

# SWEDISH MICROWAVE

# Manual

---

**BDC**

General Guidelines

# Table of Content

1. Description .....	3
2. Safety warnings.....	3
3. Installation instructions .....	3
4. Alarm, Monitoring & Control.....	5
5. Troubleshooting.....	6
6. Maintenance and Repair .....	6
7. Technical specifications .....	7
8. Warranty and Legal .....	7
9. Contact details .....	7



Scan the QR-code to access our website. Explore our product range, request a quote, read recent news, discover useful resources, and get in touch with our sales team.

SMW.SE  



All technical specifications are typical, for specific part number specifications, please contact us. Specifications are subject to change without prior notice. Products from Swedish Microwave AB are made for commercial use.

Swedish Microwave AB | Dynamovagen 5 | S-591 61 Motala  
Sweden | Contact: +46 141 21 61 35 | sales@smw.se | smw.se

Thank you for choosing products from Swedish Microwave

## 1. Description

Swedish Microwave products are a vital component in land, maritime and earth stations in the ground infrastructure for satellite systems.

Our professional LNB, BDC, LNA and RF over Fiber products are designed for outdoor use to enable reliable communications even under the toughest conditions worldwide.

## 2. Safety warnings



### CAUTION!

Make sure that the antenna system is grounded to earth to avoid potential voltage that can be discharged through the device.

## 3. Installation instructions

### Unpacking

Please compare the contents of your shipment with the packing list supplied.

### Mounting

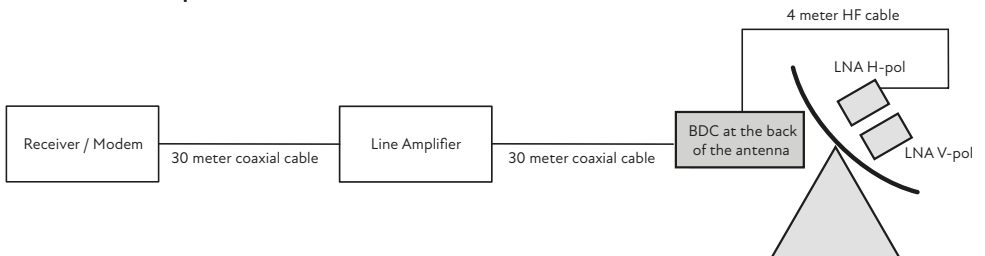
Remove the connector caps before installation. It's recommended to use the holes in the mounting plate to mount the device. Any other means of mounting may void the warranty.



### CAUTION!

Power the device with the recommended DC voltage. Too high voltage can damage the device. Connect everything properly before switching on DC voltage. Please consider the voltage drop in a long coaxial cable as too low voltage can affect the functionality.

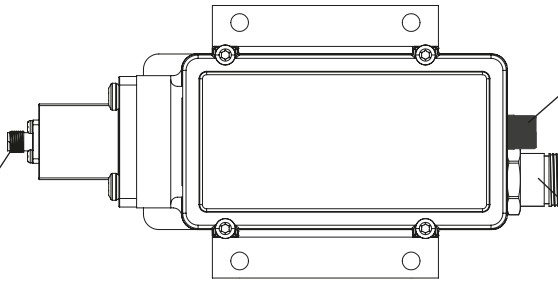
### Installation example





**CAUTION!** Protect against water penetration. The components are designed for operation in temperatures between -40 to +80°C. However waveguide input is not waterproof and **MUST BE** protected from moisture and water. In extreme environments such as close to corrosive sea water or installation in antenna towers where IP67 class protection can be deemed insufficient, it is recommended that appropriate action is taken to ensure reliable operation and longevity.

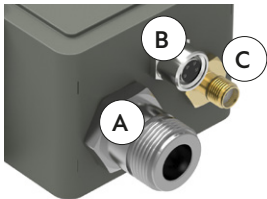
RF input.  
Type of RF connector will be specific to input frequency range. Make sure correct cable connector is used to avoid damaging the connector



Unused connector(s) should remain protected with cover.

Protect the coaxial cable connector with rubber seal tape.

Actual product may differ from illustration



Examples of connectors illustrated

**Connector A**

N (female) 50 Ω IF out, power input, external reference input.  
Types available: F (female) 75 Ω or SMA (female) 50 Ω

**Optional**

**Connector B** M8 for Alarm, Monitoring & Control  
**Connector C** SMA (f) for separate external reference and/or power input.

**Connector for Alarm, Monitoring & Control**



Type: RS485, M8 (f), 4 pin, A-key coded  
Functions: Alarm, Monitoring & Control, power input  
Pin 1 = Alarm open collector (max. 200 mA)  
Pin 2 = A pos+ RS485  
Pin 3 = B neg- RS485  
Pin 4 = Common (GND)  
5 = Shield



<https://modbus.org/>

## 4. Alarm, Monitoring & Control

With remote monitoring and control features, operators can access real-time diagnostics and performance metrics.

### Prerequisites

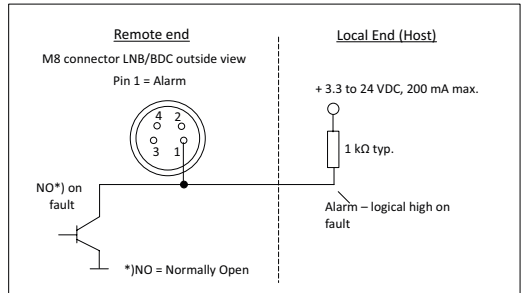
Monitoring & Control function is enabled on select products. The M&C Startkit contains M8 cable (RS-485) and USB Transceiver for connecting host (RTU). Register Map for available (R/W) parameters, please note that the register map is specific to each product model. Download the latest register map from [smw.se](http://smw.se). Modbus software or driver is not included, but for purposes of testing or troubleshooting the freeware Monitoring & Control (M&C) Evaluation Tool is available at request.

### Alarm output

The Alarm output connector pin 1 is an Open collector, Open on fault. 3.3V to 24V max. 200mA. Factory setting is Normally Closed (NC). The alarm output is a sum alarm that trigger:

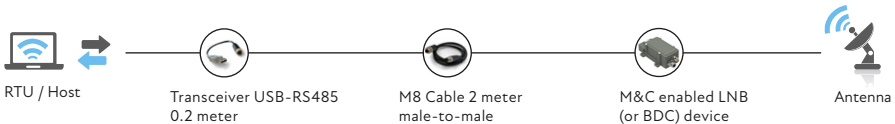
- LO; Locked, External LO reference detected, External LO reference lock
- Total current consumption (>600 mA)
- LNA (built in) failure
- RF power (IF) detector outside limit (outside -57 dBm to -5 dBm)

### Alarm wiring



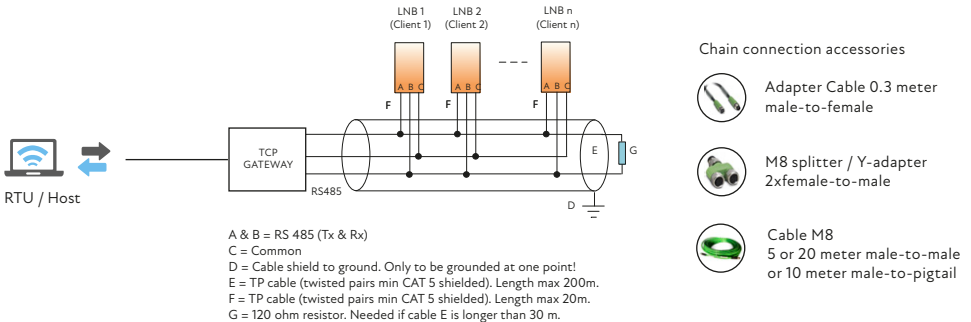
### Direct connection

Schematic showing a direct connection using the M&C Startkit with USB transceiver.



### Chain connection

Schematic showing a chain connection using a gateway to ethernet.



## 5. Troubleshooting

Ensure that the DC voltage of the power input aligns with the specifications provided in the product sheet. If there is a very long cable feeding the device with power, this may cause DC to drop below critical value, and cause the device to be unstable or not work at all.

If the DC voltage is confirmed to be correct, yet issues persist with the received signal, it is advisable to inspect any line amplifiers or other devices installed between the receiver and the device. Performing a bypass of the signal can help isolate whether any external equipment is contributing to the problem.

Furthermore, if the device is mounted on a large antenna, it may become saturated and fail to deliver the expected output level, or the outgoing signal could be distorted. It's crucial to consider the gain of the device, as larger antennas may require a device with a lower gain.

Make sure that if a LNA is installed before the BDC, that the output signal level from the LNA is not too high. If that is the case, attenuate the signal between the LNA and the BDC to avoid saturation in the BDC.

For troubleshooting the Alarm, Monitoring & Control functionality, please refer to our Q&A section on our website at [www.smw.se](http://www.smw.se), or reach out to us at [support@smw.se](mailto:support@smw.se) for additional assistance.

## 6. Maintenance and Repair

The device does not contain any parts that can be serviced by the user. For any inquiries related to maintenance, warranty, or service, please request a Return Material Authorization (RMA) at [www.smw.se](http://www.smw.se) or by sending an email to [support@smw.se](mailto:support@smw.se).

When submitting your request, please include your name, email address, and company details. Also specify the product, part number, or serial number in question and attach a photo of the device. Provide a detailed explanation of the issue and any other information that could be helpful.



### **NOTICE!**

Any device returned without an RMA number will be refused.

## 7. Technical specifications

Technical specifications are typical, specific part number specifications are available. Specifications are subject to change without prior notice.



For further details about each products technical specifications, please scan QR-code link to access website for complete **Documentation, Technical Specifications, Manuals** and **Register Maps**. Find your product at <https://smw.se/findproduct>



## 8. Warranty and Legal

General Terms & Conditions: ORGALIME S 2012 and Appendices.  
Standard Warranty 36 Months. Read more at <https://smw.se/terms/>  
Products from Swedish Microwave AB are made for commercial satcom use only.  
Country of Origin: SWEDEN

All products from Swedish Microwave are CE compliant with the following EU directives as applicable, depending on when placed on the market. Declaration of Conformity is available on request.

- Low Voltage Directive (LVD) 2014/35/EU
- Electromagnetic Compatibility (EMC) Directive 2014/30/EU
- Radio Equipment Directive (RED) Directive 2014/53/EC
- Reduction of Hazardous Substances (RoHS 2) Directive 2011/65/EC
- Regulation (EC) No 1907/2006 (REACH Regulation)

Swedish Microwave is Assessed and Certified for:

- SS-EN ISO 9001:2015 Quality management
- SS-EN ISO 14001:2015 Environmental management
- SS-EN ISO 45001:2018 Occupational health and safety management



## 9. Contact details

Address: Swedish Microwave AB, Dynamovägen 5, 591 61 MOTALA, SWEDEN  
Main Phone: +46 141 21 61 35. Email: [info@smw.se](mailto:info@smw.se).  
Contact the Sales Team: [sales@smw.se](mailto:sales@smw.se).  
Contact information is available on the company website at [www.smw.se](http://www.smw.se).



## Feedback

Your opinion is important to us! Use the contact link at [www.smw.se](http://www.smw.se).





Welcome to contact the  
Sales Team at [sales@smw.se](mailto:sales@smw.se) or  
call us at +46 (0) 141 21 61 35



High throughput products  
for Broadcast, Teleports  
and Satellite Operators



Reliable solutions for  
Earth Observation



Robust and weatherproof  
product range for Mobile  
and Marine Satcom

**SWEDISH**   
**MICROWAVE**

Swedish Microwave AB | Dynamovagen 5 | S-591 61 Motala  
Sweden | Contact: +46 141 21 61 35 | [sales@smw.se](mailto:sales@smw.se) | [smw.se](http://smw.se)