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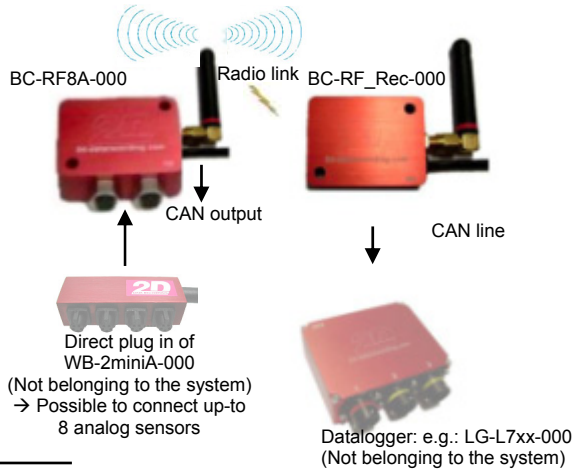
# SY-RF8A-000 Analog input radio data monitoring system with CAN output

## Function

The 2D Analog input radio data monitoring system offers wireless transmission of up-to 2 CAN channels with a maximum range of 200m. It consists of a 8 analog input amplifier combined with a short range telemetry transmitter in one compact housing + RF receiver both with full CAN 2.0A interface.

**Features (BC-RF8A-000)**

- Measures up to 8 analogue signals with each selectable input range of 0-5, 0-10 or 0-20V
- Analog 1 and 5 with switchable pullup resistors
- Measures up to 2 digital signals
- On request with laptime information channels: Sourcechannel can be a digital sensor (e.g. 2D standard lap receiver) or a various analogue sensor




## Technical specifications

### Electrical characteristics

| | | |
|---|---|---|
| Power supply | 8 to 18 | V DC |
| Current consumption@12V | | |
| RF transmitter (BC-RF8A) | typ. 50 | mA |
| RF receiver (BC-RF_Rec) | typ. 30 | mA |
| Max current for sensor (transmitter) | | |
| @+5V | 50 | mA |
| @+12V | 100 | mA |
| Sampling rate | max. 400 | Hz |

### CAN interface

| | | |
|---|---|---|
| CAN send ID's | 2 | ID's |
| CAN baudrates | 100/125/250/500/1000 | kBaud |
| Software switchable by 2D WinIt | Yes | |
| Channel resolution | 16 | Bit |
| CAN identifiers: | | |
| CAN 2.0A (base frame): 11 Bit | standard | |
| CAN 2.0B (extended frame): 29 Bit | on request | |

### RF transmitter (BC-RF8A-000)

| | | |
|---|---|---|
| RF Frequency | 433 | MHz |
| RF data rate | 250 | Kbps |
| Sensitivity@250Kbps | -90 | dBm |
| Output power | +10 | dBm |
| Range of transmission | max. 200 | m |
| Channels | | |
| Analog inputs | max. 8 | |
| Analog input range | 5/ 10 / 20 | V |
| Digital inputs | max. 2 | |
| Lap/Section inputs | max. 1 | |

### RF receiver (BC-RF_Rec)

CAN frame:

| | | |
|---|---|---|
| data rate | 200 | Hz/ID |
| channel allocation | 4 | CH/ID |
| number of CAN ID's | 2 | ID's |
| sum data rate | 1600 samples / sec | |

### Mechanical characteristics

| | | |
|---|---|---|
| *RF transmitter (BC-RF8A-000)* | | |
| Weight (incl. cables) | 60 | g |
| Housing material | aluminium | |
| *RF receiver (BC-RF_Rec-000)* | | |
| Weight (incl. cables) | 35 | g |
| Housing material | aluminium | |
| Dimension (receiver&transmitter) | refer 2nd page | |

### Cable (CAN-line)

| | | |
|---|---|---|
| type | Raychem, EPD | |
| wire cross section | 4 x AWG 26 | |
| length | 200 | mm |

### Connections

→ refer 2nd page for details

### Vibration resistance

Transmitter & Receiver

| | | |
|---|---|---|
| Shock | 40 | G |
| during a time period of | 10 | ms |
| Vibration tested at | 12 | G |
| tested with a frequency of. | 1000 | Hz |

### Environmental data

Transmitter & Receiver

| | | |
|---|---|---|
| Ambient operating range | -10 to +75 | °C |
| Humidity | 5 to 95 | % |
| Sealing class | IP 67 | |

### Ordering information

| | |
|---|---|
| Art.No.: | |
| Input connector fixed at housing.. | SY-RF8A-000 |
| Input connector with flying leads.. | SY-RF8A-001 |



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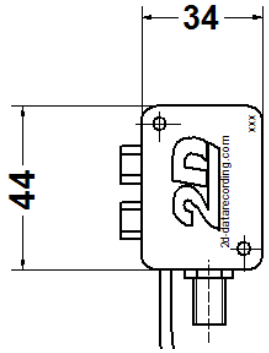
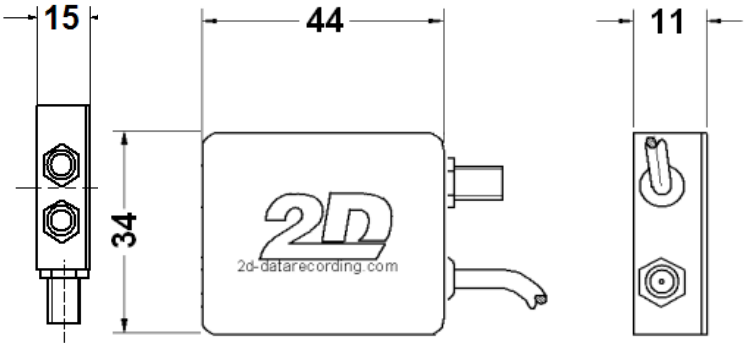
# SY-RF8A-000 Analog input radio data monitoring system with CAN output

## Dimensions




RF transmitter: BC-RF_8A-000




RF receiver: BC-RF_Rec-000

## Connector layout

### CAN-line (standard)

CAN-line Binder 712, 5pin

| Pin | Name | Description | Color (standard) |
|---|---|---|---|
| | | | |
| 1 | CAN H | CAN Bus High | white |
| 2 | CAN L | CAN Bus Low | green |
| 3 | GND | Ground | black |
| 4 | n.c. | Not connected | - |
| 5 | Vext | Power IN (8-18V) | red |

### Analog Input

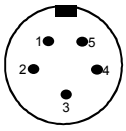
Analog Input Binder 712, 8pin

| Pin | Name | Description |
|---|---|---|
| | | |
| 1 | Vcc | +5V sensor supply |
| 2 | AGND | Analog ground |
| 3 | Dig1/2 | Digital input |
| 4 | +12V | +12V sensor supply |
| 5 | AIN1/5 | Analog input |
| 6 | AIN2/6 | Analog input |
| 7 | AIN3/7 | Analog input |
| 8 | AIN4/8 | Analog input |

Standard: Input connector (2 x Binder 712, 8PF) fixed at housing → SY-RF8A-000
On request: Input connector (2 x Binder 712, 8PF) on flying leads → SY-RF8A-001

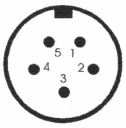
## Connector type

**Plug at module**

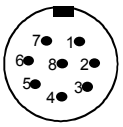



Binder 712, 5 PM
(front side)

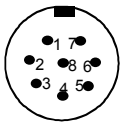
**Mating plug**




Binder 712, 5 PF
(front side)




Binder 712, 8 PF
(front side)




Binder 712, 8 PM
(front side)

### RF antenna

| | Name | Description |
|---|---|---|
| | | |
| | Pin | signal |
| | outline | GND |

SMA, female
(CAN module)

SMA, male
(GPS antenna)

On request some options are possible for the CAN-line connector of all 2D CAN modules. Please take a look at the product group [Connectors] in the 2D Product catalog



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