

# PRODUCT INFORMATION PACKET

Model No: E3TI3002091B50S41100

Catalog No: E3TI3002091B50S41100

Made in Italy TCI Series, General Purpose Low Voltage IEC motor, Safe Area, 1,50 kW, 3 phase,  
2870 RPM, D230/Y400V 50Hz, 90S Frame B5, 2 Poles, IC411



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## Nameplate Specifications

|                        |               |                            |                             |
|------------------------|---------------|----------------------------|-----------------------------|
| Output HP              | 2 Hp          | Output KW                  | 1.5 kW                      |
| Frequency              | 50 Hz         | Voltage                    | 230/400 V                   |
| Current                | 3.0 A         | Speed                      | 2870 rpm                    |
| Service Factor         | 1             | Phase                      | 3                           |
| Efficiency             | 84.8 %        | Power Factor               | 0.84                        |
| Duty                   | S1            | Insulation Class           | F                           |
| Frame                  | 90S           | Enclosure                  | Totally Enclosed Fan Cooled |
| Thermal Protection     | No Protection | Ambient Temperature        | 40 °C                       |
| Drive End Bearing Size | 6205          | Opp Drive End Bearing Size | 6205                        |
| UL                     | No            | CSA                        | No                          |
| CE                     | Yes           | IP Code                    | IP55                        |
| Number of Speeds       | 1             |                            |                             |

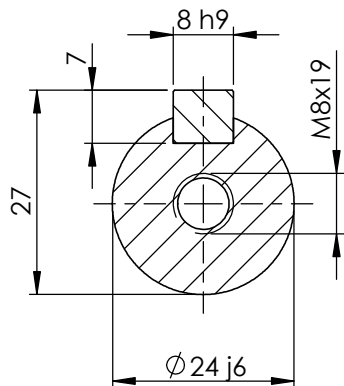
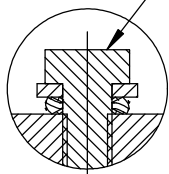
## Technical Specifications

|                       |                  |                       |                |
|-----------------------|------------------|-----------------------|----------------|
| Electrical Type       | Squirrel Cage    | Starting Method       | Direct On Line |
| Poles                 | 2                | Rotation              | Bi-Directional |
| Mounting              | B5               | Motor Orientation     | Horizontal     |
| Drive End Bearing     | 2z-C3            | Opp Drive End Bearing | 2z-C3          |
| Frame Material        | Cast Iron        | Shaft Type            | Keyed          |
| Overall Length        | 307.00 mm        | Frame Length          | 128.00 mm      |
| Shaft Diameter        | 24.000 mm        | Shaft Extension       | 50 mm          |
| Assembly/Box Mounting | Top              |                       |                |
| Outline Drawing       | B5A04T8095001B01 | Connection Drawing    | SC-01-T-1v-1a  |

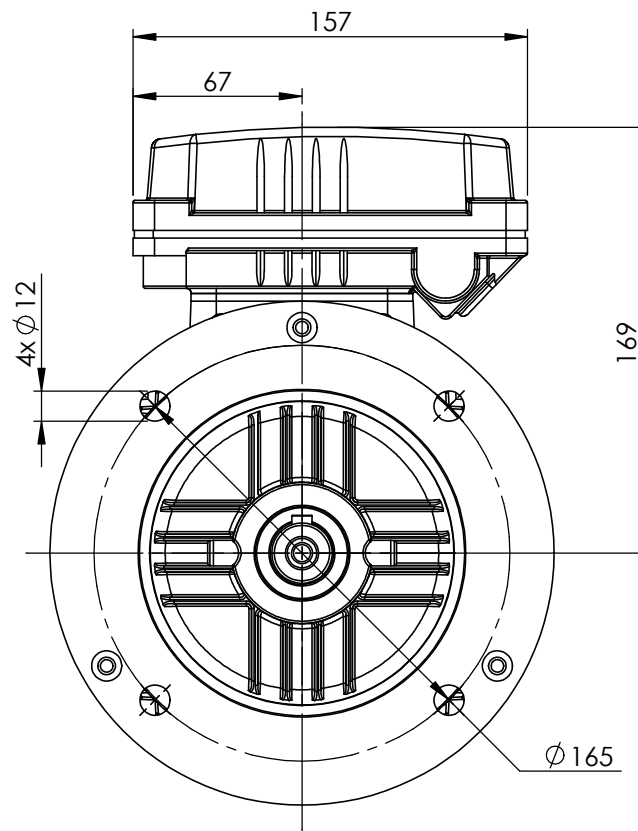
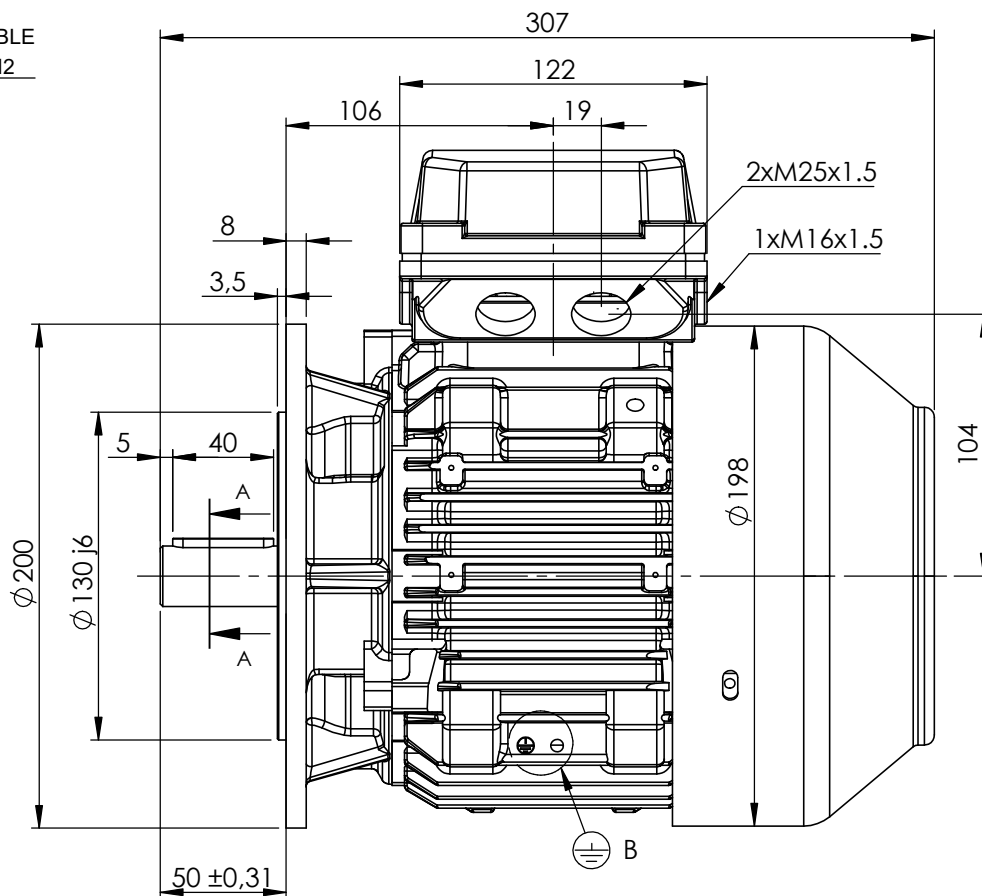
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DETAIL B

EARTH TERMINAL  
SUITABLE FOR CABLE  
SECTION 1.5-10MM<sup>2</sup>



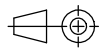
SECTION A-A  
SCALE 1 : 1



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

CUSTOMER REFERENCE AND ADDITIONAL INFORMATION:

MOTOR TYPE AND DESCRIPTION:

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                   |                    |                                                                      |                                                                                                   |                                             |                                              |  |                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------------------------|--|---------------------------------------------------------------------------------------|
| DRAWING REVISION<br>1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | REVISION BY<br>TN | DATE<br>21/04/2022 | TOLERANCES (EXCEPT AS NOTED)<br>TOLERANCES: ±2<br>* TOLERANCES: ±0.8 | DRAWN BY<br>TN                                                                                    | <div><div>REGAL™</div><div>cemp</div></div> |                                              |  |                                                                                       |
| ECO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | APPROVED BY<br>LP | DATE<br>22/04/2022 |                                                                      | DATE<br>25/10/2021                                                                                |                                             |                                              |  |                                                                                       |
| ECO DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                   |                    |                                                                      | DIMENSIONS ARE IN mm<br>ACCORDING TO IEC 60072                                                    | APPROVED BY<br>LP                           | DESCRIPTION<br><div>Motor 90 TC (S) B5</div> |  |                                                                                       |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                   |                    | REFERENCE                                                            | <div>SIZE<br/>A4</div> <div>DRAWING NUMBER<br/>B5A04T8095001B01</div> <div>SHEET<br/>1 OF 2</div> |                                             |                                              |  |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                   |                    | FIRST ANGLE<br>PROJECTION                                            |                                                                                                   |                                             |                                              |  |  |

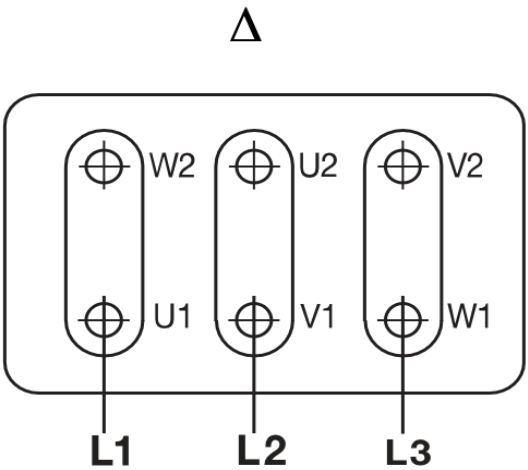
Schema di collegamento - *Connection diagram*  
Schemas de branchement - *Schaltplan*  
Esquemas de conexión



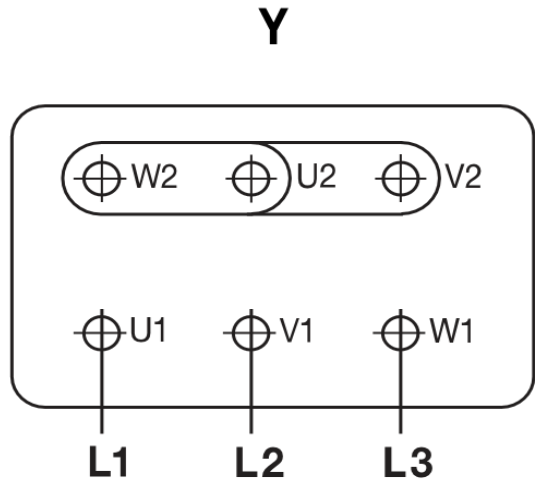
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**Motori trifase una velocità - *Single speed, three phase motors* - Moteurs triphasé une vitesse  
*Drehstrommotor Eine Drehzahlstufe* - Motores trifásico una velocidad**

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<br><i>Marking</i>                                                     | No. morsetti<br><i>terminals</i> | Morsetto ausiliare per:<br><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 -<br><i>Normally closed bi-metallic switch (**)</i>    |
| TB3 - TB4 (intervento- <i>switch off</i> )                                      | 2                                | Protettore bimetallico del freno normalmente chiuso -<br><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 -<br><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 -<br><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              | - |
| Ordine cliente / Customer order | - |
| Item                            | - |

|                                  |      |
|----------------------------------|------|
| Conferma ordine / Acknowledgment | N° - |
| Impianto / Plant                 | -    |
|                                  |      |

DATI DI PROGETTO - DESIGN DATA

|                                      |               |                                 |
|--------------------------------------|---------------|---------------------------------|
| Modo di protezione                   |               | 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% |                                 |

|                                 |                    |
|---------------------------------|--------------------|
|                                 | IP55               |
|                                 | 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                   |       |      |           | TCI 90S2 |
| 3                                                   | Numero di serie / Serial Number            |       |      |           |          |
| 4                                                   | Forma costruttiva / Shape                  |       |      |           | B5       |
| 5                                                   |                                            |       |      |           |          |
| 6                                                   |                                            |       |      |           |          |
| Dati nominali / Rated data                          |                                            |       |      |           |          |
| 7                                                   | Poli / Pole                                |       |      | n°        | 2        |
| 8                                                   | Potenza nominale / Rated power             |       |      | kW        | 1,50     |
| 9                                                   | Corrente nominale / Rated current          |       |      | A         | 3,04     |
| 10                                                  | Velocità nominale / Full Load speed        |       |      | 1/min     | 2870     |
| 11                                                  | Collegamento / Winding connection          |       |      |           | Y        |
| 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 | 2870 | 2891      | 2934     |
| 19                                                  | Corr. / Curr.                              | A     | 3,04 | 2,45      | 1,96     |
| 20                                                  | Rend / Eff                                 | %     | 84,8 | 84,8      | 82,7     |
| 21                                                  | cos φ                                      | -     | 0,84 | 0,78      | 0,67     |
| Performances all'avviamento / Starting performances |                                            |       |      |           |          |
| 22                                                  | Ia/In - LRC/FLC                            |       |      | %         | 780      |
| 23                                                  | Cosphi a rotore bloccato / LR power factor |       |      |           | 0,71     |
|                                                     | Tempo a rotore bloccato / LRWT             |       |      |           |          |
| 24                                                  | 100% Un (A caldo / Warm)                   |       |      | sec       | 5        |
| 25                                                  | (A freddo / Cold)                          |       |      | sec       | 14       |
| 26                                                  | 80% Un (A caldo / Warm)                    |       |      | sec       | 7        |
| 27                                                  | (A freddo / Cold)                          |       |      | sec       | 21       |
|                                                     | Tempo di avviamento ammissibile / ART      |       |      |           |          |
| 28                                                  | 100% Un                                    |       |      | sec       | 12       |
| 29                                                  | 80% Un                                     |       |      | sec       | 19       |
| Curva di coppia / Speed-torque values               |                                            |       |      |           |          |
| 30                                                  | Coppia nominale / Rated Torque             |       |      | Nm        | 4,99     |
| 31                                                  | Ca/Cn - LRT/FLT                            |       |      | %         | 200      |
| 32                                                  | Cmax/Cn - BDT/FLT                          |       |      | %         | 365      |
| 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                | -                       | 6205 ZZ     |
| 45                                                          | Cuscinetto post / NDE bearing              | -                       | 6205 ZZ     |
| 46                                                          | Carico radiale max / Max radial load in X1 | N                       | 633         |
| 47                                                          | Carico assiale max / Max axial load        | N                       | 334         |
| 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                      | 26          |
| 52                                                          | Momento d'inerzia / Moment of inertia      | kgm2                    | 0,0020      |
| 53                                                          | Rumore a vuoto / Noise at no load (1 m)    | Lp dB(A)                | 68          |
| 54                                                          | Vibrazioni / Vibration level               | IEC 34-14               | A           |
| 55                                                          | Limite norma / Vibration limit             | mm/sec                  | 1,60        |
|                                                             |                                            |                         |             |
| 56                                                          |                                            |                         |             |
| 57                                                          |                                            |                         |             |
| Dati entrata cavi - verniciatura / Cable entry and painting |                                            |                         |             |
| 63                                                          | Entrata cavi / Cable entry                 | IEC 60423               | 2xM20+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

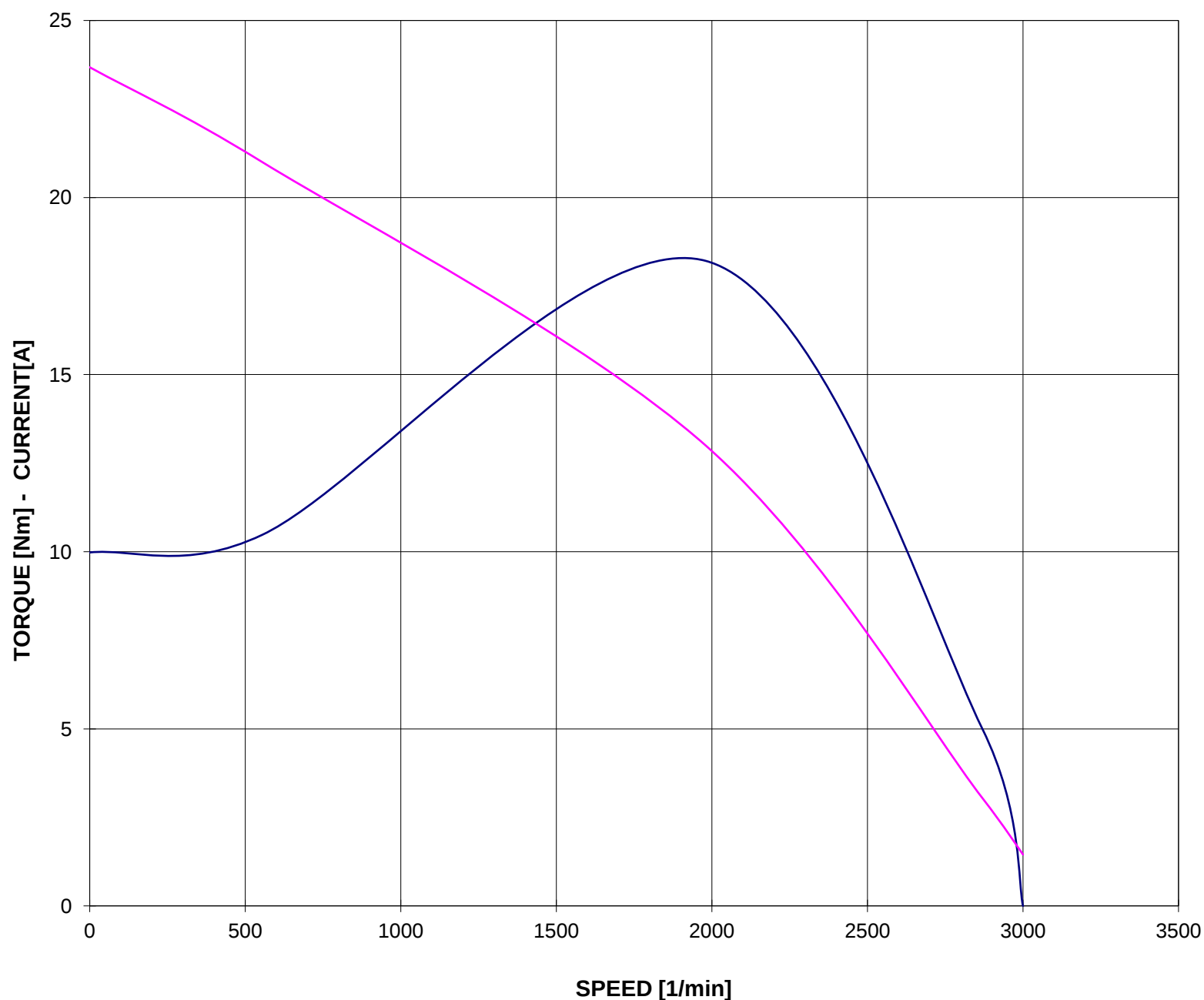
Cliente / Customer -  
Ordine cliente / Customer order -  
Impianto / Plant -  
**ITEM** -  
  
Conferma ordine / Acknowledgment -  
Numero di serie / Serial Number -

**Motore / Motor**

**TCI 90S2**

|                                            |          |        |
|--------------------------------------------|----------|--------|
| Potenza nominale / Rated power             | 1,50     | kW     |
| Poli / Pole                                | 2        |        |
| Tensione - Frequenza / Voltage - Frequency | 400 - 50 | V - Hz |
| Corrente / Rated current                   | 3,04     | A      |
| Velocità / Speed                           | 2870     | rpm    |
| Coppia / Torque                            | 4,99     | Nm     |

— COPPIA - TORQUE      — CORRENTE - CURRENT



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

Data / Date    24-feb-22

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

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

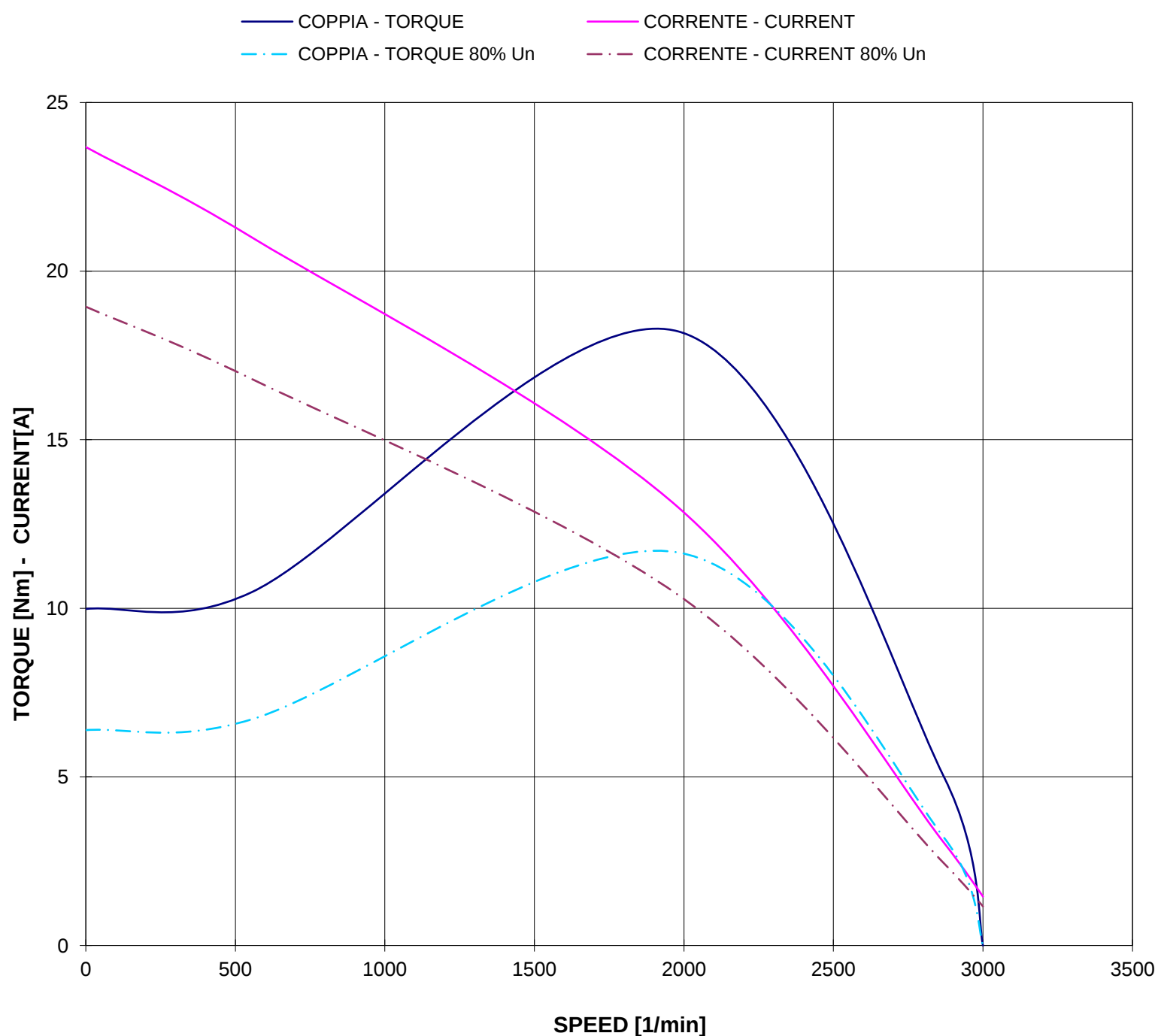
Conferma ordine / Acknowledgment -  
Numero di serie / Serial Number -

**Motore / Motor**

Potenza nominale / Rated power  
Poli / Pole  
Tensione - Frequenza / Voltage - Frequency  
Corrente / Rated current  
Velocità / Speed  
Coppia / Torque

**TCI 90S2**

1,50 kW  
2  
400 - 50 V - Hz  
3,04 A  
2870 rpm  
4,99 Nm



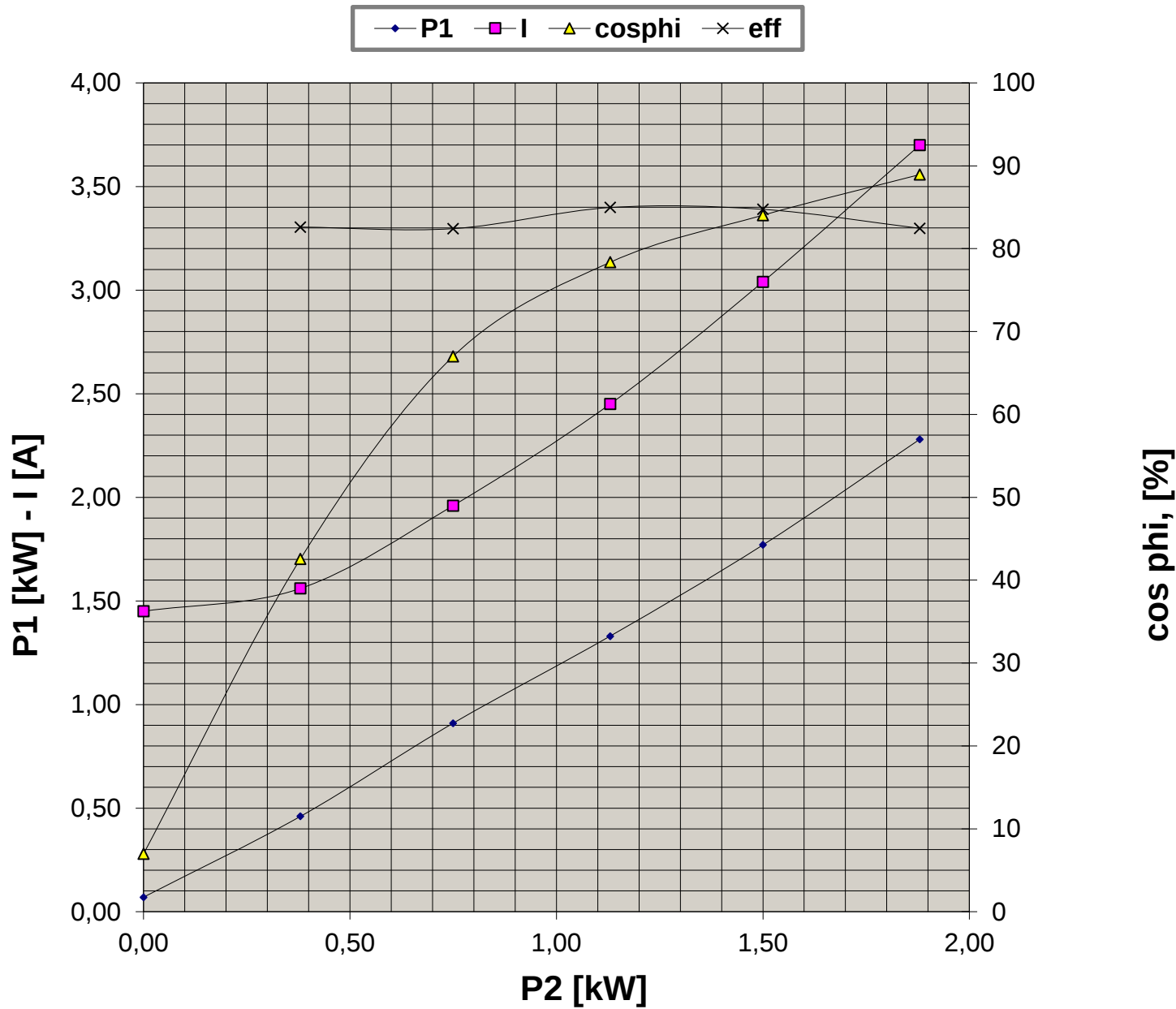
Valori calcolati - Data obtained by calculation method  
Documento preliminare - Preliminary document

Data / Date 24-feb-22

CURVE CARATTERISTICHE  
PERFORMANCE CURVES

Cliente / Customer -  
Ordine cliente / Customer order -  
Impianto / Plant -  
**ITEM** -  
  
Conferma ordine / Acknowledgment -  
Numero di serie / Serial Number -

|                                            |                 |        |
|--------------------------------------------|-----------------|--------|
| <b>Motore / Motor</b>                      | <b>TCI 90S2</b> |        |
| Potenza nominale / Rated power             | 1,50            | kW     |
| Poli / Pole                                | 2               |        |
| Tensione - Frequenza / Voltage - Frequency | 400 - 50        | V - Hz |
| Corrente / Rated current                   | 3,04            | A      |
| Velocità / Speed                           | 2870            | rpm    |
| Coppia / Torque                            | 4,99            | Nm     |



## CURVA LIMITE CORRENTE TEMPO THERMAL WITHSTAND CURVE

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

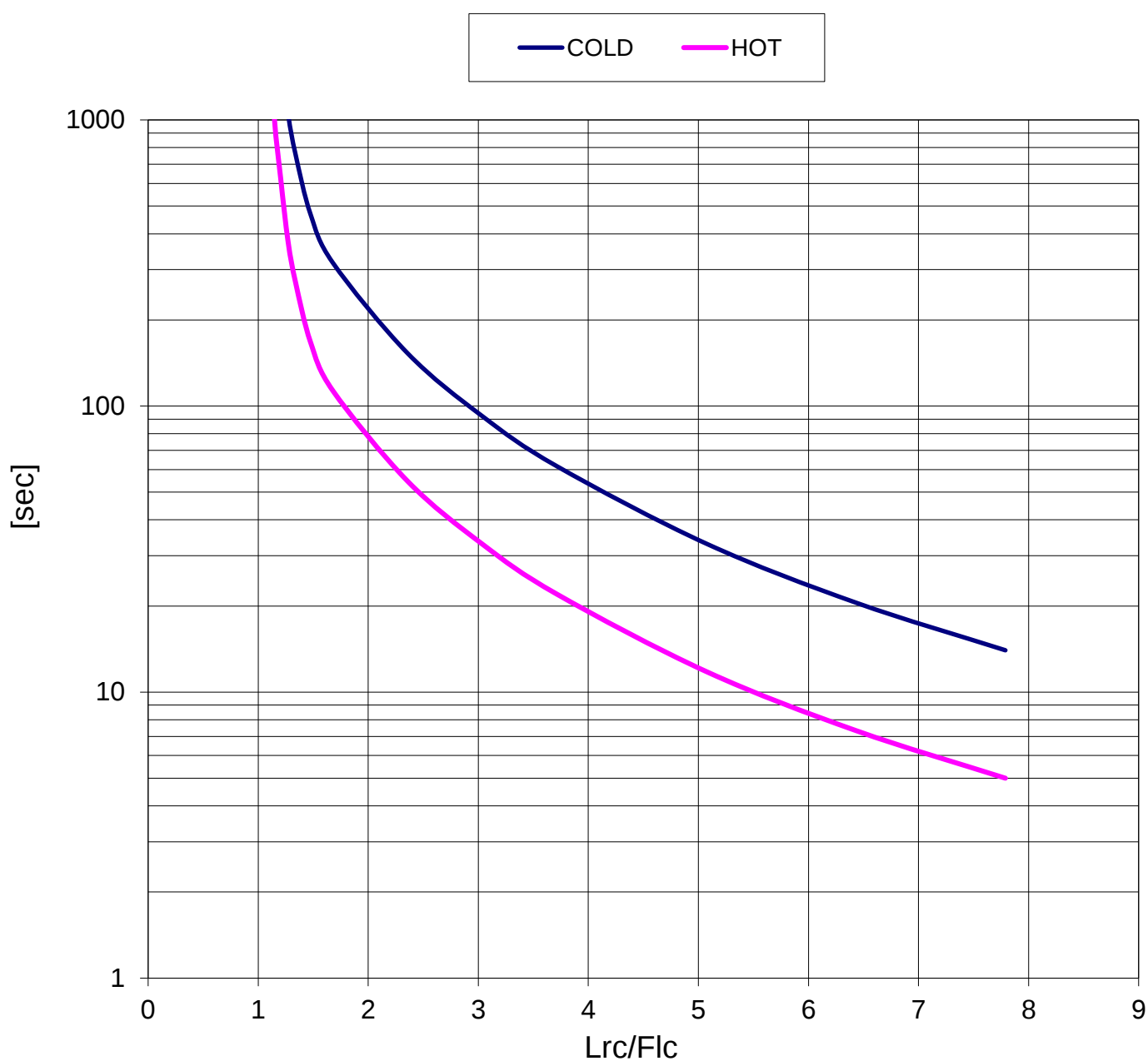
Conferma ordine / Acknowledgment -  
Numero di serie / Serial Number -

### Motore / Motor

Potenza nominale / Rated power  
Poli / Pole  
Tensione - Frequenza / Voltage - Frequency  
Corrente / Rated current  
Velocità / Speed  
Coppia / Torque

### TCI 90S2

1,50 kW  
2  
400 - 50 V - Hz  
3,04 A  
2870 rpm  
4,99 Nm



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

Data / Date 24-feb-22

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

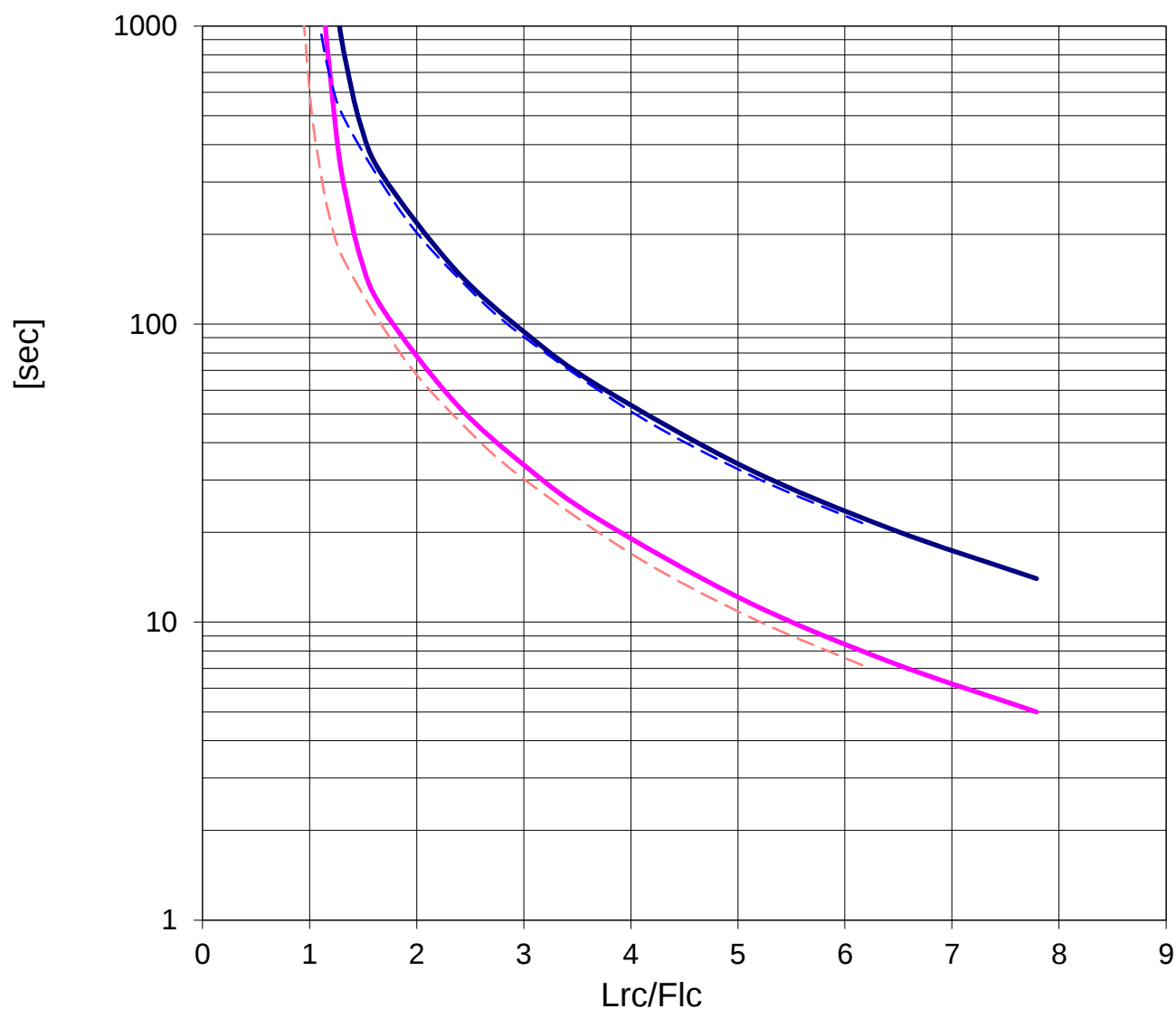
Ciente / Customer -  
Ordine cliente / Customer order -  
Impianto / Plant -  
**ITEM** -  
  
Conferma ordine / Acknowledgment -  
Numero di serie / Serial Number -

**Motore / Motor**

**TCI 90S2**

|                                            |          |        |
|--------------------------------------------|----------|--------|
| Potenza nominale / Rated power             | 1,50     | kW     |
| Poli / Pole                                | 2        |        |
| Tensione - Frequenza / Voltage - Frequency | 400 - 50 | V - Hz |
| Corrente / Rated current                   | 3,04     | A      |
| Velocità / Speed                           | 2870     | rpm    |
| Coppia / Torque                            | 4,99     | Nm     |

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



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

Data / Date 24-feb-22