

SmartDrive® ACH580 Packaged Drives with Disconnect

The SmartDrive® ACH580 drive sets new standards in both simplicity and reliability, and ensures smooth, energy-efficient operation of your HVAC systems in normal and mission-critical situations.

The SmartDrive® ACH580 Packaged Drive is an ACH580 Variable Frequency Drive enclosed with either an input disconnect switch and fast acting fuses (ACH580-PDR) or an input circuit breaker (ACH580-PCR). The SmartDrive® ACH580 Packaged Drive provides a door-mounted input disconnect operator (padlockable in the OFF position), electronic motor overload protection, a door mounted control panel with graphical display for local control, provisions for external control connections, and serial communications capability.

UL (NEMA) Type 1 and 12 Packaged Drive units are available from 1 to 60 HP at 208/230V, 1 to 350 HP at 460V, and 2 to 150 HP at 575V. UL (NEMA) Type 1 and 12 units are wall mounted from 1 to 200 HP and floor mounted from 250 to 350 HP.



SmartDrive ACH580 with Disconnect Features

Features for HVAC

The SmartDrive® ACH580 comes standard with an intuitive control panel used to configure, control, and monitor the drive. An optional Bluetooth control panel allows the drive to be configured via the control panel or the DriveTune app.

A robust HVAC firmware package provides drive, motor, and application protection features. Examples of drive protection features include undervoltage, overvoltage, overcurrent, and ground fault protection. The SmartDrive® ACH580 also has a variety of motor protection features including overload and stall protections.

Application specific features, such as accepting four separate start interlocks (safeties), along with broken belt detection, are also included. The drive includes BACnet MS/TP, Modbus RTU, and Johnson N2 as standard. Additional protocols, such as BACnet/IP and LonWorks (coming 2019), are available with optional fieldbus adapters.



Communication

Protocols as standard (EIA-485): BACnet MS/TP, Modbus RTU, Johnson Controls N2

Available as plug-in options: BACnet/IP, Modbus TCP, EtherNet/IP, LonWorks

Application Functions

Start interlock	Motor preheating
Delayed start	Energy optimizer and calculators
Run permissive (damper monitoring)	Timer
Override operation mode	2 or 3 wire start/stop
Real-time clock (scheduling)	Ramp to stop
PID controllers for motor and process	2 independent adjustable accel/decel ramp
Motor flying start	

Protection Functions

Overvoltage controller	Overload supervision
Undervoltage controller	Stall protection
Motor earth-leakage monitoring	Loss of reference
Motor short-circuit protection	Panel loss
Motor overtemperature protection	Ground fault
Output and input switch supervision	External events
Motor overload protection (UL508C)	Overcurrent
Phase-loss detection (both motor and supply)	Current limit regulator
Under load supervision (belt loss detection)	Transient/Surge protection (MOV and choke)

Panel Functions

First start assistant	Set-Up and Operating Data Display:
Primary settings for HVAC applications	-- Output Frequency (Hz)
Hand-Off-Auto operation mode	-- Speed (RPM)
HVAC quick set-up	-- Motor Current
Includes Day, Date and Time	-- Calculated % Motor Torque
Operator Panel Parameter Backup (read/write)	-- Calculated Motor Power (kW)
Full Graphic and Multilingual Display for Operator Control, Parameter	-- DC Bus Voltage
	-- Output Voltage
	-- Heatsink Temperature
	-- Elapsed Time Meter (resettable)
	-- kWh (resettable)
	-- Input / Output Terminal Monitor
	-- PID Actual Value (Feedback) & Error Fault Text
	-- Warning Text
	-- Three (3) Scalable Process Variable Displays
	-- User-Definable Engineering Units

Motor Control Features

Scalar (V/Hz) and vector modes of motor control	Energy optimization
V/Hz shapes	IR compensation
-- Linear	Slip compensation
-- Squared	Three (3) Critical Frequency Lockout Bands

PID Control

One (1) Process PID	External Selection between Two (2) Sets of Process
Four (4) Integral Independent Programmable PID	PID Controller Parameters
Setpoint Controllers (Process and External)	PID Sleep/Wake-Up



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