

## Splitter Type MRSP01

### Order information

Name	Type	Part No.
Splitter	MRSP 01	133 822 11 AX



- **Splitting of Leaky-Feeder Cables and Radio Signals**
- **Low coupling/splitting loss**
- **Distribution of Remote Power Voltage**
- **Low Weight**
- **Rugged Construction**
- **Explosion protection category / mode: I M1 EEx ia I**

### Usage

The splitter type MRSP01 is part of the intrinsically safe underground radio system MR90 and is used in hazardous firedamp areas, realized in safety class EEx ia I. The splitter is placed in the cable run of the leaky-feeder RF coaxial cable. It is used to split the leaky-feeder trunk-line at branches and crossings or the like. It splits up the signals transmitted on the leaky-feeder cable in even parts and nearly loss-less to the connected branches. By means of this splitter the supply energy for a remote powering of further line amplifiers can optional be coupled from or to the different branches.

### Operation

The electronics of the splitter type MRSP01 is built into a boxed plastic housing with a lid. All electronic parts, indicator elements and connector parts are placed on a printed circuit board mounted in the housing. Three RF screw terminals are used to connect the branches of the leaky-feeder cable. There is one terminal available for the connection of the leaky-feeder cable leading to the base station and two terminals for the branches leading to the leaky-feeder

cable ends. The leaky-feeder cable leading to the base station is connected to the terminal X5 (1, 2), the branches leading to the leaky-feeder cable ends are connected to the terminals X4 (1, 2) and X6 (1, 2).

Mainly the electronics consists of a hybrid power splitter, which divides the RF signals of the trunk line nearly loss-less to even parts into both branch lines. The hybrid power splitter leads the RF signals coming from one leaky-feeder end into the direction of the base station with an attenuation of approx. 4 dB. The other leaky-feeder end is strongly decoupled from this signal. The hybrid power splitter splits signals coming from the base station into two even halves leading to the leaky-feeder ends. Here too the attenuation is approx. 4 dB. The leaky-feeder sections are DC isolated/blocked from each other by internal capacitors. The LEDs H1 to H3 indicate the availability of a DC remote power supply on the respective leaky-feeder terminal. By appropriate wiring of the terminals X1 (1, 2), X2 (1, 2) and X3 (1, 2) the DC remote power supply available on one leaky-feeder branch can be distributed to one or both of the other leaky-feeder branches.

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For measurement purposes a 50 Ω terminator can be assigned to each of the leaky-feeder terminals or the hybrid coupler output with a jumper. For normal operation the jumpers are set for signal passing, so that the terminators are not activated.

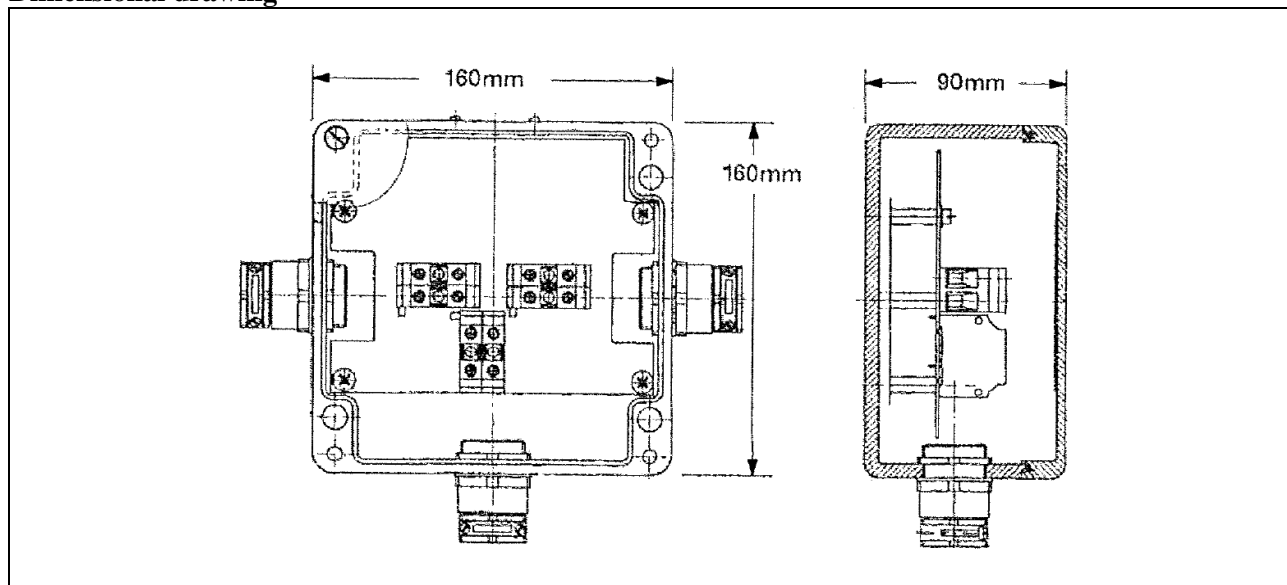
### Construction

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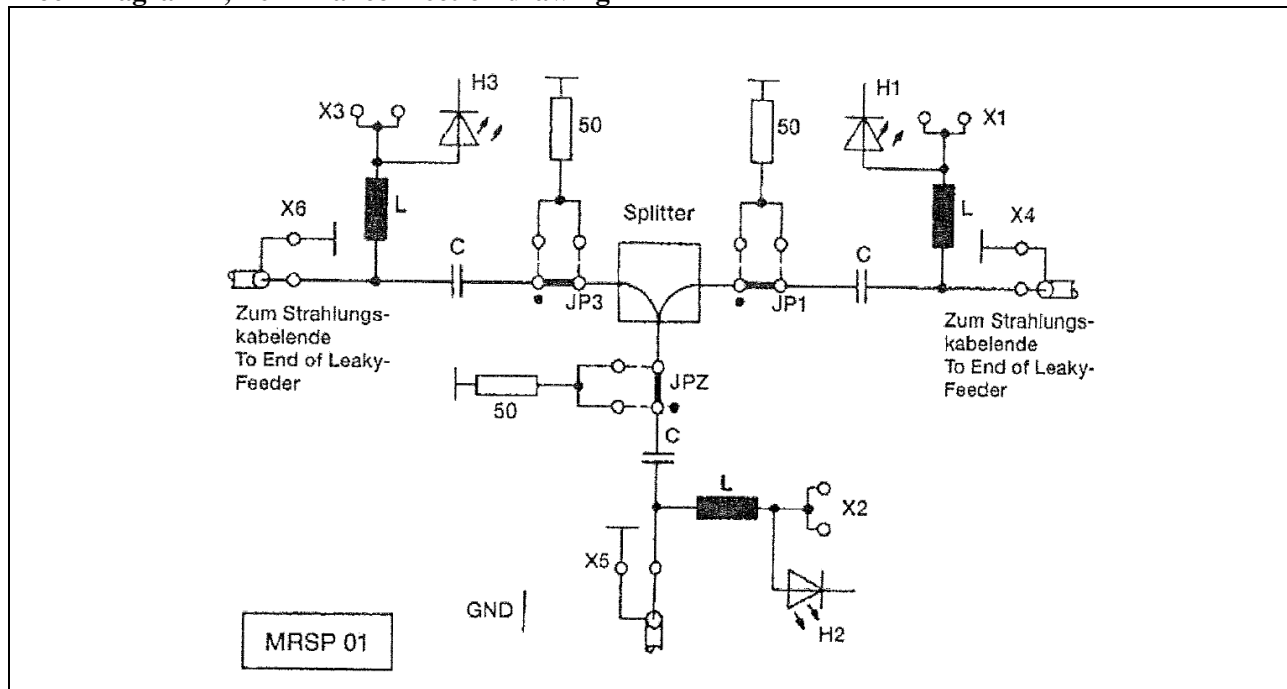
housing. The material for the lid and the case is fibre-glass-reinforced conductive polyester. The housing lid is fastened to the base with four captive screws. Lid and base are sealed by an elastic rubber seal inserted into the lid. The housing complies with a housing protection of IP 54 according to EN 60529. The type label is fixed to the housings base.

All electronic components, indicator elements and connective parts are placed on a printed circuit board and fixed to the bottom of the base with four studs. For the insertion of the leaky feeder cables, cable glands on three sides of the housing base are provided. On delivery the cable glands are sealed with dust protectors.

### Dimensional drawing



### Block Diagramm, Terminal connection drawing



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