

SRH520CN CAN OUTPUT

rugged contactless rotary sensors

PERFORMANCE

ELECTRICAL

Measurement range	°	360
Supply voltage	Vdc	9 to 30 unregulated
Over voltage protection	Vdc	Up to 40
Maximum supply current	mA	<80
Reverse polarity protection		Yes
Short circuit protection		Yes
Power-on settlement time	S	<1
Resolution		14bit (0.022°/LSB)
Non-linearity*	%	< ±0.2
Temperature coefficient	ppm/°C	< ±25

*Non-linearity is measured on a computerised calibration system

Output - Order code

Communication profile

Device profile

Direction

Output noise

Input/output delay

SRH520CN/J

CAN SAE J1939
-
Factory set
±1 Bit
Maximum = selected frame rate,
which is factory set

SRH520CN/C

CANopen CIA DS 301
CIA DS 406
Customer configurable
±1 Bit
Maximum = selected frame rate,
which can be customer set

MECHANICAL

Mechanical angle	°	360, continuous
Operating torque - max	g-cm	1000
Shaft velocity maximum	°/sec	3600
Weight	g	265 (without cable)
Mounting		Use 3 x M6x1 threaded holes in front face or 3 x M6 (or 1/4 UNC) clearance holes through the flange – See dimensions for details
Phasing		When the shaft flat is facing towards the M12 connector, sensor output is at mid electrical angle (±5°)

ENVIRONMENTAL

Protection class		IP68 and IP69K for shaft seal side (and rear cap seal) IP67 with mating connector and cable assembly attached and fully engaged
Life		20 million operations (10 x 10 ⁶ cycles) of ±75° Sensing element life is essentially infinite (contactless), and the SRH520CN life figures refer to the operating shaft seal. Mechanical loads (axial and radial) on the shaft should also be a considered.
Dither life		Contactless - no degradation due to shaft dither
Shaft side load		2kg mounted on sensor shaft - tested 3 million cycles
Operational temperature†	°C	-40 to +85 (9 to 27V supply) -40 to +80 (30V supply) Derate upper temperature limit by 1.7°C for every 1V increase in supply from 27Vdc
Storage temperature	°C	-55 to +125
Vibration		BS EN 60068-2-64:1995 Sec 8.4 (31.4gn rms) 20 to 2000Hz Random
Shock		3m drop onto concrete and 2500g – all axes
EMC Immunity level		BS EN 61000-4-3:1999, to 100V/m, 80MHz to 1GHz and 1.4GHz to 2.7GHz (2004/108/EC)
Salt spray		BS EN 60068-2-52: 1996, Test Kb Severity 2 (48Hrs)
Humidity		BS EN 60068-2-30: 2005, Severity Db (55°C, 93%RH)

† See Maximum Operating Temperature – Derating graph on page 6

If the maximum operating temperature is exceeded, the voltage regulator will shut down to protect the device from overheating

OPTIONS

SRH520CN/J

Output mode

Output direction

Baud rate

Node ID

Frame rate

SRH520CN/C

Output mode

Baud rate (factory set)

Node ID (factory set)

Output direction

Frame rate

SRH520CN/J and SRH520CN/C

Operating levers

Mating connectors

FACTORY SET

Mode J – CAN SAE J1939

Both clockwise, both anticlockwise or CH1 CW, CH2 ACW

50, 125, 250, 500 kbit/s or 1 Mbit/s

Hexadecimal value between 01 and 7F

25, 50 or 100mS

PARTIALLY CONFIGURABLE VIA CANopen INTERFACE

Mode C – CANopen CiA DS 301/ DS406 (Class 1)

50, 125, 250, 500 kbit/s or 1 Mbit/s

Hexadecimal value between 01 and 7F

Can be customer configured

Can be customer configured

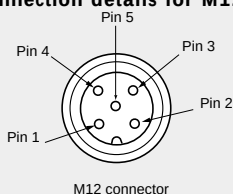
Operating levers 155 or 230mm long can be ordered separately. See details on page 7

Mating M12 straight connector and cable assembly must be ordered separately. See details on page 6 and below.

ELECTRICAL CONNECTIONS

Series M12 screw locking receptacle fitted to sensor body. Mating cabled sockets to be ordered separately.

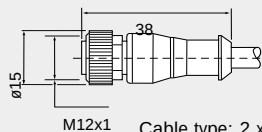
Connection details for M12 connector



Pin No.	Cable colour	Description
1	Screen	Cable screen
2	Red	+V supply
3	Black	0V Supply (GND)
4	White	CAN-H
5	Blue	CAN-L

M12 connector

M12 mating connector and cable assembly



M12x1

Cable type: 2 x 0.25 + 2 x 0.34mm² PUR (UL/CSA) jacket

M12 connector IP67

2 metre	X61-242-002
5 metre	X61-242-004
10 metre	X61-242-006

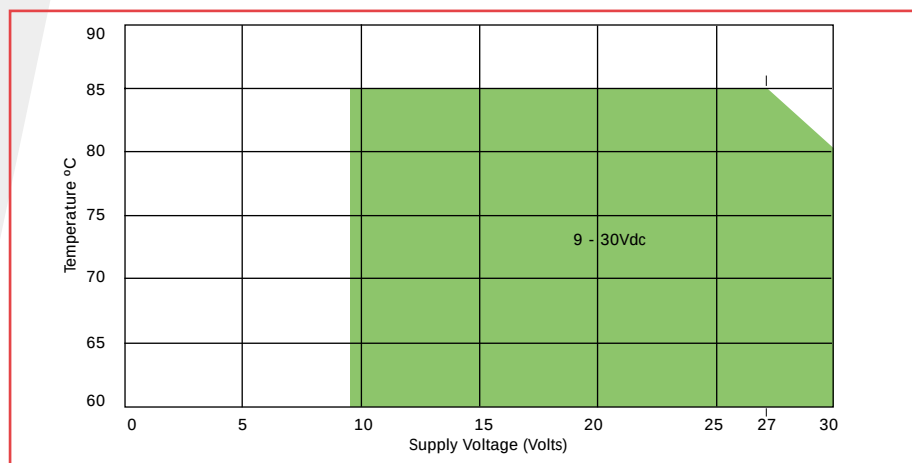
Recommended connector mating torque – 0.6Nm

When connecting the sensor, care should be taken with the correct connections.

The sensor is provided with indefinite reverse polarity protection and short circuit protection between output to GND, **but if the outputs are connected to the supply this will result in device failure.**

SRH520CN

MAXIMUM OPERATING TEMPERATURE DERATING CURVE



AVAILABILITY

All standard configurations can be supplied rapidly from the factory – check with your local supplier for more details

ORDERING CODES

J1939 OUTPUT

SRH520CN/J /...../...../...../.....

Mode	J = J1939	
Direction	1 = Both clockwise 2 = Both anticlockwise 3 = CH1 clockwise; CH2 anticlockwise	
Baud rate	1 = 50 kbit/s 2 = 125 kbit/s 3 = 250 kbit/s 4 = 500 kbit/s 5 = 1 Mbit/s	
Node ID	Between 01 and 7F in Hexadecimal	
Frame rate	1 = 25mS 2 = 50mS 3 = 100mS	

The above options are factory set before despatch

CANopen OUTPUT

SRH520CN/C/1/...../.....

Mode	C = CANopen	
Output code	1 = CANopen (DS406) Class 1	
Baud rate	1 = 50 kbit/s 2 = 125 kbit/s 3 = 250 kbit/s 4 = 500 kbit/s 5 = 1 Mbit/s	
Node ID	Between 01 and 7F in Hexadecimal	

Baud rate and Node ID are initially set at the factory before despatch.

Communication functionality and objects used in the CANopen encoder profile are described in the EDS file which can be downloaded from the SRH520CN product page at www.pennyandgiles.com

Some of these objects are customer configurable via the CANopen interface.

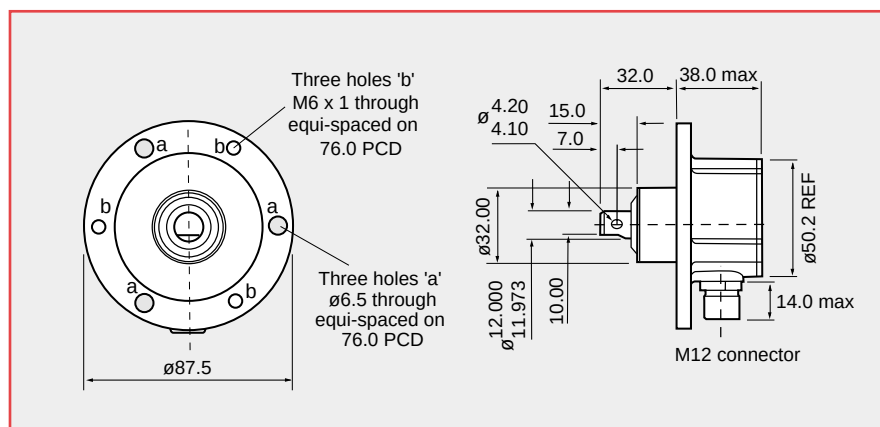
Accessories (ordered separately)

Drive lever kit, including pin
Mating connector/cable assembly

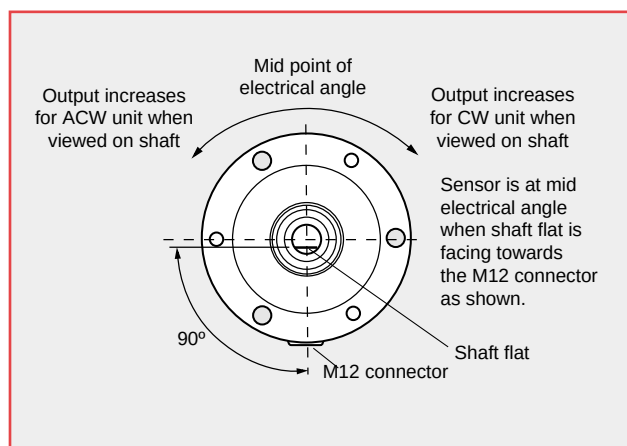
SA202195/MK1 or 2 – see page 7
2 metre length X61-242-002 see details on page 5
5 metre length X61-242-004
10 metre length X61-242-006

DIMENSIONS

Note: drawings not to scale



PHASING OF SHAFT TO HOUSING



LEVER OPTIONS (order separately)

Lever SA202195/MK1 L = 155
Lever SA202195/MK2 L = 230

