nplate TD-00015J

Rotary Joint | BN 637426



Contactless Data Transmission



637426 - Standard outline

The contactless data channels, realized by rotating capacitive couplers, offer improved lifetime without the need for maintenance.

The real-time ethernet contactless data types are protocol independent (only using OSI-Layer 1) and suitable for nearly all 100BASE-TX based industrial ethernet standards.

POWERLINK

PROFINET EtherCAT SERCOS III EtherNet/IP VARAN IEEE-1588 v2 (PTP)

Available Configurations

| Type | |
|------|---|
| 1 | 1000BASE-T Ethernet |
| 4 | 1 Channel ethernet for real-time applications 100BASE-TX, full duplex |
| 5 | 1 Channel ethernet for real-time applications 100BASE-TX, half duplex |
| 7 | 2 Channel ethernet (multiplexed) for real-time applications 100BASE-TX, full duplex |
| 8 | 2 Channel ethernet (multiplexed) for real-time applications 100BASE-TX, half duplex |

Transmission Type 1:

| 1000BASE-T Ethernet-Channel | One contactless coupler for one channel | | | | | |
|---|---|--|--|--|--|--|
| Supported Ethernet Standards | 10BASE-T (IEEE802.3 Clause 14) 100BASE-TX (IEEE802.3 Clause 25) 1000BASE-T (IEEE802.3 Clause 40) Auto negotiation provided to select Ethernet-Standard and full/ half duplex mode automatically | | | | | |
| OSI Layer operation | Layer 1 - 2 | | | | | |
| Supported Protocols | Not for real-time ethernet applications | | | | | |
| Ethernet Frame Loss Ratio According to RFC2544 | \leq 1 x 10 ⁻⁹ Measured for 800s with 64 byte frames at 99% channel utilization, corresponds to BER \leq 1 x 10 ⁻¹² | | | | | |
| Data Interface Connection | Cat.6A S/FTP 4x2xAWG26/7 (PiMF) at Body and Hollow shaft side | | | | | |



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Transmission Type 4 + Type 5:

| 100BASE-TX Ethernet Channel | One signal channel provided | | | | | |
|---|--|----------------|--|--|--|--|
| | Type 4 | Type 5 | | | | |
| Supported Ethernet Standards | 100BASE-TX (IEEE802.3 Clause 25), autonegotiation (full duplex only) 100BASE-TX (IEEE802.3 Clause 25) autonegotiation (half duplex only) | | | | | |
| Supported Protocols | Real-time ethe | rnet protocols | | | | |
| OSI Layer operation | Layer 1 (physical) | | | | | |
| Ethernet Frame Loss Ratio According to RFC2544 | \leq 1 x 10 ⁻⁹ Measured for 8000s with 64 byte frames at 99% channel utilization, corresponds to BER \leq 1 x 10 ⁻¹² | | | | | |
| Data Interface Connection | Cat.6A S/FTP 4x2xAWG26/7 (PiMF) at Body and Hollow shaft side | | | | | |

Transmission Type 7 + Type 8:

| 100BASE-TX Ethernet Channel | Two signal channels over one contactless transmission channel, signals are multiplexed, no redundancy | | | | | |
|---|--|--------|--|--|--|--|
| | Type 7 | Type 8 | | | | |
| Supported Ethernet Standards | 100BASE-TX (IEEE802.3 Clause 25), autonegotiation (full duplex only) 100BASE-TX (IEEE802.3 Clause 25), autonegotiation (half duplex only) | | | | | |
| Supported Protocols | Real-time ethernet protocols | | | | | |
| OSI Layer operation | Layer 1 (physical) | | | | | |
| Multiplexer | Time domain multiplexing | | | | | |
| Ethernet Frame Loss Ratio According to RFC2544 | \leq 1 x 10 ⁻⁹ Measured for 8000s with 64 byte frames at 99% channel utilization, corresponds to BER \leq 1 x 10 ⁻¹² | | | | | |
| Data Interface Connection | Cat.6A S/FTP 4x2xAWG26/7 (PiMF) at Body and Hollow shaft side | | | | | |

Operating condition

| External Power Supply | Power Supply has to be a SELV type acc. to IEC60950-1 The current must be externally limited to 4 A | | | | |
|----------------------------------|---|--|--|--|--|
| Input Voltage Range | 21.6 V to 28.8 V DC; 0 V DC is isolated to case ground (potential-free) | | | | |
| Current Consumption, typ. / max. | 0.33 A / 0.5 A @ 24 V Supply Voltage | | | | |
| Inrush Current | 3 A (duration 2 ms) | | | | |
| Power Consumption, typ. / max. | 8 W/ 12 W | | | | |
| Supply Voltage Connection | 2 x 0.25 mm ² LiYCY cable, shielded, outer diameter ~3.9 mm, at Body and Hollow shaft side | | | | |





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Standards and directives

| Applicable EU Directive | EMC Directive 2014/30/EU | | | |
|-------------------------|--------------------------|-----------------------------------|--|--|
| Applied standards | DIN EN 55032 (Class B) | Radio disturbance characteristics | | |
| Applied standards | DIN EN 55024 | Immunity characteristics | | |

Mechanical data

| | Sealed version | Unsealed version (optional) | | | | |
|--|----------------------------------|-----------------------------------|--|--|--|--|
| IP protection level | IP60 IP40 | | | | | |
| Rotating speed, max. | 300 rpm 1000 rpm | | | | | |
| Acceleration, max. | 750 rad/s² (119 rounds/s²) | 750 rad/s² (119 rounds/s²) | | | | |
| Life, min. | 20 x 10 ⁶ revolutions | 200 x 10 ⁶ revolutions | | | | |
| Torque (room / min. temperature), max. | 3 Nm 1,5 Nm | | | | | |
| Interface loads, max. | No loads allowed | | | | | |
| Case material | Aluminur | m alloy | | | | |
| Case surface finish | Chromate conversion coat | | | | | |
| Weight, approx. | 2.3 kg | | | | | |
| Marking | Adhesive label | | | | | |

Environmental conditions

| Operation | | | | | | |
|---------------------------|----------------------|--|--|--|--|--|
| Ambient temperature range | -30 °C to +71 °C | | | | | |
| Relative humidity, max. | 95% (non-condensing) | | | | | |
| Maintenance | Not required | | | | | |
| Storage | | | | | | |
| Ambient temperature range | -40 °C to +85 °C | | | | | |
| Relative humidity, max. | 95% (non-condensing) | | | | | |

Applicable documents

| Drawing | See table "Ordering information" |
|-----------------|--|
| Circuit Diagram | 637426CXXXX-CD (XXXX according to ordering number) |

emplate 1D-00015,



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Ordering information

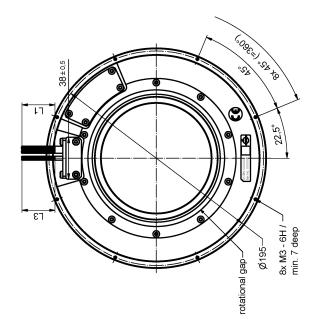
| Order number | · Drawing | Options | Туре | Contactless data interface | | | Power supply interface | | | | |
|--------------|------------------|----------|------|----------------------------|------------|-------------------|------------------------|--------------|-------------|-----------------|----------|
| | | | | Body | L1*/ mm | Hollow shaft | L2* / mm | Body | L3* / mm | Hollow shaft | L4* / mm |
| 637426C0001 | Standard outline | | 1 | Connector RJ45 | 1400 | Connector RJ45 | 1400 | Flying leads | 1400 | Flying leads | 1400 |
| 637426C0004 | Standard outline | | 4 | Connector RJ45 | 1400 | Connector RJ45 | 1400 | Flying leads | 1400 | Flying leads | 1400 |
| 637426C0005 | Standard outline | | 5 | Connector RJ45 | 1400 | Connector RJ45 | 1400 | Flying leads | 1400 | Flying leads | 1400 |
| 637426C0007 | Standard outline | | 7 | Connector RJ45 | 1400 | Connector RJ45 | 1400 | Flying leads | 1400 | Flying leads | 1400 |
| 637426C0008 | Standard outline | | 8 | Connector RJ45 | 1400 | Connector RJ45 | 1400 | Flying leads | 1400 | Flying leads | 1400 |
| 637426C0100 | Standard outline | unsealed | 7 | Connector RJ45 | 1400 | Connector RJ45 | 1400 | Flying leads | 1400 | Flying leads | 1400 |
| 637426C0101 | Standard outline | unsealed | 4 | Connector RJ45 | 1400 | Connector RJ45 | 1400 | Flying leads | 1400 | Flying leads | 1400 |
| 637426C0102 | 637426C0102-0E | | 7 | Connector RJ45 | 1400 | Flying leads | 1400 | Flying leads | 1400 | Flying leads | 1400 |
| 637426C0103 | 637426C0103-0E | unsealed | 4 | Flying leads | 12000 | Flying leads | 12000 | Flying leads | 12000 | Flying leads | 12000 |
| 637426C0104 | 637426C0104-0E | | 7 | Connector RJ45 | 1400 | Connector RJ45 | 1400 | Flying leads | 1400 | Flying leads | 1400 |
| 637426C0105 | Standard outline | | 5 | Flying leads | 2000 | Flying leads | 15000 | Flying leads | 2000 | Flying leads | 15000 |

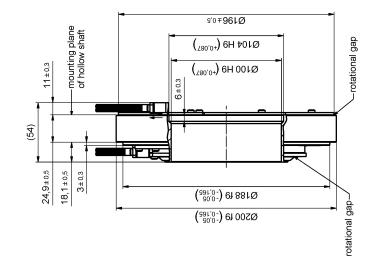
^{*}Cable length tolerance ±5%

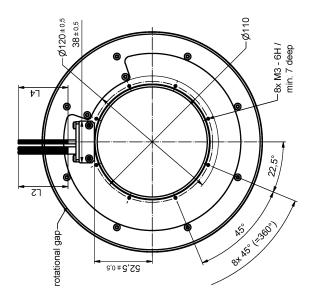
SPINNER

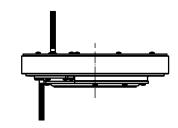
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Standard outline (all dimensions in millimeter)









optional cable exit (axial direction)

