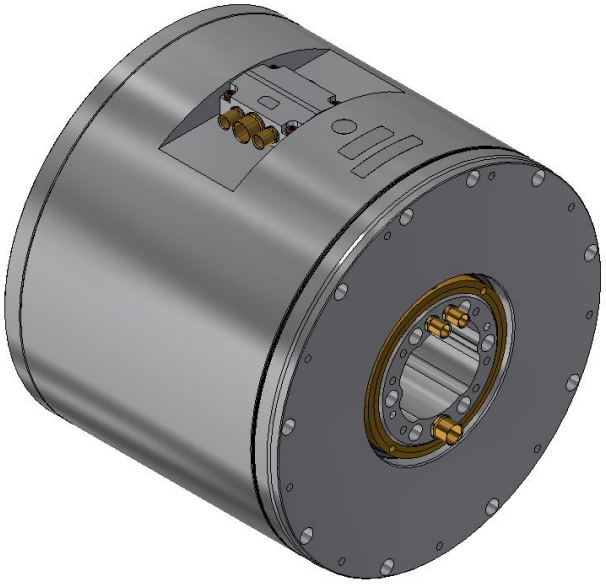
Rotary Joint || BN 637491

Contactless Data and Power Transmission Channels



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

Available configurations

Type	
7	2 Channel ethernet (multiplexed) for real-time applications 100BASE-TX, full duplex

Transmission type 7

100BASE-TX Ethernet Channel	Two signal channels over one contactless transmission channel, signals are multiplexed, no redundancy
Supported ethernet standards	100BASE-TX (IEEE802.3 Clause 25), autonegotiation (full duplex only)
Supported protocols	Real-time ethernet protocols
OSI layer operation	Layer 1 (physical)
Link Loss Forwarding (LLF)	Active (hollow shaft to body)
Multiplexer	Time domain multiplexing
Ethernet frame loss ratio according to RFC2544	≤ 1 x 10^{-9} Measured for 8000s with 64 byte frames at 99% channel utilization, corresponds to BER ≤ 1 x 10^{-12}
Data interface connection	Cat.6A S/FTP 4x2xAWG26/7 (PiMF) per signal channel at body and hollow shaft side (cable length = 1400 mm ±5%)

Electrical characteristics for data transmission

Power Consumption, typ. / max.	8 W / 12 W
Interface type DC-Input	Internally wired

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Electrical characteristics for DC power transmission

External power supply	Power supply has to be a ES1 type acc. to DIN EN 62368-1 The current must be externally limited to 25 A
Interface type DC-Input	Cable, 2 x 4.0mm^2, shielded, flying leads, cable length = 1400 mm ±5%
Interface type DC-Output	Cable, 2 x 4.0mm^2, shielded, flying leads, cable length = 1400 mm ±5%
Input voltage range	48 V DC ± 4V
Inrush Current, typ.	6 A internally limited during power up
Output voltage	48 V DC ± 2V potential free against case ground
Output voltage ripple, max.	± 1.0 V
Output current, continuous	15.8 A Power derating dependent on case temperature and input voltage
Output Power, typ.	750 W
Efficiency, typ.	93% @ full load (without data transmission)
Type of load	Resistive
Output overcurrent protection	Hiccup mode
Output short circuit proof	Hiccup mode
Overtemperature protection	yes, internally

Standards and directives

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

Mechanical characteristics

Rotating speed, max.	300 rpm
Acceleration, max.	500 rad/s^2 (80 rounds/s^2)
Life, min.	200 x 10^6 revolutions
MTBF	300 000 h
Torque (room temperature), approx.	3 N m @ start-up 3 N m @ rotation
Interface loads, max.	± 50 N (in axial direction only, excluding the product weight)
Case material	aluminum alloy
Case surface finish	chromate conversion coat, painted black RAL9005
IP protection level	IP60
Weight, approx.	15 kg
Marking	adhesive label

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Environmental conditions

Operation	
Ambient temperature range	-30 °C to + 45 °C
Cooling	The temperature of at least one of the “cooling contact areas” as defined in the outline drawing must not exceed 55°C. Customer shall assure complete metallic contact to at least one of the “cooling contact areas”. Additional forced cooling recommended
Relative humidity, max.	95% (non-condensing)
Shock	3 g / 11 ms half sine, 3 shocks in each direction of 3 orthogonal axes
Vibration	20-50 Hz, PSD of 0,002 g^2/Hz falling to 0,0001 g^2/Hz at 500 Hz in each of 3 orthogonal axes. Duration: 15 min/axis.
Maintenance	Not required
Storage	
Ambient temperature range	-40 to +85°C
Relative humidity, max.	95% (non-condensing)

Applicable documents

Circuit diagram	637491C0007-CD, Issue A

Outline drawing (all dimensions in millimeter)