SmartDrive® ACH580 E-Clipse Bypass Drive

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 with ABB E-Clipse Bypass is an ACH580 HVAC Drive in an integrated UL (NEMA) Type 1 or 12 with a bypass motor starter. The SmartDrive® ACH580 with ABB E-Clipse Bypass provides an input disconnect switch or circuit breaker with door mounted and interlocked operator (padlockable in the OFF position), a bypass starter, electronic motor overload protection, a door mounted control panel with graphical display for local control, provisions for external control connections, and serial communications capability. Configurations options include a drive service switch and/or AC line reactor.

UL (NEMA) Type 1 and 12 E-Clipse units are available from 1 to 60 HP at 208/230V, 1 to 125 HP at 460V, and 2 to 125 HP at 575V. UL (NEMA) Type 1 and 12 units are wall mounted from 1 to 125 HP.

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Supersedes: NEW

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SmartDrive ACH580 E-Clipse Bypass Features

Features for HVAC

The SmartDrive® ACH580 with ABB E-Clipse bypass includes two contactors. One contactor is the bypass contactor, used to connect the motor directly to the incoming power line in the event that the SmartDrive® ACH580 is out of service. The other contactor is the SmartDrive® ACH580 output contactor that disconnects the SmartDrive® ACH580 from the motor when the motor is operating in the Bypass mode. The drive output contactor and the bypass contactor are electrically interlocked to prevent "back feeding".

The SmartDrive® ACH580 with ABB E-Clipse bypass is a microprocessor-controlled "intelligent" system which features programmable Class 10, 20, or 30 overload curves, programmable underload (broken belt) and overload trip or indication. Also included as standard features are single-phase protection in bypass mode, programmable manual or automatic transfer to bypass, fireman's override, smoke control, damper control, no contactor chatter on brown-out power conditions and serial communications. Should a drive problem occur, fast acting fuses exclusive to the SmartDrive® ACH580 drive path disconnect the drive from the line prior to clearing upstream branch circuit protection, maintaining bypass capability.

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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