



**Betriebsanleitung** Sensorleitung SCR  
**Operating instructions** Sensor cable SCR  
**Mode d'emploi** Câble de capteur

**Water leakage detection system**

The SCR sensor cable (illustration with connections assembled by the customer) is a component in the BARTEC water leakage detection system. It works in connection with the RDA 01, RDW 03, RLA<sup>net</sup> or RLW monitoring electronics. Other components in the BARTEC water leakage detection system are the PS point sensor, zone divider module, T branch, plug set, socket set, and accessories (see Catalogue).

**Description**

The system detects even small liquid leaks quickly and reliably. Optical and acoustic alarms are emitted from the RDA 01, RDW 03, RLA<sup>net</sup> or RLW monitoring electronics. At the same time, floating contacts are set for signals to the building services management and control tasks. The SCR sensor cable has two NiCr sensor wires with PTFE partially perforated insulation and two fully insulated return conductors along its entire length. The high-quality outer FEP plastic braiding offers ideal mechanical protection. In the event of contact with a conductive fluid (e.g. water) the electric contact resistance between the two sensor wires is reduced. This change is measured, detected and signalled by BARTEC's RDA 01, RDW 03, RLA<sup>net</sup> or RLW monitoring electronics. The defined resistance in the SCR sensor cable of approx. 6 Ω/m in connection with the RLA<sup>net</sup> or RLW monitoring electronics allows a precise location of the leak. The location of the leakage is shown in metres on a large display and it can be transmitted to the building services management through different interfaces.

**Technical data**

**Method of measurement**

conductive (conductive liquids > 2 µS)

**Sensors**

2 x 0.25 mm<sup>2</sup>, stainless steel, protected by partially permeable PTFE insulation

Colour: red, white

Rated resistance: 6 Ω/m

Sensitivity: determined by the RDA 01, RDW 03, RLA<sup>net</sup> or RLW monitoring electronics

**Return conductor**

2 x 0.25 mm<sup>2</sup>, copper with FEP insulation

Colour: red, white

**Cable diameter**

5 mm

**Minimum bending radius**

6 x cable diameter

**Tensile strength**

210 N

**Temperature resistance**

-50 °C to +180 °C

**Fire protection**

V0 according to fire protection standard UL 1581

**Accessories**

**Connection/splicing**

Sheathed cable: LIYY 4 x 0.5 mm<sup>2</sup>

Plug set: M12, 4-pin

Socket set: M12, 4-pin

End plug: M12 (for RLW, RLA<sup>net</sup>, T branch)

End resistor: M12 (for RDA 01, RDW 03)

Zone divider module: T branch

**Assembly material**

Fixing tape: self-adhesive

Identification plate: "sensitive sensor cable"

**Safety instructions**

The device may only be used within the specified ambient and working temperature range. Utilisation in ranges other than those specified or the modification of the product by anyone other than the manufacturer is not permitted and will exempt BARTEC from liability for defects and from any further liability. Incorrect installation may cause malfunctioning. The generally applicable statutory rules and other binding directives relating to workplace safety, accident protection and environmental protection must be observed. The applicable laws and directives must be complied with before commissioning or restarting the device. The device may be operated only if it is in a clean and undamaged condition. Conversions and modifications are not permitted.

**Marking**

Particularly important points in these Instructions are marked with a symbol:



DANGER draws attention to a risk which will lead to death or a serious injury if not avoided.



WARNING draws attention to a risk which can lead to death or serious injury if not avoided.



CAUTION draws attention to a risk which can lead to injuries if not avoided.



ATTENTION draws attention to measures to avoid damage to property.



Important instructions and information on effective, economical and environmentally compatible handling.

**Assembly, Installation and Commissioning**

**⚠ WARNING**

**Risk of injury due to incorrect procedures.**

- Only authorized and qualified personnel may do any of the assembly, disassembly, installation and commissioning work.
- Pay attention to the type of installation (e. g. double floor; piping).
- Use suitable tools.

**Assembly/Disassembly**

All other work, including cleaning, should be finished before the sensor cable is laid,

- to prevent damage being done to the sensor cable by other tradespeople

Points to observe when laying the sensor cable:

- The supporting surface must be dry, free of dirt and to a large extent free of dust.
  - The sensor cable must be attached in the required areas (e.g. double floor) by means of self-adhesive fixing tapes.
  - The sensor cable should be fastened to the floor at intervals not exceeding 1 m.
  - The sensor cable must not be pulled over sharp edges. The sensor cable must not be squashed against metal parts because the evaluation circuitry monitors the cable's electrical resistance.
  - It is not permissible to lay the sensor cable outdoors in rain or in snow or in a wet environment because a wet sensor cable cannot be put into operation.
  - Care must be taken to ensure that the sensor cable does not become wet from dripping condensate from pipes or cooling units.
  - If running through a wall or through other confining structures, a non-detecting connection cable or a protective conduit or tube must be used.
  - Warning signs (Caution: Sensitive sensor cable) should be affixed at points where the sensor cable could become damaged.
  - The sensor cable must lie on the surface to be monitored but it is permissible to run it over obstacles such as e.g. cable trays directly on top of the surface if leakage monitoring can be continued immediately afterwards.
- The installed sensor cable length (in particular where there are partial lengths with T branches) must be added into the installation plan.

More information you can find: [www.bartec.de](http://www.bartec.de)

**Installation** (see Test Report)

Before installing, check the sensor cable's insulation level. During and at the end of assembly the sensor cable must be tested for insulation resistance before the system is put into operation. It is essential to enter the measurement readings into the report.

**i NOTICE**

Warranty claims are subject to the submission of a correctly and completely filled-in test report. Date and signature are also required.

**Commissioning**

The SCR sensor cable is connected to the RDA 01, RDW 03, RLA<sup>net</sup> or RLW monitoring electronics either directly or by means of a connection cable. For the relevant details, please refer to the operating instructions for the respective electronic monitoring unit.

Before putting into operation for the first time, check if:

- the device has been installed correctly
- the device is not damaged
- the connection has been established correctly (check that the wires are secure)

**i Note**

Water leaks are detected quickly depending on the quantity and the conductivity of the leaking fluid. The SCR sensor cable has the shortest reaction time when completely covered (approx. 5 mm) at least at some points. Conductive materials which are not to be detected must be kept away from the sensor by constructional measures (e.g. rain water, splash water, condensate etc.). Commissioning and the tests to determine correct functioning for the intended purpose are recorded in the acceptance report.

**i NOTICE**

All warranty claims are subject to the submission of a correctly and completely filled-in acceptance report. Date and signature are also required.

**Transport and storage**

Damage to the device through incorrect transport or incorrect storage.

- Transport and storage are permitted only in original packaging.

**Maintenance and fault clearance Water leakage detection system**

**i NOTICE**

Loss of function due to incorrect procedures.

- Only authorised and qualified personnel may do any of the maintenance and fault clearance work.
- Directive 2014/35/EU must be complied with.

The owner/managing operator of the device must keep it in good condition, operate it correctly, monitor it and clean it regularly. The SCR sensor cable itself is maintenance-free.

- It must be ensured that the SCR sensor cable is kept clean and free of grease by cleaning it at suitable intervals of time, adjusted to the expected degree of dirt or accumulation of dust. This is assured by cleaning with spirit or with a household detergent which contains a grease solvent.
- Plug-in connections required for installation must be laid with protection against moisture. Where surfaces are monitored, spacers provided by the customer for this purpose must be inserted between the surface and the floor.

As a basic principle, it is not necessary to periodically inspect the monitoring electronics because the electronics is self-monitoring.

**i NOTICE**

BARTEC recommends inspecting the system at least once a year. The countermeasures introduced when a leak is reported must be adapted in terms of prioritisation and the speed of reaction to the damage which is to be averted. The owner/managing operator must obtain clarification about the respective insurance requirements (building insurance, liability insurance,...), such as e.g. testing intervals, scope of testing, and training of the operating personnel.

**Fault clearance**

**⚠ WARNING**

Serious accidents due to the use of non-original spare parts.

- Use original parts only as replacements.

Defective SCR sensor cables can be repaired. Cut out the faulty length and insert the same length of SCR with a plug and socket. Work must be done in conformance to these Operating Instructions.

**Accessories and spare parts**

More accessories and spare parts, you can find in the BARTEC catalogue Heating Technology.

**Terminal assignment**

Plug/socket for **connection cable** and **SCR sensor cable:**

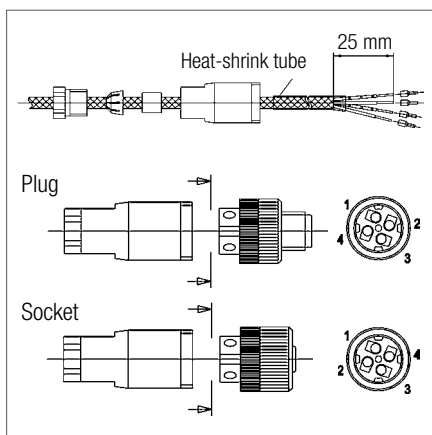
Connection cable Sensor cable	plug/socket terminal	connection splicing
Wire white with perforation	terminal 1	wire 1
Wire white	terminal 2	wire 2
Wire red with perforation	terminal 3	wire 3
Wire red	terminal 4	wire 4

**Disposal**

The components in the BARTEC water leakage detection system contain metal and plastic parts. The statutory requirements for disposing of electronic scrap must be observed therefore (e.g. disposal by an approved disposal company).

**Service address**

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 97980 Bad Mergentheim  
 Germany  
 Phone: +49 7931 597 0  
 www.bartec.de



Customer \_\_\_\_\_

Commission number \_\_\_\_\_

Project \_\_\_\_\_

Building \_\_\_\_\_

Item	Installed cable length in metres	Measured insulation resistance in MΩ between conductors 1 and 3 before installation	Measured insulation resistance in MΩ between conductors 1 and 3 after installation*	Measured insulation resistance in MΩ between conductor 1 to ground		Volume resistance in Ω between conductors 1 and 2 conductors 3 and 4*		Calculated volume resistance in Ω/m**	Date of test/test engineer
				conductor 1	conductor 3	conductor 1 and 2	conductor 3 and 4		
1									
2									
3									
4									

\* (measured with end plug), measurement section: sensor cable with incoming feed line

\*\* (measured resistance of conductors 1 and 3 in Ω/installed cable length = calculated resistance in Ω/m)

Conductor 1 = contact 1 = wire white with perforation

Conductor 2 = contact 2 = wire white insulated

Conductor 3 = contact 3 = wire red with perforation

Conductor 4 = contact 4 = wire red insulated

**Note**

The sensor cable must be checked during assembly also. When checking, disconnect the sensor cable from the monitoring electronics.

**Test tolerance for the measurements**

Volume resistance in Ω: min: 5.7 Ω/m, max: 6.3 Ω/m

Insulation resistance in MΩ: not less than 10 MΩ per entire measuring circuit (at a test voltage of 500 V)

\_\_\_\_\_  
Stamp/signature of installation company

All warranty claims are subject to the submission of a correctly and completely filled-in acceptance report. Date and signature are also required.

Your partner  
for safety  
technology.  
Challenge us!

