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# Cavotec RRC - B-protocol safety

We hereby declare that all Cavotec RRC (Radio Remote Control) systems delivered with B-protocol cannot be controlled unintentionally by other radio signals than those coming from the intended source.

B-protocol is the protocol Cavotec uses in its radio communication. This protocol is designed according to IEC 61784-3 and is verified by our IEC 61508 SIL3 certificate SC0250-12 issued by SP Technical Research Institute of Sweden.

B-protocol is designed with unique ID for each delivered system as the main safety feature, but other mechanisms also contribute to the safety of the radio link. In order for two units to communicate the following must be correct:

- Identical radio frequency and modulation technique
- Correct baud rate
- Correct preamble and byte format
- Correct Terminal ID (unique to each delivered system)
- Message length and layout
- Correct checksum algorithm (CRC better than class FT3 with hamming distance of 6)
- Scrambling algorithm (4B5B)

Based on these measures, the probability that the system may interpret noise or random radio signal as a valid message is calculated to **$10^{-34}$ per year**. According to IEC 61508 the requirement for SIL 4 is $10^{-4}$ per year.

Hell — (Place)

12/9 - 18 — (Date)

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