Fire pumps / sprinklers Application support for DG1









Configure fire pumps individually

Fire Pumps and sprinklers have special requirements. Principally nobody wants to use them, but if they are needed, a use even beyond the device-limits must be ensured.

Main requirements are robustness and the safety not to react on any fault with a stop. The drive must run as long as possible to save life.

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Robust	Fast	Simple	Service & support
 Best-in-Class ambient temperature range from -30 °C up to +60 °C IP54 designs provide increased environmental protections Conformal coated boards protect against aggressive ambient 	 Best-in-class on-board inputs and outputs reduce PLC I/O requirements and option cards 18 basic parameters, Quick Start Wizard and PC Tools for simpler commissioning 	 Full text LCD keypad featuring copy/ paste functionality and soft keys for faster navigation Pre-configured applications to simplify complex parameter sets, from standard to multi-pump configurations Extensive on-board communications reduces cost and improves control capabilities 	 Standard two-year warranty with extensions available through certified commissioning Dedicated team of application engineers and technical resources available to provide pre-sales and after-sales support Aftermarket program providing spare parts, service and training classes

Application control

- Fire Mode DG1 variable frequency drives can be used to run fire pumps and smoke ventilation systems in building infrastructure and tunnel applications. When this mode is enabled, faults will not result in a shutdown. In addition, a fixed operating direction can be set. Finally, the DG1 will run as long as necessary, even beyond its load limits.
- Fire Mode Test In order to ensure that systems can be tested under safe conditions, DG1 variable frequency drives feature a "fire mode test" mode in which the control section will respond the same way as in an emergency, but while all protective functions continue to work.
- **Track changes** The internal log helps during servicing to detect the root cause of a fault, minimizing down-time and diagnosis of accidental done changes.

Application protection

- Skip frequencies Reduce vibration and noise of the impellers by preventing operation in resonance causing speeds.
- Flying start Smoothly start spinning fire pumps / sprinklers in either direction to reduce stress on the impellers.

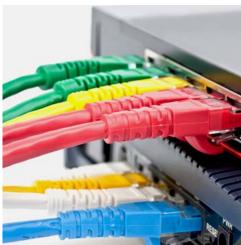
Management and communication

- **Password protection** Lock access to parameter editing to prevent undesired user interaction in the field. For safety related applications like this mandatory.
- Extension slots Beside substantial On-Board I/O, various extension boards are available (2 slots) to directly connect all signals and sensors to DG1 for fire pumps / sprinklers control, monitoring and status control.
- **Communication** Best-in-class on-board communications includes Modbus RTU, Modbus TCP, Ethernet/IP, BACnet MS/TP with additional option boards for Profibus, CANopen, DeviceNet and SmareWire-DT to integrate into any desired network within a facility.







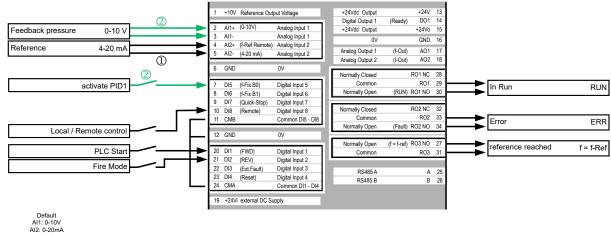


Wiring diagram sprinkler pump

Following a sample wiring diagram is shown for a sprinkler pump. Fire mode kann be configured as NC or NO. Labels of the inputs/outputs are shown for default, eventually the need to be adapted to the desired function. Variants shown:

① Speed control / external control

② pressure feedback via a pressure sensor





Further application notes

Common hints			
Electromagnetic compatibility (EMC)	AP040043EN		
Dual Rating – What exactly does that mean?	AP040114EN		
Connecting drives to generator supplies	AP040169EN		
DG1 specific hints			
Application manual DG1	MN040004EN		
Communication Manual DG1	MN040010EN		
Installation Manual DG1 FR 0-6	MN040002EN		
Operating at low temperatures	AP040058EN		
DG1 in Pump- and Fan applications	AP040128EN		
Real Time Clock and use of the timers	AP040172EN		
Analog I/Os	AP040129EN		
Digital I/Os	AP040132EN		
Load balancing in multi motor applications	AP040168EN		
Motordata and V/f curves	AP040177EN		
PID Controller	AP040164EN		
Smoke Mode and Fire Mode	AP040065EN		
Starting, Stopping and Operation	AP040176EN		
Smoke Mode and Fire Mode	AP040065EN		

Following link will show you the Application notes for DG1: Eaton.com/ap/overview/drives DG1-Manuals you can find at: Eaton.com/dg1



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