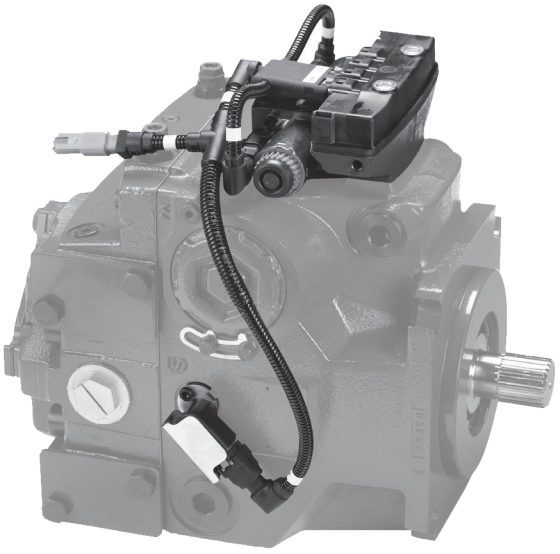
ENGINEERING TOMORROW

Data Sheet

Integrated Automotive Control (AC)
MP1 and H1P Single Pumps

The Automotive Control (AC) is an electric NFPE Control with an integrated Microcontroller, installed on the pump. The integrated Microcontroller enhanced control performance with a flexible, configurable control scheme for an entire single path propel transmission. It can be used in combination with fixed and variable displacement hydraulic-motors. With the pre-installed application software and easily changeable control parameters, it is possible to tailor the vehicle's driving behavior to the individual requirements of the customer.



Target Applications

- Wheelloader, telehandler and dumper with a load dependent (torque controlled) driving behavior.
- Sweeper, snow blower and forestry machines with a load independent (speed controlled) driving behavior.

Features

Basic functions

- Four selectable system modes, selectable via switches
- Independent pump/motor profiling & ramping for each mode
- Electric drive pedal
- Electronic inching
- Electric creep mode potentiometer
- Proportional pump displacement control (automotive)
- Load independent pump displacement control with integrated swash plate angle sensor (option)
- Hydraulicmotor displacement control including brake pressure defeat function

Protection and safety functions

- Safety controlled vehicle start protection
- Operator presence detection
- Hydraulic system overheat and lowtemperature protection
- Hydraulic motor overspeed protection
- SIL2 certification*

Performance functions

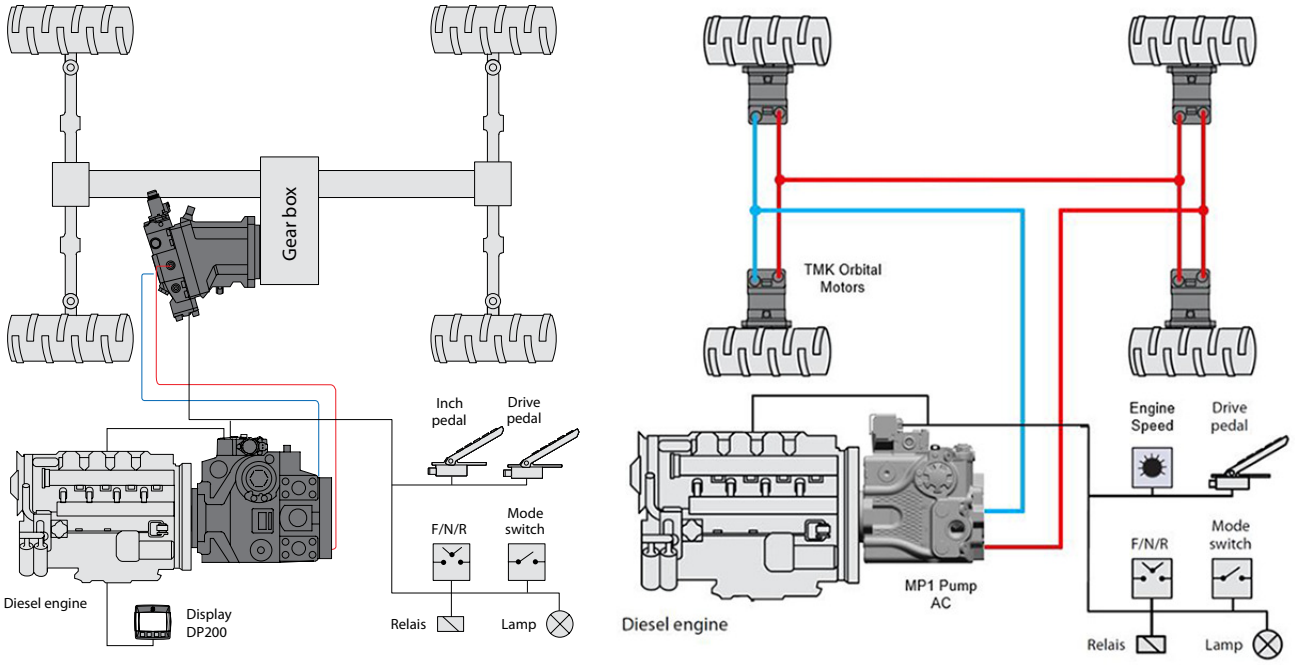
- ECO fuel saving mode*
- Cruise Control in Work Mode*
- Vehicle constant speed drive control
- Vehicle speed limitation
- Dynamic brake light, automatic park brake, reverse buzzer and vehicle speed controlled output functions
- Temperature compensation for predictable performance
- Advanced CAN J1939 interface*

Engine control and protection

- CAN J1939 engine interface
- Engine speed control via drive pedal with safety controlled monitoring function
- Engine antistall protection
- Engine over speed protection
- Engine speed dependent Retarder control*
- Engine cold start protection

* Functions depending on the installed Application Software package

Common AC systems



Specifications

Rated supply voltage 12V System	9-16V
Rated supply voltage 24V System	18-36V
Digital and PWM Outputs	3000 mA
Sensor-Supply-Voltage-Range (internal)	5V /1A
Operating Temperature (oil)	-40 to 104°C
IP rating with attached connectors	IP69k
EMC-Immunity	100V/m
Vibration and Shock tested	IEC60068

Input configuration

Input	Function
6 x digital	FNR (direction selection), Seat switch, System Mode selection
7 x analog	Inch pedal, drive pedal, creep potentiometer, hydraulic-motor direction, engine speed setpoint, pressure sensors
2 x frequency	Pump/engine, hydro-motor rpm

Output configuration

Outputs	Function
3 x PWM	Pump and hydro-motor displacement/direction
5 x digital	Hydraulic-Motor brake pressure defeat, dynamic brake light, park brake, reverse buzzer, retarder control, vehicle speed dependent output, status LED

Comprehensive technical literature is online at *www.danfoss.com*