heaters</i>
U1 - U2	2	Ventilazione ausiliaria monofase - <i>Single phase forced ventilation</i>
U - V - W	2	Ventilazione ausiliaria trifase - <i>Three phase forced ventilation</i>
colori secondo schema del produttore - <i>colours according manufacturer</i>	9	Encoder
CA1 - CA2	2	Condensatore - <i>Capacitor</i>
PE	1	Conduttore di terra - <i>Earth cable</i>

[*] U nominale - *U rated* = 6V - max 30V

(**) U nominale - *U rated* = 250V



FOGLIO DATI PER MOTORI ELETTRICI ASINCRONI TRIFASI : SERIE IEC
DATA SHEET FOR ASYNCHRONOUS THREEPHASE INDUCTION MOTORS: IEC SERIES

Cliente / Customer	-
Offerta / Offer :	-
Impianto / Plant	-

DATI DI PROGETTO - DESIGN DATA

Modo di protezione	II3G	Motore / Frame
Type of protection		Scatola morsetti / Terminal box
Tem. Amb. Min. / Min Amb.Temp.	-20 °C	
Umidità relativa / Relative humidity	90%	
Tensione nominale / Rated Voltage	400 V +/- 10%	

Ex ec IIB T3 Gc	IP55
Ex ec IIB Gc	IP55
Tem. Amb. Max. / Max Amb. Temp.	40 °C
Altitudine / Altitude	< 1000 mslm / masl
Frequenza / Frequency	50 Hz +/- 3%

DATI FUNZIONALI E COSTRUTTIVI - PERFORMANCE AND CONSTRUCTION DATA

1	Quantità / Quantity					01
2	Motore tipo / Motor type					TCN 315LA2
3	Numero di serie / Serial Number					
4	Forma costruttiva / Shape					B5
5	Certificato / Certificate		TÜV IT		20 ATEX 103X	
6						
Dati nominali / Rated data						
7	Poli / Pole		n°		2	
8	Potenza nominale / Rated power		kW		160,00	
9	Corrente nominale / Rated current		A		269,94	
10	Velocità nominale / Full Load speed		1/min		2983	
11	Collegamento / Winding connection				D	
12	Isolamento / Insulation class				F	
13	Sovratemperatura / Temperature rise				DT80K	
14	Raffreddamento / Cooling type				IC411	
15	Fattore di servizio / Service factor				1	
16						
17	Classe di rendimento / Efficiency level		IEC 34-30			IE3
Performances elettriche / Electrical performances						
Carico / Load			4/4	3/4	2/4	
18	Giri / Speed	1/min	2983	2985	2990	
19	Corr. / Curr.	A	269,94	207,81	151,58	
20	Rend / Eff	%	95,7	95,7	94,4	
21	cos φ	-	0,90	0,87	0,81	
Performances all'avviamento / Starting performances						
22	Ia/In - LRC/FLC				%	710
23	Cosphi a rotore bloccato / LR power factor				0,27	
	Tempo a rotore bloccato / LRWT					
24	100% Un (A caldo / Warm)				sec	-
25	(A freddo / Cold)				sec	-
26	80% Un (A caldo / Warm)				sec	-
27	(A freddo / Cold)				sec	-
	Tempo di avviamento ammissibile / ART					
28	100% Un				sec	-
29	80% Un				sec	-
Curva di coppia / Speed-torque values						
30	Coppia nominale / Rated Torque				Nm	512,24
31	Ca/Cn - LRT/FLT				%	185
32	Cmax/Cn - BDT/FLT				%	305
33						
34						
35						
Varie / Other						
36						
37						
38						
39						

Servizio / Duty			
40	Servizio / Duty type	-	S1
41	Intermittenza / Cyclic duration factor	-	-
42	Avviamenti-ora / Starting-hour	-	-
43	Tempo ciclo / Time		-
Cuscinetti / Bearings			
44	Cuscinetto ant / DE bearing	-	6316 C3
45	Cuscinetto post / NDE bearing	-	6316 C3
46	Carico radiale max / Max radial load in X1	N	5601
47	Carico assiale max / Max axial load	N	3679
48	Tipo grasso / Grease type	LGHP2 SKF or equivalent	
49	Intervallo lubrificazione / Lubrication	h	1000
50	Quantità grasso / Quantity grease	gr	38
Caratteristiche meccaniche / mechanical specification			
51	Massa / Mass	kg	1065
52	Momento d'inerzia / Moment of inertia	kgm2	2,6217
53	Rumore a vuoto / Noise at no load (1 m)	Lp dB(A)	84
54	Vibrazioni / Vibration level	IEC 34-14	A
55	Limite norma / Vibration limit	mm/sec	2,80
56			
57			
Dati entrata cavi - verniciatura / Cable entry and painting			
63	Entrata cavi / Cable entry	IEC 60423	2xM63+1xM16
64	Ciclo verniciatura / Painting cycle		STD
65	Colore finale / Final colour	RAL	5010
66			
67			
68			
69			
70			
71			
Ausiliari - Auxiliaries			
72	Sonde termiche / Temperature detector	winding	PTC
73	Sonde termiche / Temperature detector	bearing	-
74	Scaldiglie / Heaters	V / W	-
75	Preparation for SPM sensor		-
76	Pressacavi / Cable glands		NO
77			

Documento preliminare - Preliminary data sheet

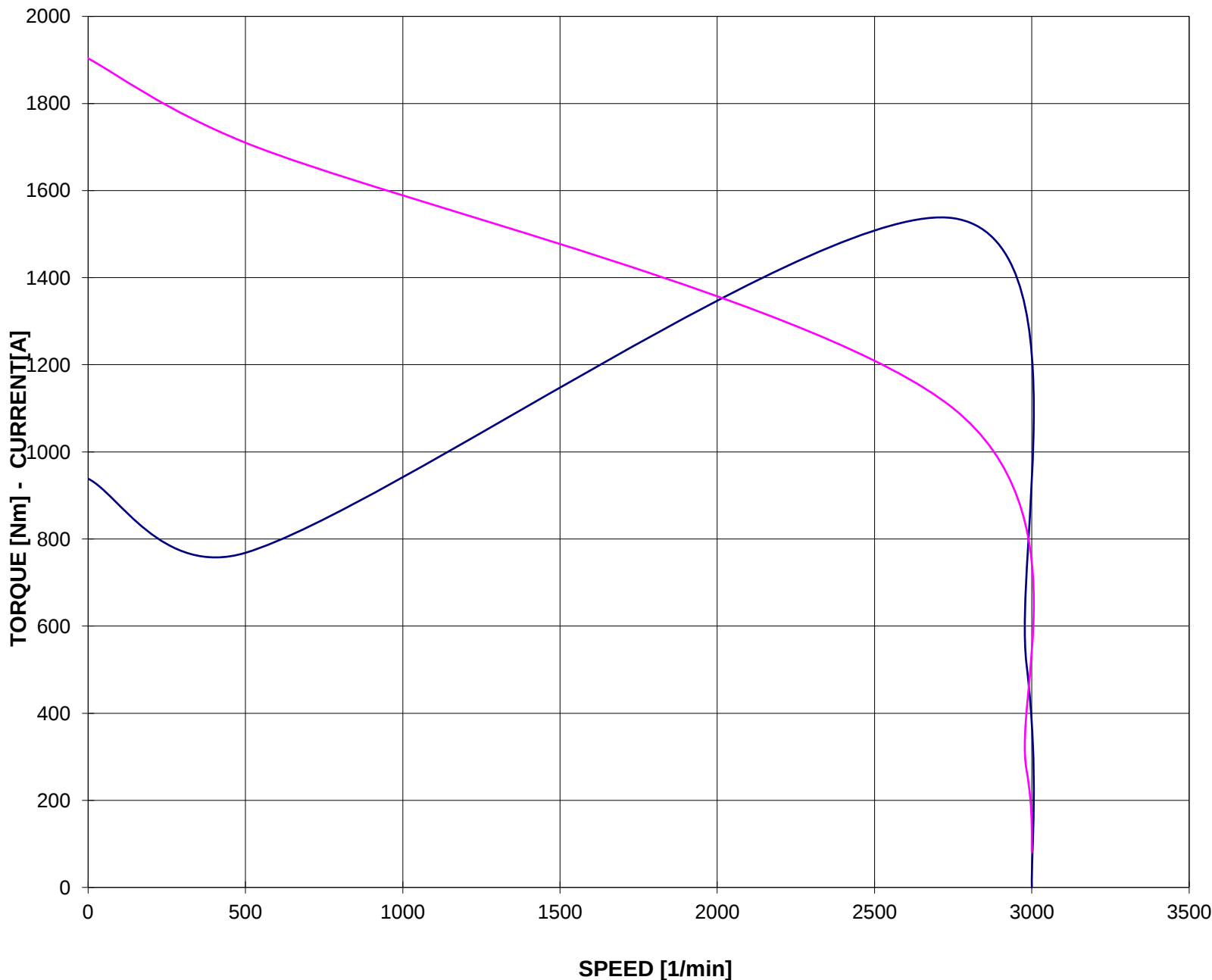
CURVA COPPIA/CORRENTE-GIRI
TORQUE/CURRENT-SPEED DIAGRAM

Cliente / Customer -
Ordine cliente / Customer order -
Impianto / Plant -
ITEM -

Conferma ordine / Acknowledgment -
Numero di serie / Serial Number -

Motore / Motor	TCN 315LA2	
Potenza nominale / Rated power	160,00	kW
Poli / Pole	2	
Tensione - Frequenza / Voltage - Frequency	400 - 50	V - Hz
Corrente / Rated current	269,93	A
Velocità / Speed	2983	rpm
Coppia / Torque	512,20	Nm

— COPPIA - TORQUE — CORRENTE - CURRENT



Valori calcolati - Data obtained by calculation method

CURVA COPPIA/CORRENTE-GIRI (Tensione ridotta)
TORQUE/CURRENT-SPEED DIAGRAM (Reduced voltage)

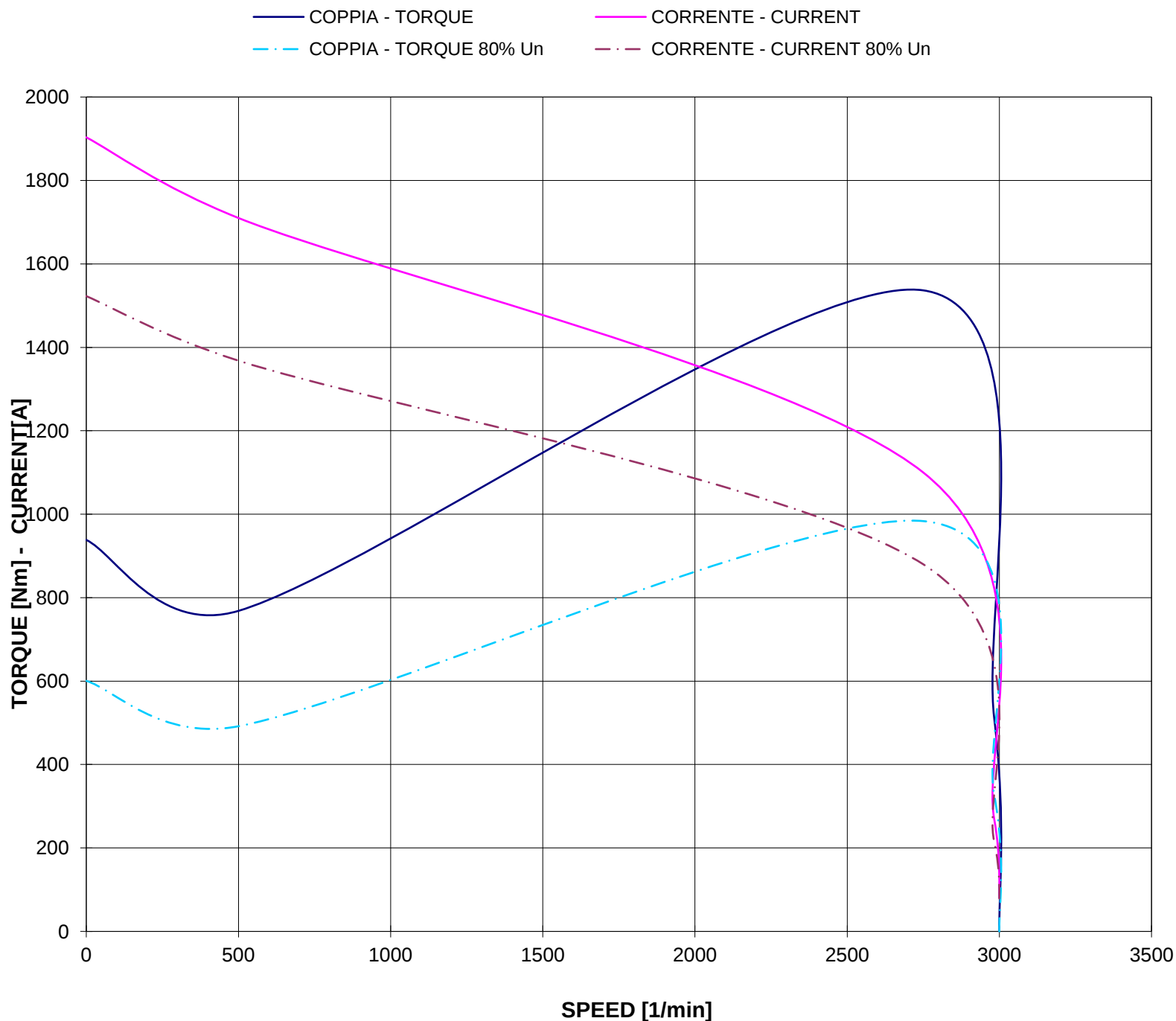
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Ordine cliente / Customer order -
Impianto / Plant -
ITEM -

Conferma ordine / Acknowledgment -
Numero di serie / Serial Number -

Motore / Motor

TCN 315LA2

Potenza nominale / Rated power	160,00	kW
Poli / Pole	2	
Tensione - Frequenza / Voltage - Frequency	400 - 50	V - Hz
Corrente / Rated current	269,93	A
Velocità / Speed	2983	rpm
Coppia / Torque	512,20	Nm



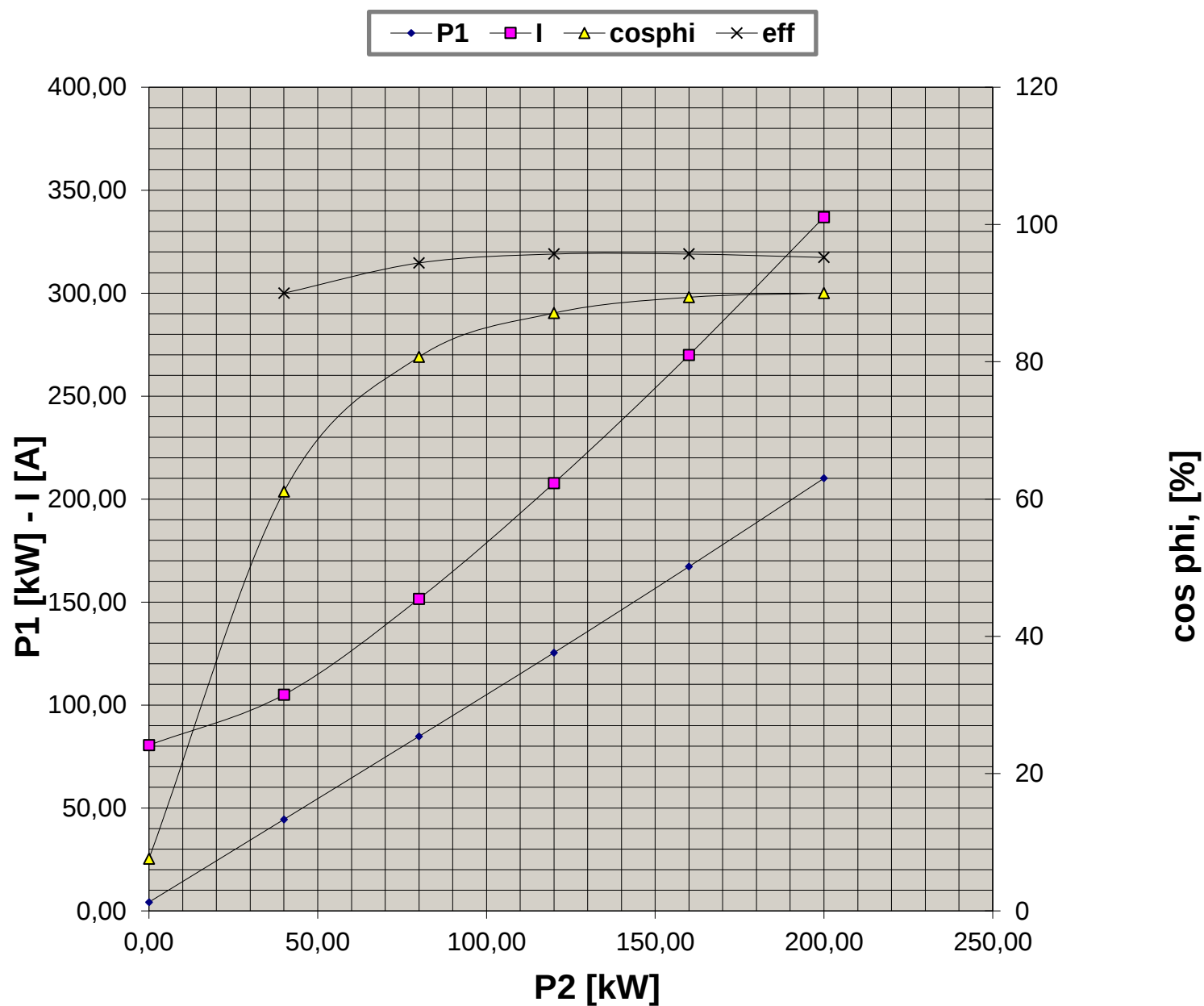
Valori calcolati - Data obtained by calculation method

CURVE CARATTERISTICHE
PERFORMANCE CURVES

Cliente / Customer -
Ordine cliente / Customer order -
Impianto / Plant -
ITEM -

Conferma ordine / Acknowledgment -
Numero di serie / Serial Number -

Motore / Motor	TCN 315LA2	
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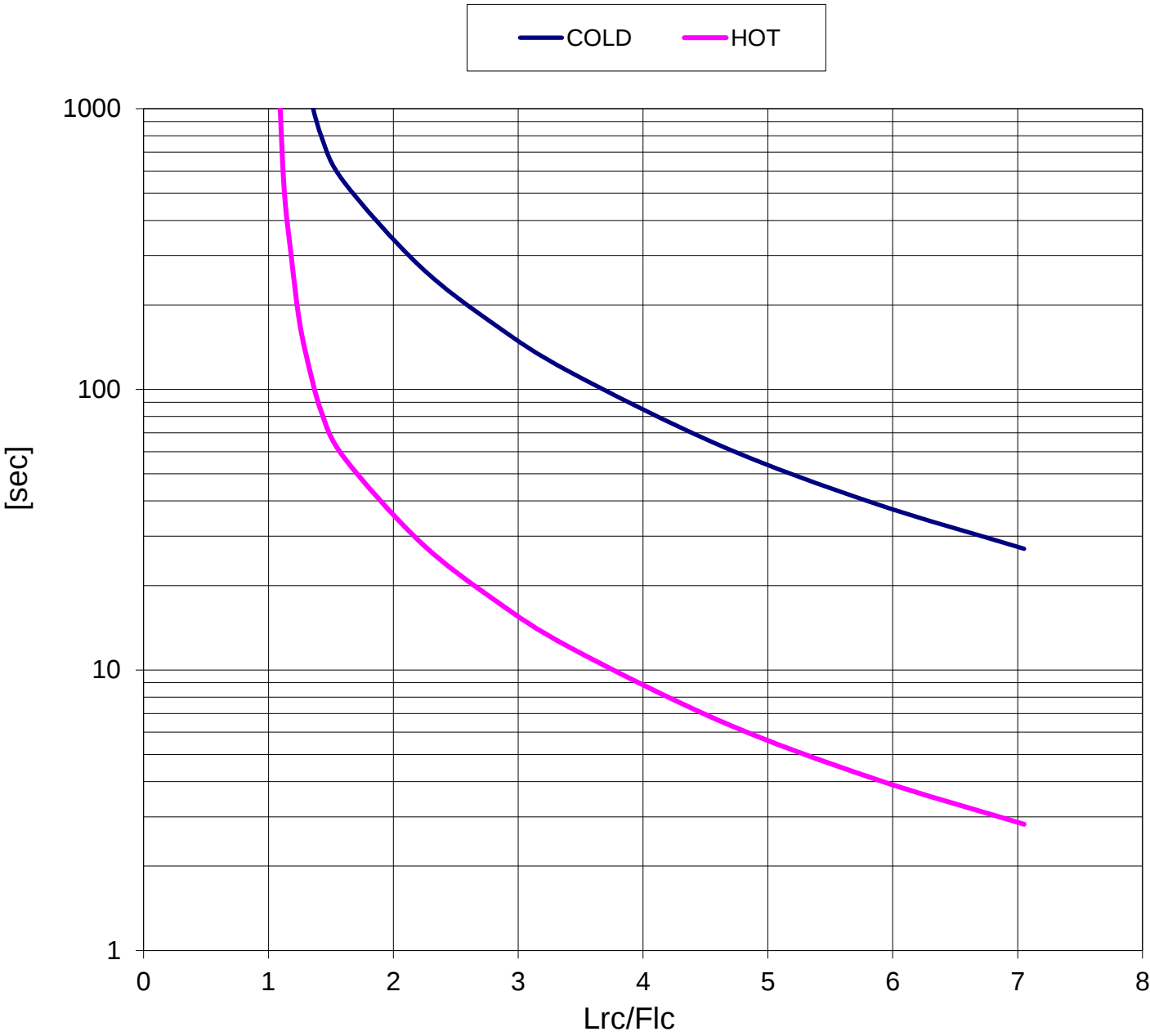
Valori calcolati - Data obtained by calculation method

CURVA LIMITE CORRENTE TEMPO
THERMAL WITHSTAND CURVE

Cliente / Customer -
Ordine cliente / Customer order -
Impianto / Plant -
ITEM -

Conferma ordine / Acknowledgment -
Numero di serie / Serial Number -

Motore / Motor	TCN 315LA2	
Potenza nominale / Rated power	160,00	kW
Poli / Pole	2	
Tensione - Frequenza / Voltage - Frequency	400 - 50	V - Hz
Corrente / Rated current	269,93	A
Velocità / Speed	2983	rpm
Coppia / Torque	512,20	Nm



Valori calcolati - Data obtained by calculation method

CURVA LIMITE CORRENTE TEMPO (Tensione ridotta)
THERMAL WITHSTAND CURVE (Reduced voltage)

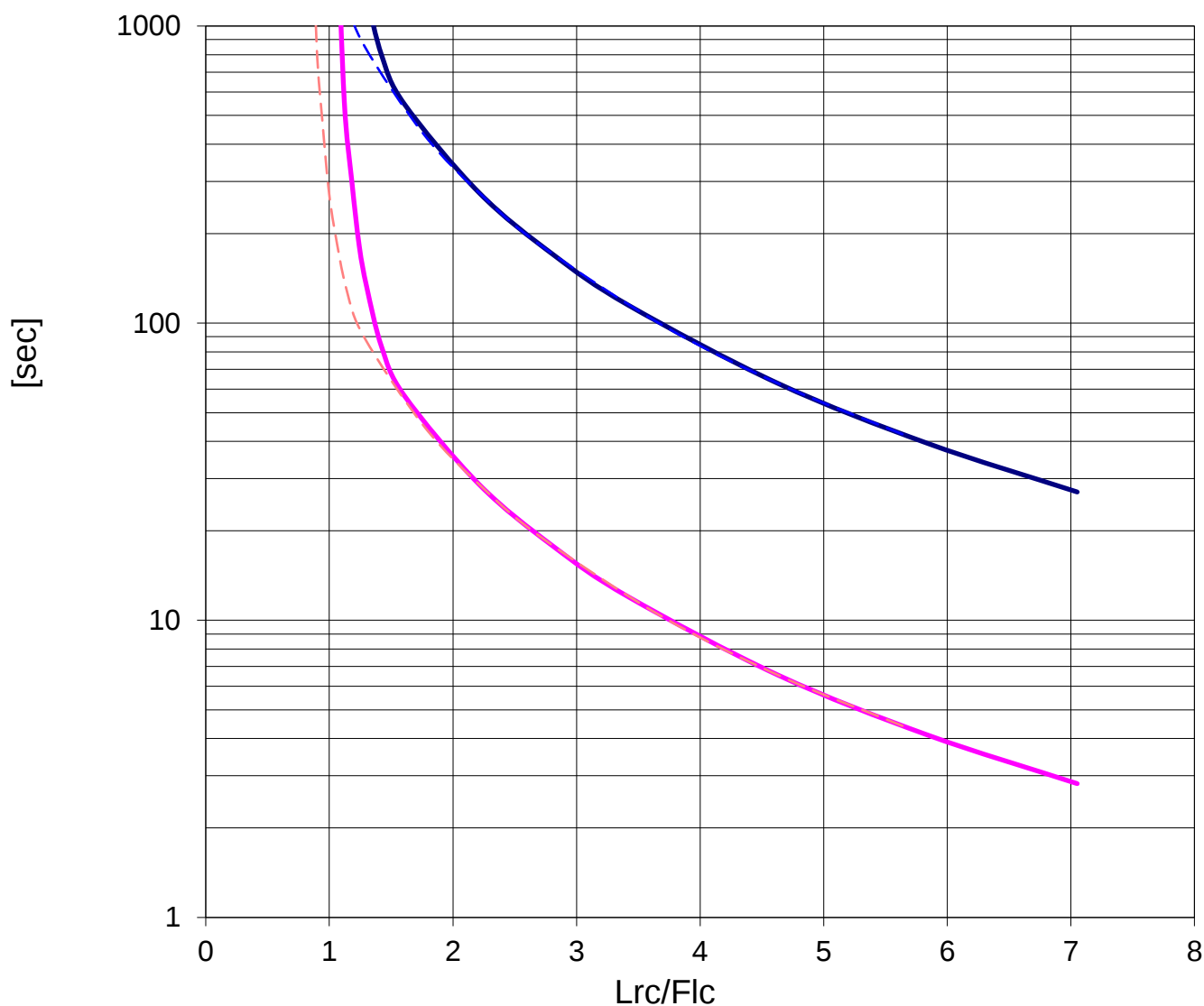
Cliente / Customer -
 Ordine cliente / Customer order -
 Impianto / Plant -
ITEM -

Conferma ordine / Acknowledgment -
 Numero di serie / Serial Number -

Motore / Motor**TCN 315LA2**

Potenza nominale / Rated power	160,00	kW
Poli / Pole	2	
Tensione - Frequenza / Voltage - Frequency	400 - 50	V - Hz
Corrente / Rated current	269,93	A
Velocità / Speed	2983	rpm
Coppia / Torque	512,20	Nm

— COLD (100% Un) — HOT (100% Un) - - COLD (80% Un) - - HOT (80% Un)



Valori calcolati - Data obtained by calculation method