

PRODUCT INFORMATION PACKET

Model No: E3TN3004163B35D41100

Catalog No: E3TN3004163B35D41100

Made in Italy TCN Series, General Purpose Low Voltage IEC motor, Increased Safety, 11,00 kW,
3 phase, 1476 RPM, D400/Y690V 50Hz, 160MB Frame B35, 4 Poles, IC411



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Nameplate Specifications

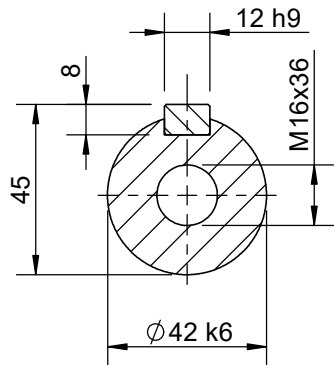
Output HP	15 Hp	Output KW	11.0 kW
Frequency	50 Hz	Voltage	400/690 V
Current	20.7 A	Speed	1476 rpm
Service Factor	1	Phase	3
Efficiency	91.4 %	Power Factor	0.84
Duty	S1	Insulation Class	F
Frame	160MB	Enclosure	Totally Enclosed Fan Cooled
Ambient Temperature	40 °C	Drive End Bearing Size	6309
Opp Drive End Bearing Size	6209	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	4	Rotation	Bi-Directional
Mounting	B35	Motor Orientation	Horizontal
Drive End Bearing	2z-C3	Opp Drive End Bearing	2z-C3
Frame Material	Cast Iron	Shaft Type	Keyed
Overall Length	622.00 mm	Frame Length	254.00 mm
Shaft Diameter	42.000 mm	Shaft Extension	110 mm
Assembly/Box Mounting	Top		
Outline Drawing	B3A04T8165001D01	Connection Drawing	SC-01-T-1v-1a

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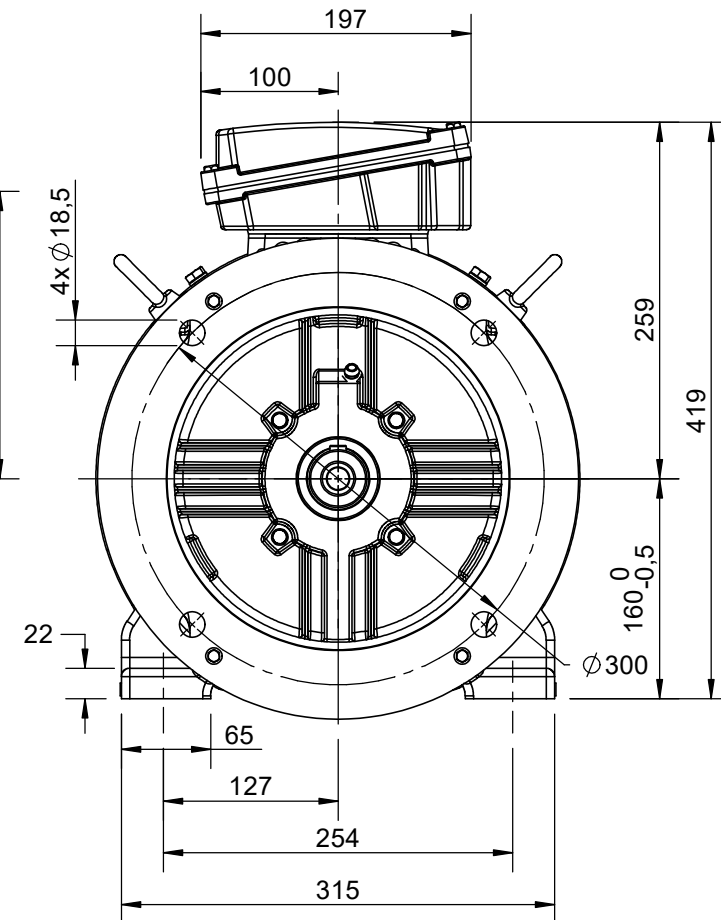
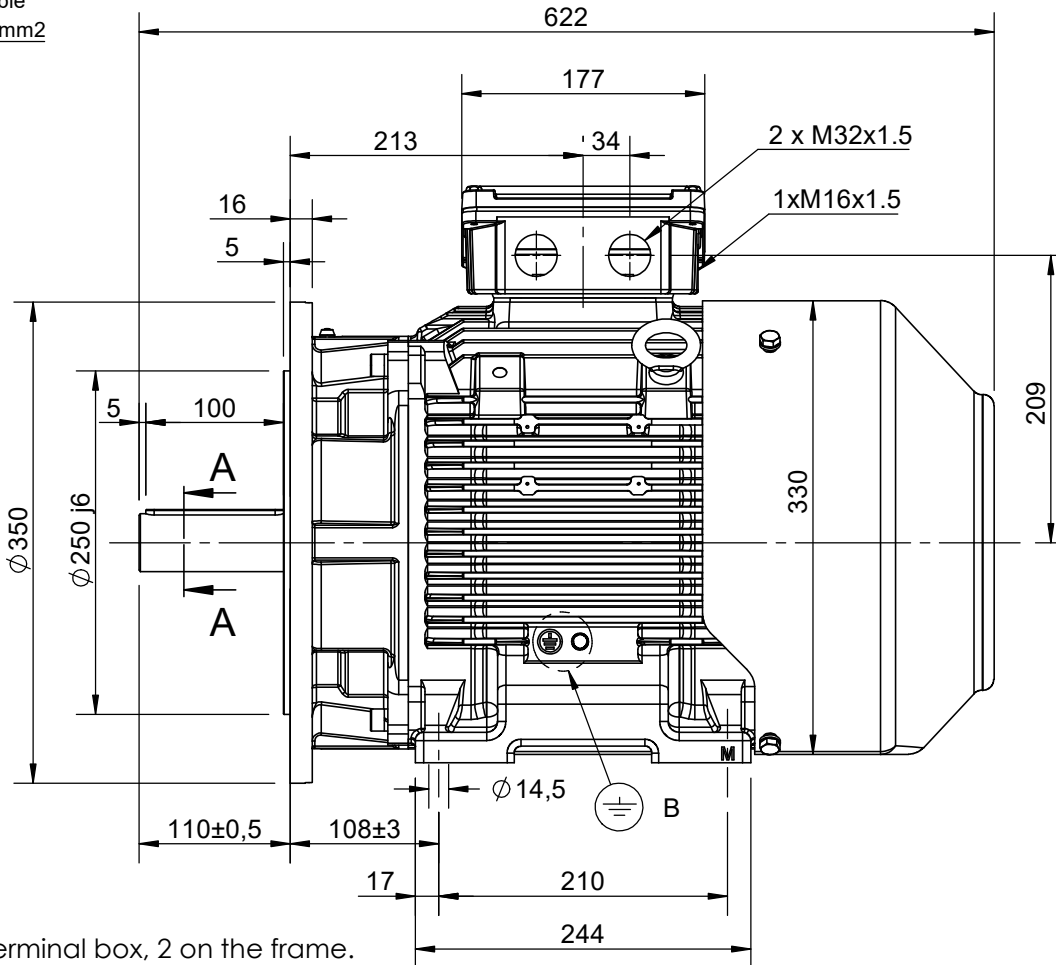
The technical drawing shows a bolted joint. The main view is a front view showing a bolt passing through two plates. A cross-section view is shown to the right, indicated by a section line. The cross-section view shows the bolt, nut, and washers. The bolt is labeled 'Bolt' and the nut is labeled 'Nut'. The washers are labeled 'Washer'.



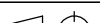
SECTION A-A
SCALE 1:2



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



MOTOR TYPE AND DESCRIPTION:

DRAWING REVISION	REVISION BY	DATE	TOLERANCES (EXCEPT AS NOTED) TOLERANCES: ±2	DRAWN BY TN	REGAL™ cemp			
ECO	APPROVED BY	DATE		DATE 9/11/2021				
ECO DESCRIPTION			DIMENSIONS ARE IN mm ACCORDING TO IEC 60072	APPROVED BY LP	DESCRIPTION Motor 160 TC (S) B35			
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				SERIAL NUMBER				REFERENCE
				FIRST ANGLE PROJECTION		SIZE A4	DRAWING NUMBER B3A04T8165001D01	SHEET 1 OF 2

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



DTE 01/01/2004
SC - 01 - T - 1v.doc

**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 160MB4	
3	Numero di serie / Serial Number					
4	Forma costruttiva / Shape				B35	
5	Certificato / Certificate			TÜV IT	20 ATEX 103X	
6						
Dati nominali / Rated data						
7	Poli / Pole			n°	4	
8	Potenza nominale / Rated power			kW	11,00	
9	Corrente nominale / Rated current			A	20,44	
10	Velocità nominale / Full Load speed			1/min	1476	
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	1476	1484	1489	
19	Corr. / Curr.	A	20,44	16,33	10,99	
20	Rend / Eff	%	91,4	91,9	91,1	
21	cos φ	-	0,85	0,79	0,79	
Performances all'avviamento / Starting performances						
22	Ia/In - LRC/FLC			%	740	
23	Cosphi a rotore bloccato / LR power factor				0,47	
	Tempo a rotore bloccato / LRWT					
24	100% Un (A caldo / Warm)			sec	9	
25	(A freddo / Cold)			sec	24	
26	80% Un (A caldo / Warm)			sec	14	
27	(A freddo / Cold)			sec	38	
	Tempo di avviamento ammissibile / ART					
28	100% Un			sec	21	
29	80% Un			sec	33	
Curva di coppia / Speed-torque values						
30	Coppia nominale / Rated Torque			Nm	71,17	
31	Ca/Cn - LRT/FLT			%	240	
32	Cmax/Cn - BDT/FLT			%	320	
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	-	6309 ZZ C3
45	Cuscinetto post / NDE bearing	-	6209 ZZ C3
46	Carico radiale max / Max radial load in X1	N	2377
47	Carico assiale max / Max axial load	N	1721
48	Tipo grasso / Grease type	LGHP2 SKF or equivalent	
49	Intervallo lubrificazione / Lubrication	h	-
50	Quantità grasso / Quantity grease	gr	-
Caratteristiche meccaniche / mechanical specification			
51	Massa / Mass	kg	150
52	Momento d'inerzia / Moment of inertia	kgm2	0,1289
53	Rumore a vuoto / Noise at no load (1 m)	Lp dB(A)	66
54	Vibrazioni / Vibration level	IEC 34-14	A
55	Limite norma / Vibration limit	mm/sec	2,20
56			
57			
Dati entrata cavi - verniciatura / Cable entry and painting			
63	Entrata cavi / Cable entry	IEC 60423	2xM32+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

-

Impianto / Plant

-

ITEM

-

Numero d'offerta / Offer Number

-

Motore / Motor

TCN 160MB4

Potenza nominale / Rated power

11,00

kW

Poli / Pole

4

Tensione - Frequenza / Voltage - Frequency

400 - 50

V - Hz

Corrente / Rated current

20,44

A

Velocità / Speed

1476

rpm

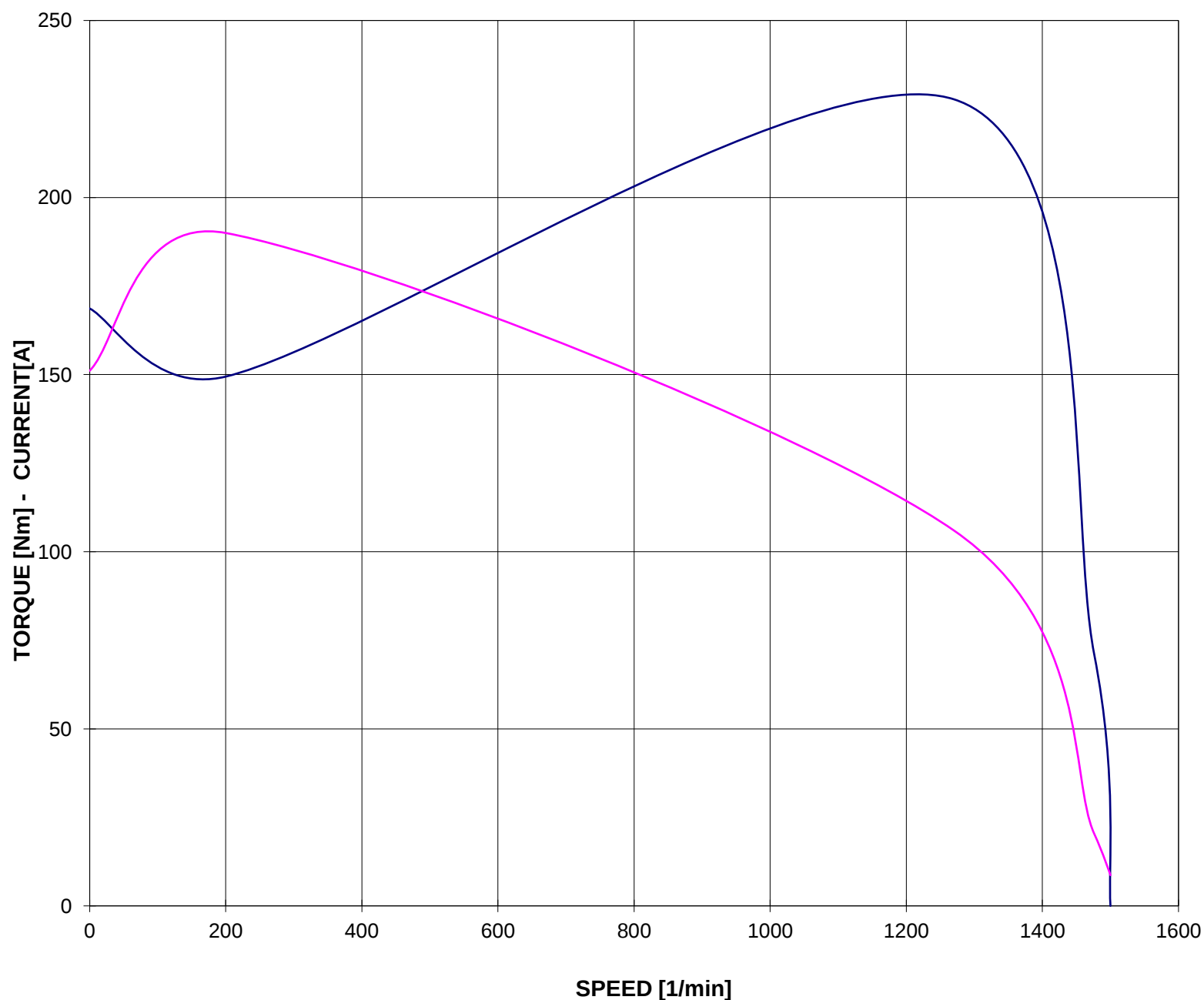
Coppia / Torque

71,17

Nm

— COPPIA - TORQUE

— CORRENTE - CURRENT



Valori calcolati - Data obtained by calculation method
Documento preliminare - Preliminary document

Data / Date 29-giu-22

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

Cliente / Customer

-

Impianto / Plant

-

ITEM

-

Numero d'offerta / Offer Number

-

Motore / Motor

TCN 160MB4

Potenza nominale / Rated power

11,00

kW

Poli / Pole

4

Tensione - Frequenza / Voltage - Frequency

400 - 50

V - Hz

Corrente / Rated current

20,44

A

Velocità / Speed

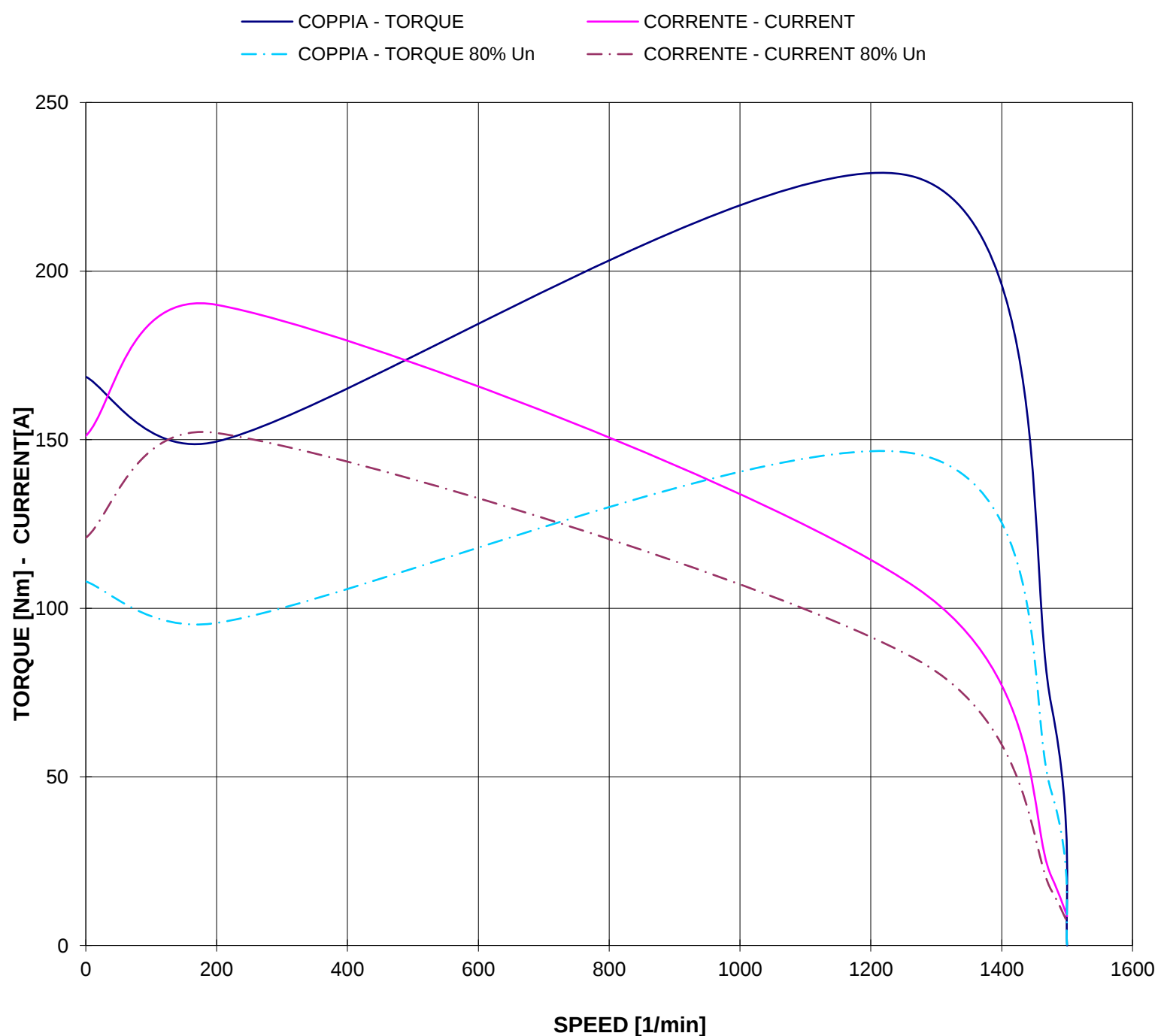
1476

rpm

Coppia / Torque

71,17

Nm



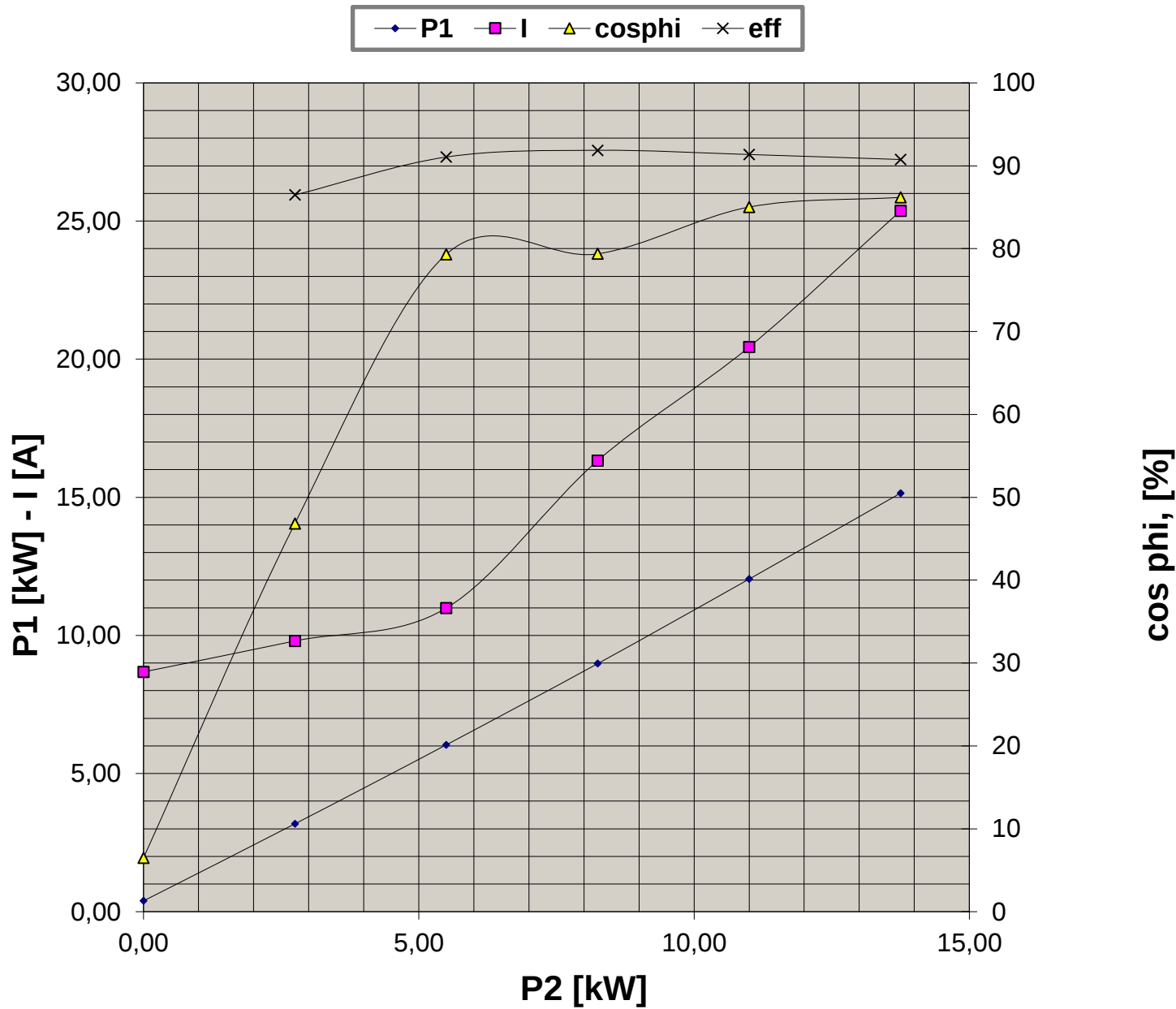
Valori calcolati - Data obtained by calculation method
Documento preliminare - Preliminary document

Data / Date 29-giu-22

CURVE CARATTERISTICHE
PERFORMANCE CURVES

Cliente / Customer -
Impianto / Plant -
ITEM -
Numero d'offerta / Offer Number -

Motore / Motor	TCN 160MB4	
Potenza nominale / Rated power	11,00	kW
Poli / Pole	4	
Tensione - Frequenza / Voltage - Frequency	400 - 50	V - Hz
Corrente / Rated current	20,44	A
Velocità / Speed	1476	rpm
Coppia / Torque	71,17	Nm



CURVA LIMITE CORRENTE TEMPO
THERMAL WITHSTAND CURVE

Cliente / Customer

-

Impianto / Plant

-

ITEM

-

Numero d'offerta / Offer Number

-

Motore / Motor

TCN 160MB4

Potenza nominale / Rated power

11,00

kW

Poli / Pole

4

Tensione - Frequenza / Voltage - Frequency

400 - 50

V - Hz

Corrente / Rated current

20,44

A

Velocità / Speed

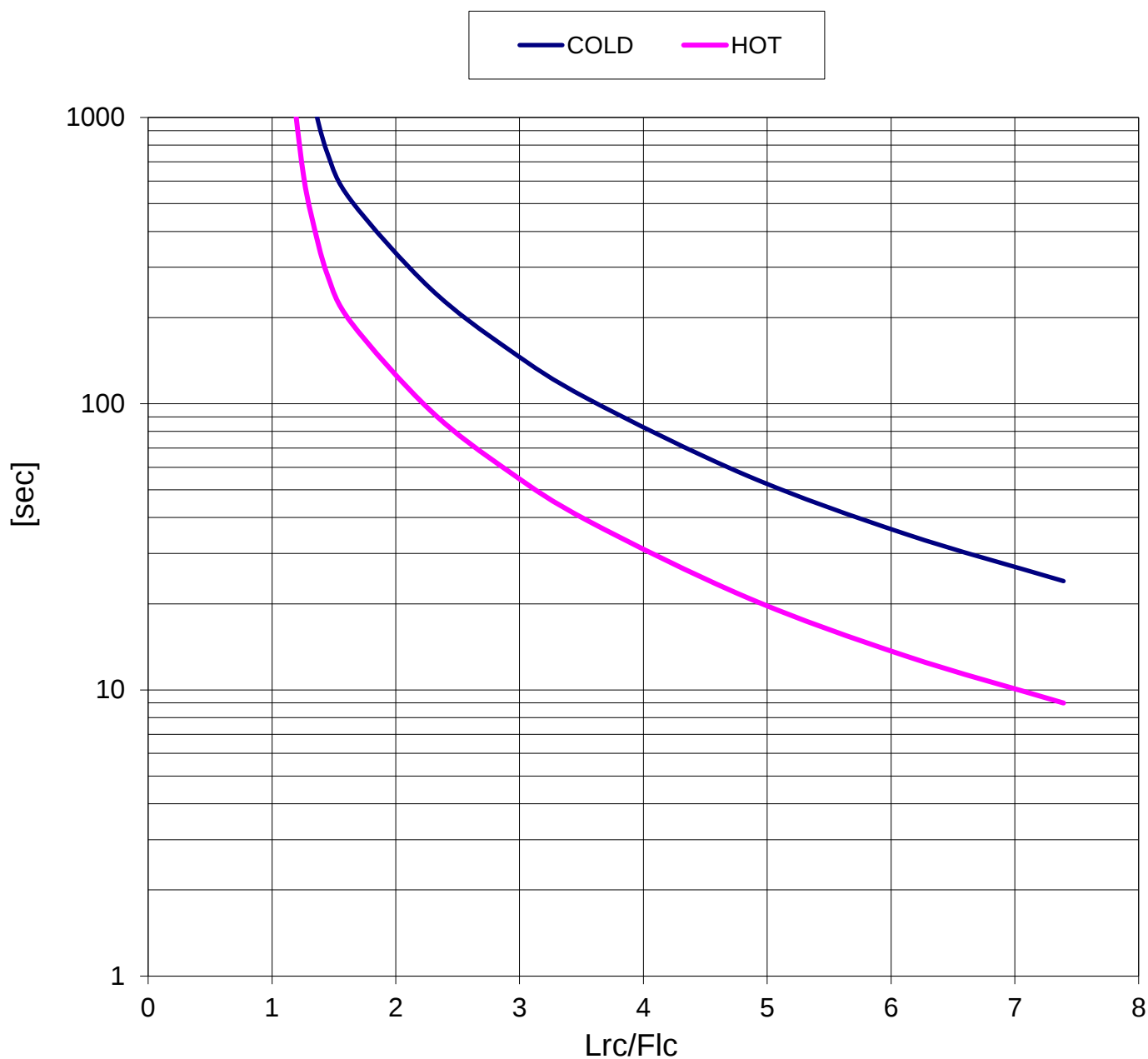
1476

rpm

Coppia / Torque

71,17

Nm



Valori calcolati - Data obtained by calculation method
Documento preliminare - Preliminary document

Data / Date 29-giu-22

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

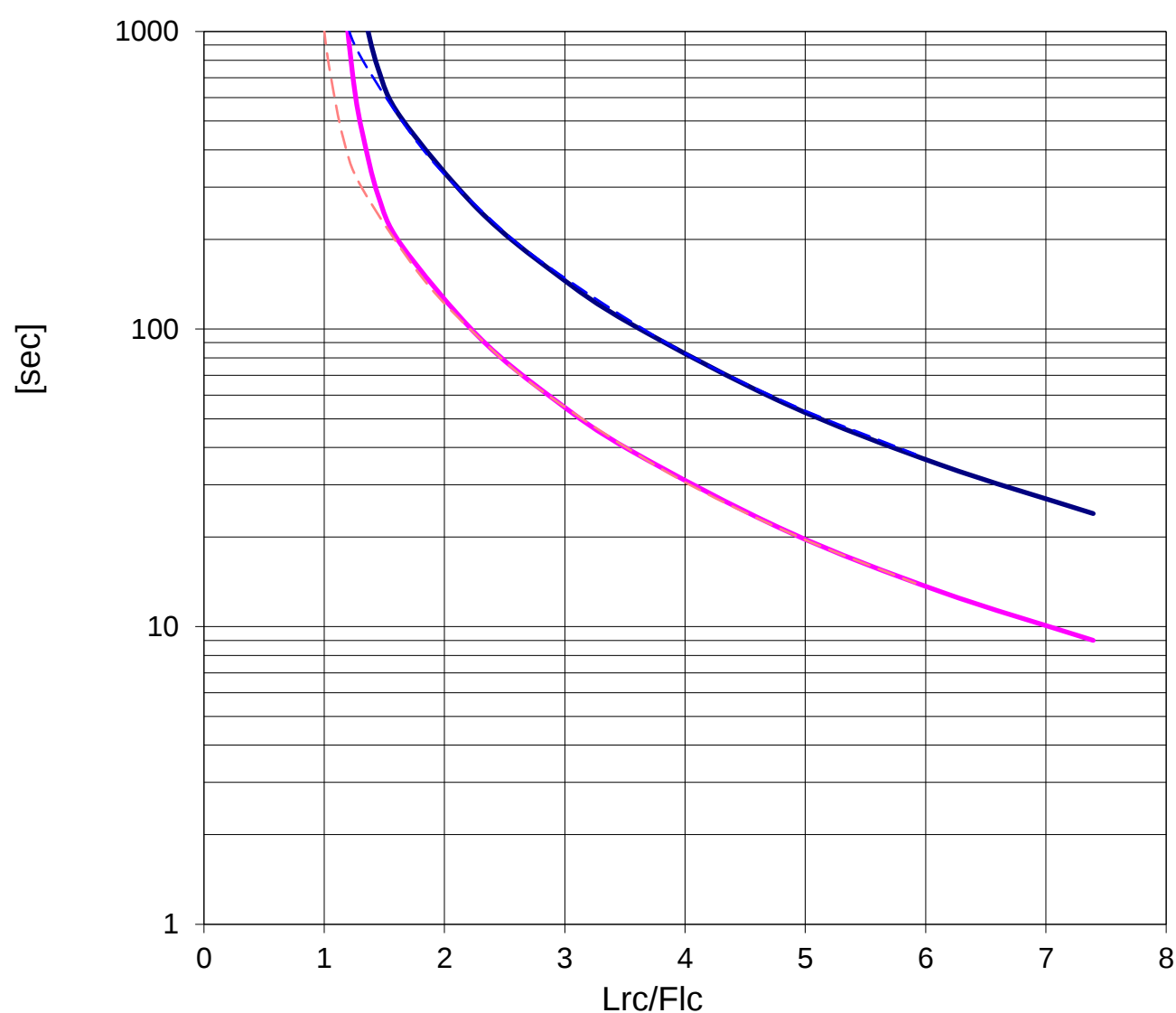
Cliente / Customer -
Impianto / Plant -
ITEM -
Numero d'offerta / Offer Number -

Motore / Motor

TCN 160MB4

Potenza nominale / Rated power	11,00	kW
Poli / Pole	4	
Tensione - Frequenza / Voltage - Frequency	400 - 50	V - Hz
Corrente / Rated current	20,44	A
Velocità / Speed	1476	rpm
Coppia / Torque	71,17	Nm

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



Valori calcolati - Data obtained by calculation method
Documento preliminare - Preliminary document

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