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# Robust radio controller for use in concrete plants

The control of processes by radio control not only pays dividends in the highly automated production of prefabricated elements, but also in case of long distance or when vibration parameters need to be varied during production, independent of where the worker is. Therefore, Brecon (and previously Bosch) has allowed the control of vibration for concrete compaction via radio control for more than 25 years now. Based on this long term experience, Brecon has developed the next generation of radio controls that take into account the harsh conditions in concrete plants.



Figure 1: A new series of radio transmitters specifically for use in concrete plants leads to location-independent control

A radio control basically consists of a receiver and a transmitter. The demands on a radio control arise from

- functionality,
- security,
- handling.

Experience with concrete compaction in particular shows that at least 3 radio channels are used:

1. Increase compaction energy (higher frequency)
2. Reduce compaction energy (lower frequency)
3. Vibration on/off

The biggest advantage of radio control is already achieved with these basic functions, since the worker can observe the surface of the concrete directly and change the vibration energy at the push of a button, based on his experience with the compaction



Figure 2: The new Brecon series of radio controls with 3, 6 and 8 channels

process. The energy is selectively increased until an optimal distribution of concrete is reached. However, it can immediately be reduced slightly if the vibration absorbs too much energy, resulting in the spraying of concrete. Instead of compaction, the spraying of the laitance can lead to the opposite effect occurring and air being drawn into the concrete, especially in the area of edge formwork. With a radio control the construction worker can immediately respond to these adverse conditions.

In addition to the 3-channel radio control, mainly 6-channel and 8-channel radio controls are used.

The additional channels can be used to switch between formworks or between vibrator groups depending on the configuration or filling of the formwork.

The new series of radio controls developed by Brecon is defined as high-security radio with ranges up to 100 metres and IP65 protection. The optimised radio technology provides a dual coding to eliminate false signals. This offers the possibility to control other processes with the Brecon radio control, e.g. the concrete distribution or the transverse movement of pallets in circulation plants.

The new hand-held transmitters (see fig. 2) have been optimised with regard to drop protection and have been enclosed in strong elastic armouring. Nevertheless, they are ergonomically formed and easy to use even with working gloves on. The keys have a raised design and the keystroke is clearly responsive. Both transmitters and receivers are suitable for ambient temperatures of -20 °C to +55 °C.

A flat belt clip has been integrated on the back of the hand-held transmitter (see Figure 3), so that the transmitter can be safely carried on clothing. At just 125 grams the hand-held transmitter can also be carried easily in clothing pockets. It can be integrated in most control systems worldwide, as the new Brecon radio control is availa-

ble for operating voltages of 115V or 230 VAC and DC voltages from 12V to 24V and 48V.

## Conclusion

Brecon's new series of extremely robust radio controllers for concrete plant operations allows the spontaneous and precise adjustment of the compaction parameters during concreting. The concrete construction worker is free to move about and thus able to specifically apply his knowledge and experience required for optimum compaction for each individual precast product. The operation is more intuitive and allows a continuous improvement process.



Figure 3: Ergonomic, robust and highest safety standards.

## FURTHER INFORMATION



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