

Anti Knocking Regulator, AKR 3

Improve efficiency & eliminate knocking damage of your gas engine



DEIF's Anti-Knocking Regulator (AKR 3) is a state-of-the-art unit design protecting gas engines in real-time.

Engine knocking reduces engine efficiency, and, if allowed to continue without corrective action, it will lead to engine damage and possibly engine failure.

The AKR 3 uses microprocessor technology to analyse engine vibrations during the critical firing window of up to 24 individual cylinders.

Using digital signal processing and Fast Fourier Transformation (FFT), the AKR 3 is able to discriminate between general engine 'noise' and engine knocking more effectively.

When the AKR 3 is used in conjunction with the DEIF DM 400 Gas system and an ignition system where all three devices communicate via CAN bus, it is possible to control and adjust the ignition firing angle for each individual cylinder in realtime.

If knocking is sensed during the combustion cycle of a cylinder, the DEIF DM 400/AKR 3 solution can adjust the ignition firing angle to eliminate knocking by the next time that cylinder enters its ignition cycle.

By adjusting the ignition in real-time, the DEIF solution protects the engine from damage caused by knocking while enabling the engine to operate at full power for longer, thereby increasing efficiency.

AKR 3 features

- ▶ Digital signal processing using FFT
- ▶ Individual cylinder monitoring for up to 24 cylinders
- ▶ CAN bus J1939 communication to engine controller
- ▶ Real-time engine protection
- ▶ Misfire detection
- ▶ Robust design and construction for mounting within the engine compartment or directly on the engine
- ▶ Digital alarm outputs
- ▶ 4-20mA output signal representing to overall knocking level

