ST. TAMMANY PARISH

MICHAEL B. COOPER
PARISH PRESIDENT

March 27, 2026

Please find the following addendum to the below-mentioned BID.

Addendum No.: 2

Bid#: 26-13-2

Project Name: Justice Center Boilers

Bid Due Date: Wednesday, April 8, 2026

GENERAL INFORMATION:

PRIOR APPROVALS: *(The following manufacturers are approved for bidding provided that the product and its application meets or exceeds the requirements of the drawings and specifications. Approval does not waive any requirements of the plans and specifications. Shop drawings will be required for final review and approval of specific items under consideration.*

Product / Equipment Specification	Product / Equipment Manufacturer
Variable Frequency Drives (See attachment)	ABB ACH580 Series

QUESTIONS & ANSWERS:

Question 1. Who is the fire alarm company for the building?

Answer 1. The current fire alarm company is Fire Protection Service Corporation and Pye-Barker Fire & Safety.

Question 2. On the drawing M2.00 shows "ALT 3 rework existing piping as required to accommodate new connections. Pour concrete pad to accommodate new boiler configuration." But in the pre-bid meeting papers, ALT 3 includes the replacement of the two hot water pumps, nothing about a slab; and ALT 2 includes turning the boilers. Please clarify.

Answer 2. On sheet M2.00, floorplan 2/M2.00 incorrectly identifies the work to replace and rotate boilers HWB-1 and HWB-2 as Alternate #3. This work shall be a part of Alternate #2. Only work related to the replacement of the hot water heating pumps is included in Alternate #3. Concrete slab work referenced in the drawings is related

to the reconfiguration of the boilers in Alternate #2. No additional slab work is required in Alternate #3 for the Pump replacement.

CLARIFICATIONS:

1. (Sheet M2.0) The HVAC General notes 1-15 and boiler notes 1-10 apply to all work this sheet, Base Bid and all Alternates unless specifically noted otherwise.
2. (Sheet M2.0) Boiler Schedule Note #1. Emergency gas shut off valves/buttons per this note are required for Base Bid, Alternate 1 and Alternate 2. If only the Base is accepted, only the boiler being replaced will include new shut off valves/button. If Alternate 1 or Alternate 2 are accepted, both boilers shall be furnished with gas shut off valves/buttons. Boilers shall not require a secondary stop valve if the boiler is furnished with one that can interlock with the emergency stop button.
3. (Sheet M2.0) Base bid shall require the replacement of manual isolation valves with new for both boilers. This shall accommodate future boiler replacement of the second boiler if the Alternates are not accepted.
4. (Sheet M2.0) Existing pneumatic control valves shall be replaced with new electronic valves. Control valves replacement shall be done in conjunction with boiler replacement, if only Base is accepted replace HWB-2 valves, if Alternate 1 or Alternate 2 is accepted, replace both boiler control valves.
5. New Boilers shall be furnished with BACnet communication cards commissioned for future tie in by owner.
6. Equipment/Control service contract is under JCI. The controls, however, are Schneider Electric, contact Automated Controls (Paul Reuter 504-915-7550) for questions regarding programming and interlocks.

ATTACHMENTS:

1. **Pre-Bid Conference Summary**
2. **Pre-Bid Conference Sign-in Sheet**
3. **Variable Frequency Drive submittal for Prior Approval**

End of Addendum # 2

PRE - BID CONFERENCE SUMMARY

March 16, 2026
10:00 A.M.

Justice Center Boilers

701 Columbia St., Covington, LA 70433 Bid #26-13-2

MEETING FORMAT

- Introduction / Major Participants

- Description of Project:

  A. Includes the furnishings of all labor & equipment and materials necessary for the **Justice Center Boilers**

  B. The work includes the following:
  - The removal of (2) existing hot water heating boilers with (1) new boiler to be replaced in a configuration similar to existing. Piping for the 2nd boiler shall be stubbed out and capped for future replacement. A rental boiler shall be included to maintain building heating during the project. A new opening and roll door in the boiler room wall to be installed to accommodate boiler removal and installation as well as future service. The door to the loading dock area will be replaced with a pair of 3'-0" x 8'-0" Hollow Metal doors and Hardware to accommodate boiler replacement.

  C. The work includes three (3) alternates:

  - Add Alternate No. 1: includes the replacement of a second hot water heating boiler not replaced under the Base Bid. Rental boiler requirements shall apply to this Alternate similar to Base Bid, if required.

  - Add Alternate No. 2: Includes the replacement of the (2) existing hot water heating boilers with a new configuration turned 90 degrees to the original to accommodate future service and replacement. Renter boiler requirements shall apply to this Alternate similar to the Base Bid, if required.

  - Add Alternate No. 3: Includes the replacement of the (2) existing heating hot water pumps, with new pumps including new isolation valves and all piping modifications required for the replacement.

  Refer to section 012300 Alternates and the drawings and specifications for details on these alternates.

- Budget: Budget is approximately between **$300,000.00 - $600,00.00** depending on the acceptance of the alternates.

- Confirmation of Bid Date and Procedures

  Bids are due **Wednesday, April 8, 2026 at 2:00 p.m.**

  Bids will be received at the Department of Procurement, located at 21454 Koop Dr., Suite 2-F, Mandeville, LA 70471

  Bidders have the option to submit bids electronically to
  Bid Express. www.bidexpress.com. Review online bidding instructions.

- Front End Documents

  Bid Form
  The Public Bid form should be filled out in ink, or type written, with an original signature. You are required to submit one original. The Contractor must include his Louisiana License number, The Project Name and Owner's Project Number, on the sealed Bid Envelope and all BID FORMS etc., enclosed. **Include a Corporate Resolution authorizing the actual signee on the Bid Form**. Refer to Instructions to Bidders for requirements.

  Bid Bond
  The Bid Bond must be a minimum of **5%** of the Bid Amount for the **Total Project Package**.

- Clarifications and Questions: ALL QUESTIONS MUST BE SUBMITTED IN WRITING TO ST. TAMMANY DEPARTMENT OF PROCUREMENT, procurement@stpgov.org, QUESTIONS WILL BE ANSWERED BY ADDENDUM ONLY. Questions shall be submitted 14 working days prior to the date for receipt of bids. The last day for questions is **March 27, 2026, at 2:00 p.m.**

- Prior Approvals
  No substitutions will be considered unless a written Prior Approval Request is submitted in writing via email or mail 14 working days prior to bid. The last day for requests for substitutions is **March 27, 2026, at 2:00 p.m.**

- Issuance of Addenda
  All questions submitted will be answered by Addendums. Final addendum will be issued on or before April 2, 2026.

- Contract Time – 150 Consecutive calendar days from NOTICE TO PROCEED (anticipated weather days included are listed in the supplemental conditions).

- Liquidated Damages - **$1000.00** per day thereafter.

- Construction Schedule: Schedule organized by GC as required by Contract Documents.

- Bldg. Permits & Taxes–This IS a tax exempt project. Forms shall be given to the successful contractor post-bid to be filled out and submitted to St. Tammany for approval. Building permits will be submitted to the State Fire Marshal and local permitting authority. Contractor will be responsible for payment of building permits and any inspection fees.

- Pay Application to be submitted on the AIA-G702 Document. Billing will be monthly and paid every 45-60 days.

- Special Site and Site Utility Conditions / Access to Building Areas

  Contractor will need to be mindful that the project site is an existing building that will be occupied during construction. Contractor shall schedule the work to accommodate the public and Owner's employees. Contractor shall be mindful of surrounding traffic when staging and working at the job site. Owner will occupy the building during construction. The contractor may be required to make modifications to his procedures to accommodate the owner

  Temporary shut-downs of power, water or other utilities need to be carefully coordinated with the owner and require advance notice.

  Sequence of Construction will require careful planning and coordination to maintain site access to the buildings and prevent street/driveway closures.

- Contractor Records
  Document Existing Conditions, Project Books, As-Builts, and photographs and video are required.

- Project Safety
  Contractor is totally and solely responsible for project safety, means and methods, protection of workers, all property, and the public at all time.

  Full-time project superintendent is required.

  Employees will be required to wear shirt / uniform with company name to identify them.

  Areas of work should be kept separated from areas occupied (dust control measures should be employed.) Required exits should be kept open at all time.

  Traffic control is the responsibility of the General Contractor.

- Review the Plans and Specifications
  Contractor is advised to review General conditions and Special Conditions for all details and requirements concerning insurance and bonds.

  The Construction Drawings and Specifications are intended to function as a whole. DO NOT SPLIT THE CONSTRUTION DOCUMENTS INTO PARTS.

  Plans can be obtained from the St. Tammany Department of Procurement – please email procurement@stpgov.org.

Visit to the site:

-Potential contractors visited the site to view the existing boilers.

\\192.168.0.103\Architect\File Cabinet\22507 STP Justice Ctr Boiler Repl\D4 Bid Est-Sched\D4.4 Pre-Bid Min - Questions - Corres\D4.3.1 Pre-Bid Conf\22507 Pre-Bid Conf Summary.doc

SIGN-IN SHEET

Project: **Justice Center Boilers for St. Tammany Parish**
701 Columbia St., Covington, LA 70433
Mtg. Location: 701 Columbia St., Covington, LA 70433
RCLA Project #22507 Owner Bid # 26-13-2
Non-mandatory Pre-Bid Conference - March 16, 2026 – 10:00 a.m.

Please Print CLEARLY

Name	Company	Prime	Sub	Other	G.C. License #	Phone Number	E-mail Address
Paul Dimitrios	RCL Architecture, L.L.C.			X		985-727-4440	pdimitrios@rclconsultants.com
Jessica Ragan	PCI	X			32570	9853451298	sharkey798@aol.com
Ray Sharkey	PCI	X			32570	985-320-4451	sharkey798@aol.com
Harrell Sharky	Sharky Mech LLC	X			68229	985-517-2519	Harrell@Sharkeyms.net
Brian James	Cootee	X			8	985-201-4187	bjames@cootee.com
Will Berkowitz	Loomis Air	X			66122	985-707-9989	will.berkowitz@loomisair.com
Dalton Morrison	C-CO Mech, llc	X				225-614-4587	c-comech@bellsouth.net
Paul Reuter	Automated Control Systems		X			504-885-3694	Preuter@acscompanies.com
Hale Gonzales	Metro Mechanical	X			32212	985-630 3161	Hale @ metromechanical.

Pg. 1

SIGN-IN SHEET

Project: **Justice Center Boilers for St. Tammany Parish**
701 Columbia St., Covington, LA 70433
Mtg. Location: 701 Columbia St., Covington, LA 70433
RCLA Project #22507 Owner Bid # 26-13-2
Non-mandatory Pre-Bid Conference - March 16, 2026 – 10:00 a.m.

Please Print CLEARLY

Name	Company	Prime	Sub	Other	G.C. License #	Phone Number	E-mail Address
Eric Penton	CCS	X				769-456-2082	Nathan@CCSservices.us
Scott Oestriecher	ARC Mechanical	X				985-661-9191	estimating@arcmechanical.net
Kerry Eichelberger	McCain	X				225-264-1802	Kerry@mccainengineering.com
Michael Fernandez	Gallo mechanical	X				504-908-2328	Michael.Fernandez@gallomech.com
Robert Reed	Gallo Mechanical	X				985-640-1336	Robert.Reed@Gallomech.com

AUTOMATED
CONTROL SYSTEMS

March 17, 2026

St. Tammany Parish
Department of Procurement
P. O. Box 628
Covington, LA 70434

Project: **St. Tammany Justice Center Boilers**
Bid # 26-13-2

Department of Procurement:

This letter serves as a formal request for prior approval to quote ABB #ACH580 Series variable frequency drives under **Specification Section 230503 – Variable Frequency Drive** for the St. Tammany Justice Center Boilers project.

We request approval to quote **Section 230503** using equipment manufactured by ABB in accordance with the project plans and specifications. Automated Control Systems, Inc., established in 1987 is the factory authorized representative for sales and service of ABB #ACH580 Series variable frequency drives in south Louisiana.

The proposed ABB #ACH580 Series variable frequency drive fully complies with the performance and functional requirements outlined in Specification Section 230503.

We have included technical submittal documentation specifically for this project to facilitate your review and approval.

Sincerely,

Paul Reuter

Paul Reuter P.E.
President

ABB

P. O. BOX 9566 | METAIRIE, LA 70055-9566 | TEL (504) 885-3694 | FAX (504) 885-3700
www.acscompanies.com

Submittal Schedule

This schedule includes the products supplied as part of this submittal.

Schedule			Motor Data[1]			Drive Data			
Item	Qty	Tag	HP	FLA	Volts	Product ID	HP	Amps	Volts
1	2		15	21	460 VAC	ACH580-VCR-023A-4+F267	15	23	

Notes:

1. AC motor data is per National Electrical Code Table 430.250 for typical motors used in most applications. It is provided as typical data only. DC motor data is per typical industry standards. Actual motor data may vary

Clarifications and Exceptions to Specification and Terms

The comments and clarifications that follow are offered in response to the specification items identified below. Please refer to the specification section and paragraph indicated. Any contract executed based on this proposal is done based acceptance of the exceptions noted herein.

Item ID	Title	Clarifications and Exceptions

Submittal Schedule Details for

Item	Tag / Equipment ID	Product ID
1	CP-1 & 2	ACH580-VCR-023A-4+F267

Item Description
Input Voltage: 480 VAC Three Phase **Rated Output Current:** 23A **Enclosure:** UL (NEMA) Type 1 **Nominal Horsepower:** 15 HP **Input Disconnecting Means:** Circuit Breaker **Bypass:** E-Clipse Bypass (Vertical) **Input Impedance:** 5% equivalent impedance **Short Circuit Current Rating:** 100 kA **Communication Protocols:** Johnson Controls N2, Modbus RTU, BACnet (MS/TP) **Other Options:** [+F267]: Service Switch (+F267)

Drive Input Fuse Ratings	
Fuse Class	**Amps (600 V)**
Class CC	30

Wire Size Capacities of Power Terminals		
Input Wiring	**Output Wiring**	**Ground Wiring**
#14…#1/0 5.2 lbf-ft	#20…#6 1.2 lbf-ft	#14…#4 3 lbf-ft

Dimensions and Weights			
Height ***in (mm)***	**Width** ***in (mm)***	**Depth** ***in (mm)***	**Weight** ***lbs (kg)***
44.1 (1120)	5.4 (137)	10.8 (274)	51 (23)

Heat Dissipation & Airflow Requirements			
Power Losses		**Airflow**	
BTU/Hr	**Watts**	**CFM**	**CM/Hr**
1,217	357	59	100.3

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PRODUCT OVERVIEW

ACH580-01/-31

The 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.

ACH580-01, wall-mounted base drives
The ACH580-01 wall-mounted drives are available from 1 to 100 HP at 208/240 V, 1 to 350 HP at 480 V, and 2 to 250 HP at 575 V. The ACH580-01 drives are available in UL (NEMA) Type 1 and 12 configurations. In standard installations, the drive is mounted directly onto a wall and uses the provided conduit box. Conduit openings are provided for bottom conduit entry & exit. For mounting in a customer-supplied cabinet, the conduit box may be removed. The drive has a 100 kA SCCR rating when paired with appropriately sized upstream fuses.

ACH580-31, ultra low harmonic wall-mounted base drives
The ACH580-31 wall-mounted drives are available from 5 to 75 HP @208/230v and 5 to 400 HP @ 480 V. The ACH580-31 are available in UL (NEMA) Type 1 and 12 configurations. In standard installations, the drive is mounted directly onto a wall and uses the provided conduit box. Conduit openings are provided for bottom conduit entry and exit. For mounting in a customer-supplied cabinet, the conduit plate may be removed.

Features for HVAC
The ACH580 includes a Bluetooth control panel that allows you to configure, control, and monitor the drive. You can also use the DriveTune app on your mobile device for these functions remotely. An optional standard control panel is available with all the same configure, control and monitoring capabilities but without Bluetooth.

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 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 , are available with optional fieldbus adapters.

Technical specifications

Product compliance (complete list on following page)	
ACH580-01/-31	CE, UL, cUL, and EAC
Supply connection	
Input voltage (U_1) ACH580-xx-xxxA-2 ACH580-xx-xxxA-4 ACH580-xx-xxxA-6 Input voltage tolerance Phase	 208/230V 480V 600V +10% / -15% 3-phase (1-phase, 240 V)
Frequency	48 to 63 Hz
Line Limitations	Max ±3% of nominal phase to phase input voltage
Power Factor (cos φ) at nominal load ACH580-01 ACH580-31	 0.98 1.0
Efficiency at rated power ACH580-01 ACH580-31	 98.0% 96.5%
Power Loss	Approximately 2% of rated power
Motor connection	
Supported motor control	Scalar and vector
Supported motor types	Asynchronous motor, permanent magnet motor (vector), SynRM (vector)
Voltage	3-phase, from 0 to supply voltage
Frequency	0 to 500 Hz
Short Term Overload Capacity Variable Torque	110% for 1 min/10min
Peak Overload Capacity Variable Torque	1.35 for 2 second (2 sec / 10 min)
Switching Frequency	2, 4, 8 or 12 kHz Automatic fold back in case of overload
Acceleration/Deceleration Time	0 to 1800 s
Short Circuit Current Rating (SCCR)	100 ka with fusing
Inputs and outputs (drive)	
2 analog inputs	Selection of Current/Voltage input mode is user programmable.
Voltage reference	0 (2) to 10 V, R_{in} > 200 kΩ
Current reference	0 (4) to 20 mA, R_{in} = 100 Ω
Potentiometer reference value	10 V ±1% max. 20 mA
2 analog outputs	AO1 is user programmable for current or voltage. AO2 current
Voltage reference	0 to 10 V, R_{load}: > 100 kΩ
Current reference	0 to 20 mA, R_{load}: < 500 Ω
Applicable potentiometer	1 kΩ to 10 kΩ
Internal auxiliary voltage	24 V DC ±10%, max. 250 mA
Accuracy	+/- 1% full scale range at 25°C (77°F)
Output updating time	2 ms
6 digital inputs	12 to 24 V DC, 10 to 24 V AC, Connectivity of PTC sensors supported by a single digital input. PNP or NPN connection (5 DIs with NPN connection). Programmable
Input Updating Time	2 ms

3 relay outputs	Maximum switching voltage 250 V AC/30 V DC. Maximum continuous current 2 A rms. Programmable, Form C
Adjustable filters on analog inputs and outputs	
All control inputs isolated from ground and power	
Operation	
Air temperature	0 to -15 °C (32 to 5 °F). -15 to +50 °C (5 to 122 °F): No frost allowed. Output derated above +40 °C (104 °F)
Installation site altitude	0 to 4000 m (13123 ft) above sea level Output derated above 1000 m (3281 ft)
Relative humidity	5 to 95% No condensation allowed Maximum relative humidity is 60% in the presence of corrosive gasses
Atmospheric pressure	70 to 106 kPa (10.2 to 15.4 PSI) 0.7 to 1.05 atmospheres
Vibration	Risk category IV Certified (IBC 2018)
Environmental protections	
Chemical Gasses	Class 3C2
Solid Particles	Class 3S2 No conductive dust allowed
Pollution degree (IEC/EN 61800-5-1)	Pollution degree 2
Product compliance	
Standards and directives	Low Voltage Directive 2006/95/EC EMC Directive 2004/108/EC 60721-3-3: 2002 60721-3-1:1997 Quality assurance system ISO 9001 and Environmental system ISO 14001 CE, UL, cUL, and EAC approvals Galvanic isolation according to PELV RoHS2 (Restriction of Hazardous Substances) EN 61800-5-1: 2007; IEC/EN 61000-3-12; EN61800-3: 2017 + A1: 2012 Category C2 (1st environment restricted distribution); Safe torque off (EN 61800-5-2) BACnet Testing Laboratory (BTL) Seismic (IBC, OSHPD) Plenum (ACH580-01 only)
EMC (according to EN61800-3)	ACH580-01 and ACH580-31 class C2 (1st environment restricted distribution)

Storage (in Protective Shipping Package)	
Air Temperature	-40 to +70 °C (-40 to +158 °F)
Relative Humidity	Less than 95% No condensation allowed Maximum relative humidity is 60% in the presence of corrosive gasses
Chemical Gasses	Class 1C2
Solid Particles	Class 1S2 Contact ABB regarding Class 1S3
Atmospheric pressure	70 to 106 kPa 0.7 to 1.05 atmospheres
Vibration (ISTA) R1…R4 R5…R9	 In accordance with ISTA 1A In accordance with ISTA 3E
Transportation (in Protective Shipping Package)	
Air Temperature	-40° to 70°C (-40° to 158°F)
Relative Humidity	Less than 95% No condensation allowed Maximum relative humidity is 60% in the presence of corrosive gasses
Atmospheric Pressure	60 to 106 kPa (8.7 to 15.4 PSI) 0.6 to 1.05 atmospheres
Free Fall	R1: 76 cm (30 in) R2: 61 cm (24 in) R3: 46 cm (18 in) R4: 31 cm (12 in) R5: 25 cm (10 in)
Chemical Gasses	Class 2C2
Solid Particles	Class 2S2
Shock/ Drop (ISTA) R1…R4 R5…R9	 In accordance with ISTA 1A In accordance with ISTA 3E
Vibration (ISTA) R1…R4 R5…R9	 In accordance with ISTA 1A In accordance with ISTA 3E

Feature overview

Communication
Protocols as standard (EIA-485): BACnet MS/TP, Modbus RTU, Johnson Controls N2
Available as plug-in options: BACnet/IP, Modbus TCP, PROFIBUS-DP, DeviceNet, EtherNet/IP, LonWorks (coming 2019)

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

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

Panel functions
First start assistant
Primary settings for HVAC applications
Hand-Off-Auto operation mode
HVAC quick set-up
Includes Day, Date and Time
Operator Panel Parameter Backup (read/write)
Full Graphic and Multilingual Display for Operator Control, Parameter Set-Up and Operating Data Display:
- Output Frequency (Hz)
- Speed (RPM)
- Motor Current
- Calculated % Motor Torque
- Calculated Motor Power (kW)
- 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
V/Hz shapes
- Linear
- Squared

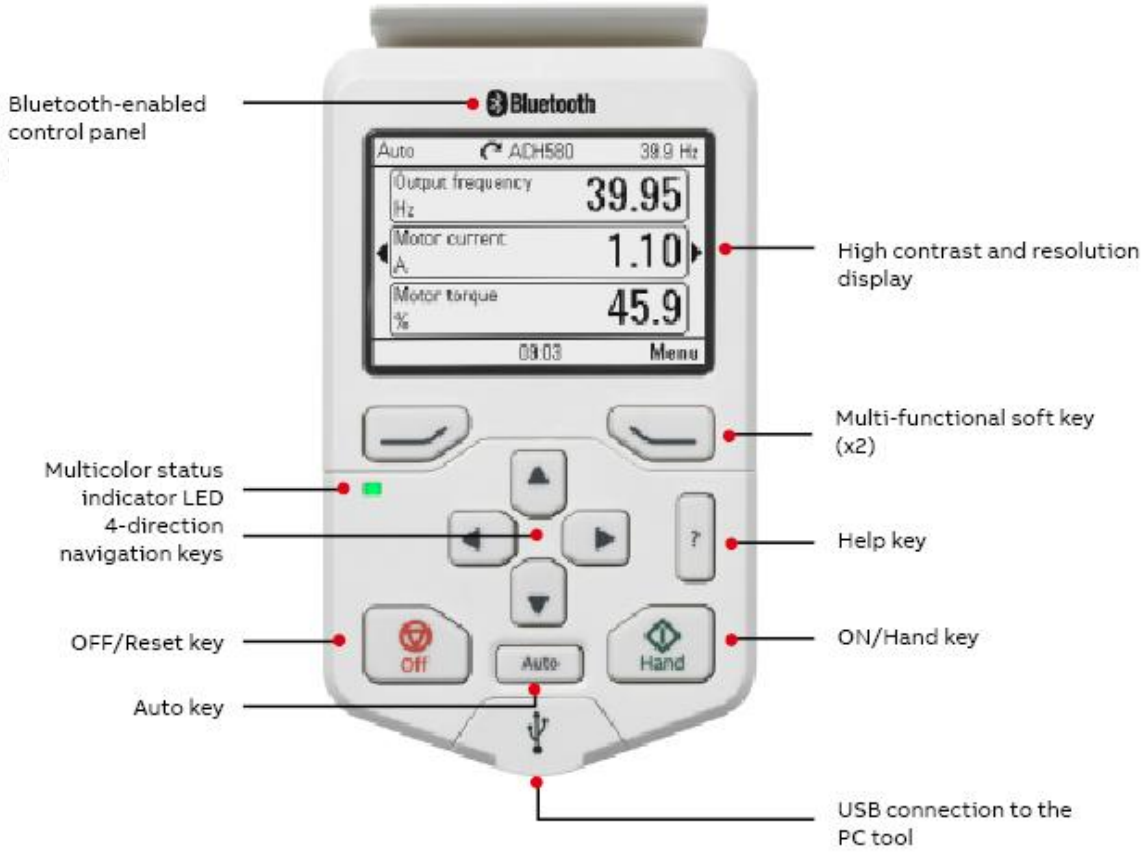
Energy optimization
IR compensation
Slip compensation
Three (3) Critical Frequency Lockout Bands

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

Control panel features

The ACH580 Assistant Control Panel features:
- Intuitive to operate
- Primary Setting menu to ease drive commissioning
- Real-time clock
- Diagnostic and maintenance functions
- Full-graphic display, including chart, graph, and meter options
- 21 editable home views
- USB interface for PC and tool connection as standard
- Parameters are alpha-numeric
- North American version supports 14 languages as standard
- Dedicated “Help” key
- 4 user sets
- Parameter are stored in control panel memory for later transfer to other drives or for backup of a particular system
- Back-up and restore parameters and/or motor data
- Automatic back-up 2 hours after parameter change

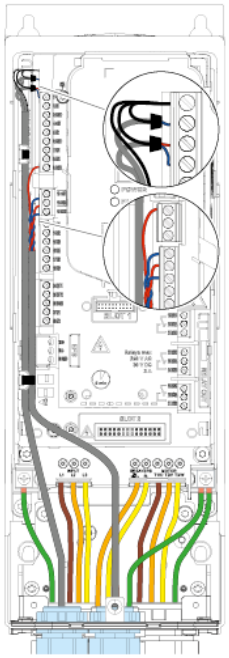
- Modified parameter display
- Creates unique short menu
- Shows parameters that differ from the default
-



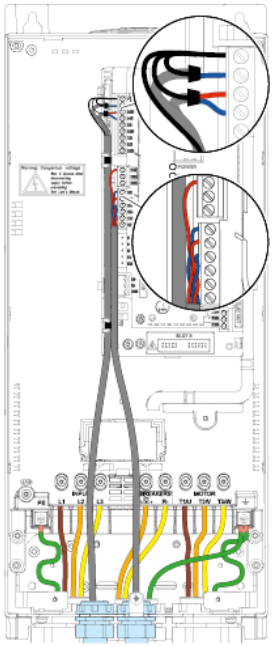
Cable connections

The following illustrations show the ACH580-01 and ACH580-31 cable connection points for the base drive. The illustrations indicate the location of input and output power connections as well as equipment and motor grounding connection points.

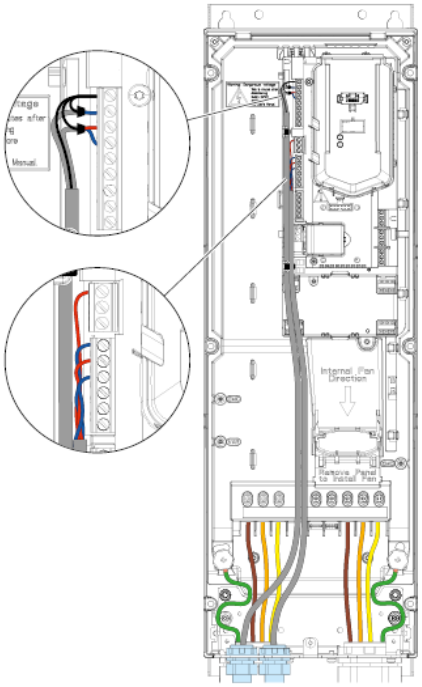
ACH580 drives are configured for wiring access from the bottom only. At least three separate metallic conduits are required, one for input power, one for output power to the motor and one for control signals.



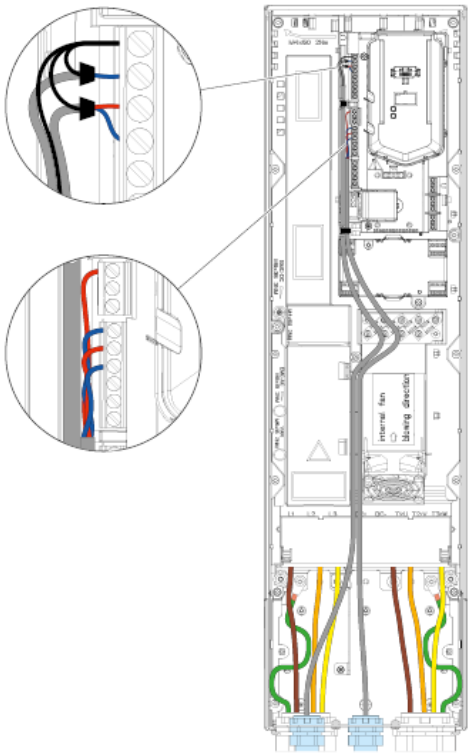
ACH580-01, R1-R2, UL (NEMA) Type 1 and 12



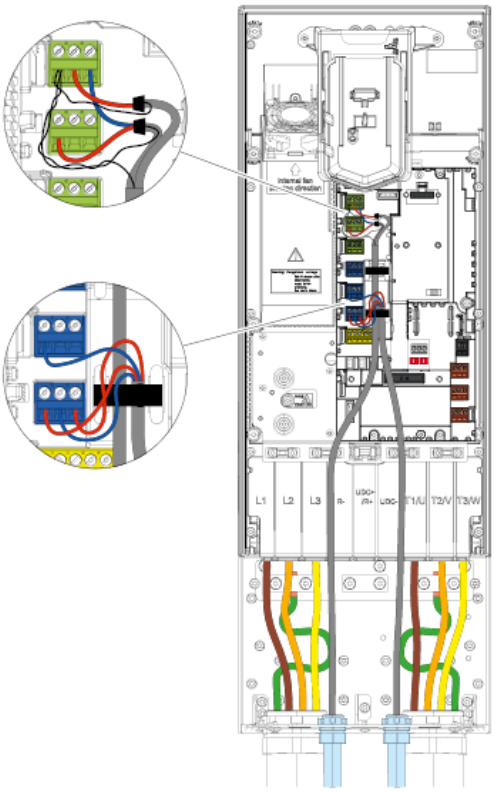
ACH580-01, R3, UL (NEMA) Type 1 and 12



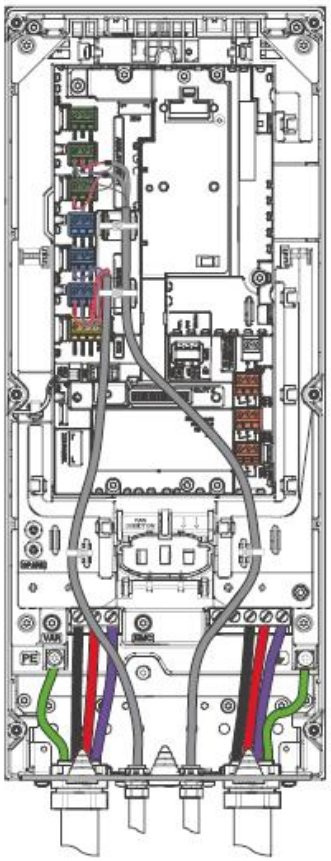
ACH580-01, R4, UL (NEMA) Type 1 and 12



ACH580-01, R5, UL (NEMA) Type 1 and 12



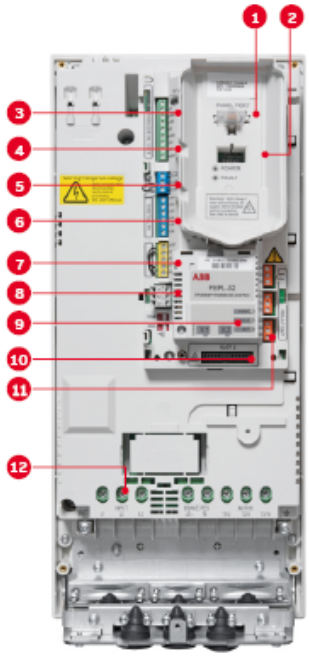
ACH580-01, R6-9, UL (NEMA) Type 1 and 12



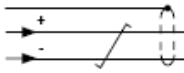
ACH580-31, R3, UL (NEMA) Type 1 and 12

Control connections

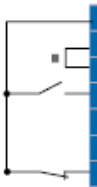
Default control connections



1. Panel port (PC tools, control panel)
2. ABB drive customizer port for programming the drive without mains
3. Analog inputs (2 × AI)
4. Analog outputs (2 × AO)
5. 24 V DC output
6. Digital inputs (6 × DI)
7. Safe torque off (STO)
8. Embedded fieldbus
9. Communication options (fieldbuses)
10. Analog and digital I/O extensions
11. Relay outputs (3 × RO)
12. Mains connection



0...10 V DC speed reference signal



Terminal	Meaning	Default macro connections
X1	**Reference voltage and analog inputs and outputs**	
1	SCR	Signal cable shield (screen)
2	AI1	**Output frequency/speed reference:** 0 to 10 V
3	AGND	Analog input circuit common
4	+10 V	Reference voltage 10 V DC
5	AI2	**Actual feedback:** 0 to 20 mA
6	AGND	Analog input circuit common
7	AO1	**Output frequency:** 0 to 10 V
8	AO2	**Motor current:** 0 to 20 mA
9	AGND	Analog output circuit common
X2 & X3	**Aux. voltage output and programmable digital inputs**	
10	+24 V	Aux. voltage output +24 V DC, max. 250 mA
11	DGND	Aux. voltage output common
12	DCOM	Digital input common for all
13	DI1	**Stop (0)/Start (1)**
14	DI2	Not configured
15	DI3	**Constant frequency/speed selection**
16	DI4	**Start interlock 1 (1 = allow start)**
17	DI5	Not configured
18	DI6	Not configured
X6, X7, X8	**Relay outputs**	
19	RO1C	**Damper control** 250 V AC/30 V DC 2 A — Energize damper 19 connected to 21
20	RO1A	
21	RO1B	
22	RO2C	**Running** 250 V AC/30 V DC 2 A — Running 22 connected to 24
23	RO2A	
24	RO2B	
25	RO3C	**Fault (-1)** 250 V AC/30 V DC 2 A — Fault condition 25 connected to 26
26	RO3A	
27	RO3B	
X5	**Embedded fieldbus**	
29	B+	Embedded fieldbus, EFB (EIA-485)
30	A-	
31	DGND	
S4	TERM	Termination switch
S5	BIAS	Bias resistors switch
X4	**Safe torque off**	
34	OUT1	Safe torque off. Factory connection. Both circuits must be closed for the drive to start. See chapter *The Safe torque off function* in the *hardware manual* of the drive.
35	OUT2	
36	SGND	
37	IN1	
38	IN2	
X10	**24 V AC/DC**	
40	24 V AC/DC+ in	R6-R11 only: Ext. 24V AC/DC input to power up the control unit when the main supply is disconnected.
41	24 V AC/DC- in	

Damper actuator

Run status

Fault status

Notes:
- Connected with jumpers at the factory.
- Only frames R6-R11 have terminals 40 and 41 for external 24 V AC/DC input.

PRODUCT OVERVIEW

ACH580 E-Clipse Bypass

The 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 ACH580 with ABB E-Clipse bypass is an ACH580 HVAC Drive in an integrated UL (NEMA) Type 1, 12 or 3R enclosure with a bypass motor starter. The 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 with the +F267 option include a drive service switch.

UL (NEMA) Type 1 and 12 E-Clipse units are available from 1 to 100 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.

For outdoor applications, UL (NEMA) Type 3R E-Clipse unit are available from 1 to 100 HP at 208/230V, 1 to 350 HP at 460V and 2 to 150 HP at 575V. Construction is sheet steel with a tough powder coat paint finish for corrosion resistance. A thermostatically controlled space heater and forced ventilated air cooling system are standard.

The 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 ACH580 is out of service. The other contactor is the ACH580 output contactor that disconnects the 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 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 ACH580 drive path disconnect the drive from the line prior to clearing upstream branch circuit protection, maintaining bypass capability.

Technical specifications

Product compliance (complete list on following page)	
ACH580-VxR/BxR	UL508A
Supply connection	
Input voltage (U_1)	
ACH580-xx-xxxA-2	208/240V
ACH580-xx-xxxA-4	480V
ACH580-xx-xxxA-6	600V
Input voltage tolerance	+10% / -15%
Phase	3-phase
Frequency	48 to 63 Hz
Line Limitations	Max ±3% of nominal phase to phase input voltage
Power Factor (cos φ) at nominal load	
ACH580-VxR	0.98
ACH580-BxR	0.98
Efficiency at rated power	
ACH580-VxR	98.0%
ACH580-BxR	98.0%
Power Loss	Approximately 2% of rated power
Motor connection	
Supported motor control	Scalar and vector
Supported motor types	Asynchronous motor
Voltage	3-phase, from 0 to supply voltage
Frequency	0 to 500 Hz
Short Term Overload Capacity Variable Torque	110% for 1 min/10min
Peak Overload Capacity Variable Torque	1.35 for 2 second (2 sec / 10 min)
Switching Frequency	2, 4, 8 or 12 kHz Automatic fold back in case of overload
Acceleration/Deceleration Time	0 to 1800 s

Short Circuit Current Rating (SCCR)

	240V	480V	600V
-VCR	100kA	100kA	10 kA
-VDR*	100kA	100kA	100 kA
-BCR	100kA	100kA	10 kA
-BDR*	100kA	100kA	100 kA

* External fuses are required for 100 kA rating as specified in the “Technical Data” section of User Manual 3AXD50000289554.

Technical specifications

Inputs and outputs (drive)	
2 analog inputs	Selection of Current/Voltage input mode is user programmable.
Voltage reference	0 (2) to 10 V, R_{in} > 200 kΩ
Current reference	0 (4) to 20 mA, R_{in} = 100 Ω
Potentiometer reference value	10 V ±1% max. 20 mA
2 analog outputs	AO1 is user programmable for current or voltage. AO2 current
Voltage reference	0 to 10 V, R_{load}: > 100 kΩ
Current reference	0 to 20 mA, R_{load}: < 500 Ω
Applicable potentiometer	1 kΩ to 10 kΩ
Internal auxiliary voltage	24 V DC ±10%, max. 250 mA
Accuracy	+/- 1% full scale range at 25°C (77°F)
Output updating time	2 ms
6 digital inputs	12 to 24 V DC, 10 to 24 V AC, Connectivity of PTC sensors supported by a single digital input. PNP or NPN connection (5 DIs with NPN connection). Programmable
Input Updating Time	2 ms
3 relay outputs	Maximum switching voltage 250 V AC/30 V DC. Maximum continuous current 2 A rms. Programmable, Form C
Contact material	Silver Tin Oxide ($AgSnO_2$)
PTC, PT100 and PT1000	Any of the analog inputs, or digital input 6, are configurable for PTC with up to 6 sensors.
Adjustable filters on analog inputs and outputs	
All control inputs isolated from ground and power	
Operation	
Air temperature	0 to -15 °C (32 to 5 °F). -15 to +50 °C (5 to 122 °F): No frost allowed. Output derated above +40 °C (104 °F)
Installation site altitude	0 to 1000 m (3281 ft) above sea level Output derated above 1000 m (3281 ft)
Relative humidity	5 to 95% No condensation allowed Maximum relative humidity is 60% in the presence of corrosive gasses
Atmospheric pressure	70 to 106 kPa (10.2 to 15.4 PSI) 0.7 to 1.05 atmospheres
Siesmic	Risk category IV Certified (IBC 2018)

Feature overview

Communication
Protocols as standard (EIA-485): BACnet MS/TP, Modbus RTU, Johnson Controls N2
Available as plug-in options: BACnet/IP, Modbus TCP, PROFIBUS-DP, DeviceNet, EtherNet/IP

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

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

Panel functions
First start assistant
Primary settings for HVAC applications
Hand-Off-Auto operation mode
HVAC quick set-up
Includes Day, Date and Time
Operator Panel Parameter Backup (read/write)
Full Graphic and Multilingual Display for Operator Control, Parameter Set-Up and Operating Data Display:
- Output Frequency (Hz)
- Speed (RPM)
- Motor Current
- Calculated % Motor Torque
- Calculated Motor Power (kW)
- 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
V/Hz shapes
- Linear
- Squared

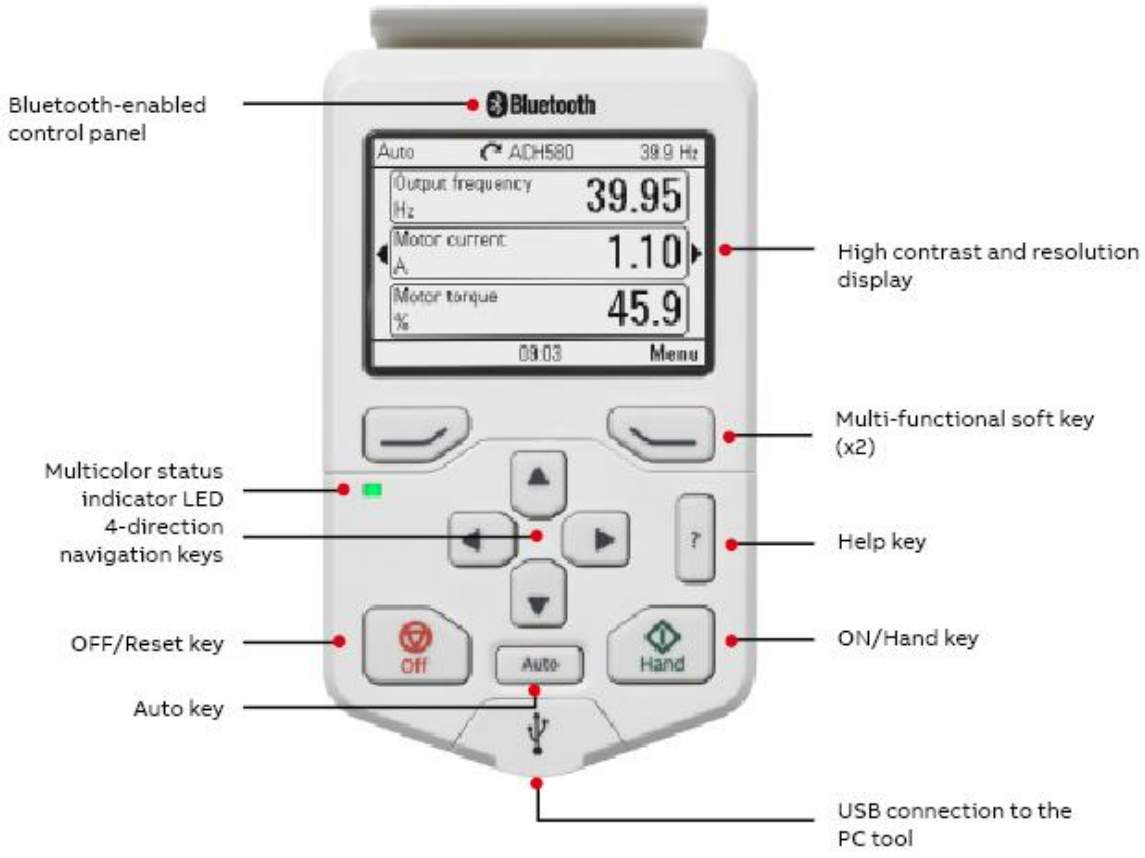
Energy optimization
IR compensation
Slip compensation
Three (3) Critical Frequency Lockout Bands

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

Control panel features

The ACH580 Assistant Control Panel features:
- Intuitive to operate
- Primary Setting menu to ease drive commissioning
- Real-time clock
- Diagnostic and maintenance functions
- Full-graphic display, including chart, graph, and meter options
- 21 editable home views
- USB interface for PC and tool connection as standard
- Parameters are alpha-numeric
- North American version supports 14 languages as standard
- Dedicated “Help” key
- 4 user sets
- Parameter are stored in control panel memory for later transfer to other drives or for backup of a particular system

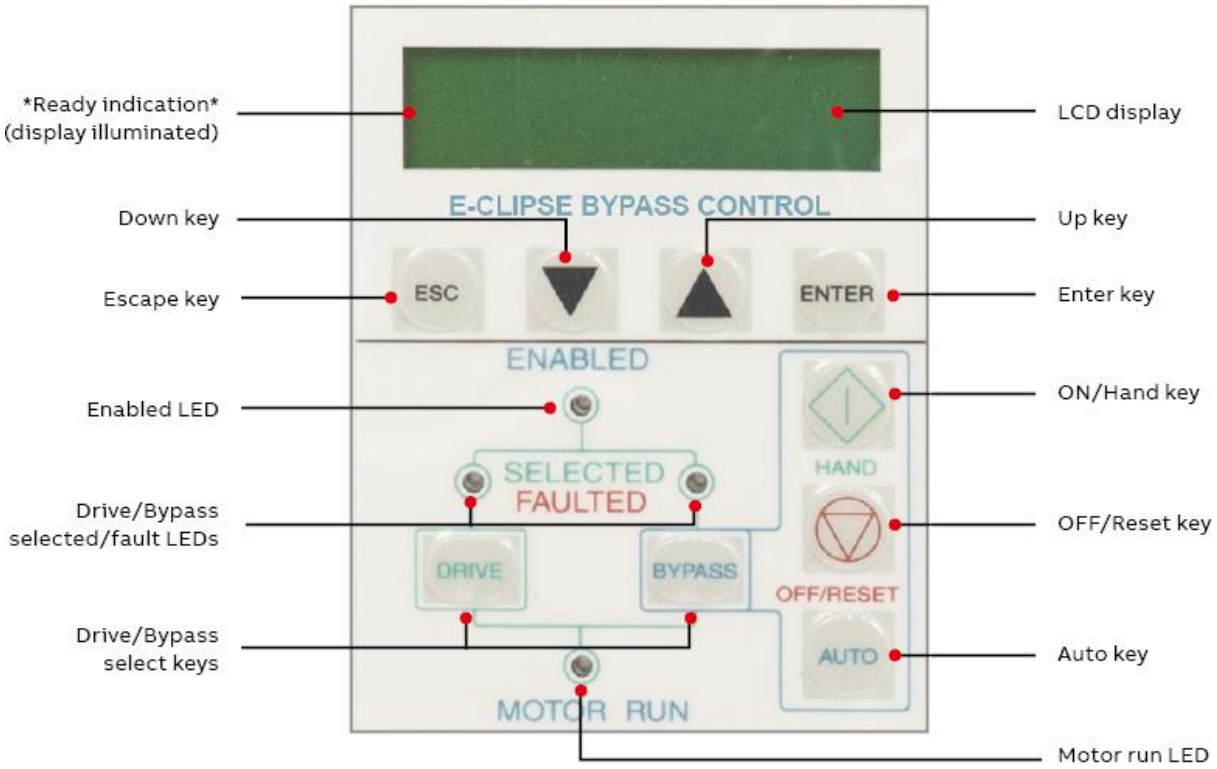
- Back-up and restore parameters and/or motor data
- Automatic back-up 2 hours after parameter change
- Modified parameter display
- Creates unique short menu
- Shows parameters that differ from the default



E-Clipse control panel features

The ACH580 E-Clipse Control Panel features:

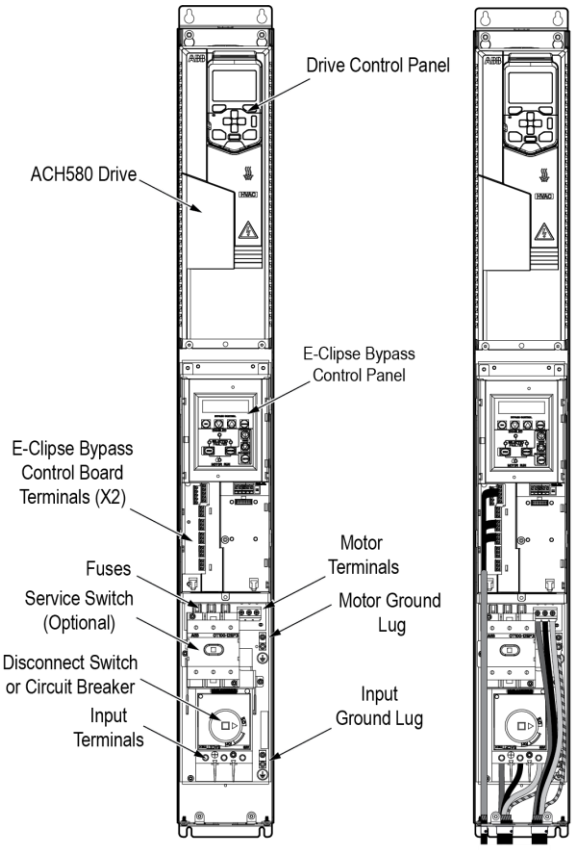
- Dedicated programming and operating controls (keys) are logically grouped on the keypad by their function.
  - H-O-A, Drive/Bypass Selection keys (Control)
  - UP/DOWN arrows, ESC, ENTER keys (Programming)
- LCD display provide:
  - Operating Control Status
  - Bypass Status
  - Fault/Warning annunciation
  - Parameter Lists and Values
  - Power On indication
- Individual LEDs arranged to provide a logical control path visual:
  - System Enabled
  - Separate multi colored Drive and Bypass “SELECTED/FAULTED LEDs in separate paths
  - Motor Run Indicator
  - LEDs that illuminate, change color, and flash to provide visible indication of system status
- Provides System control from one location



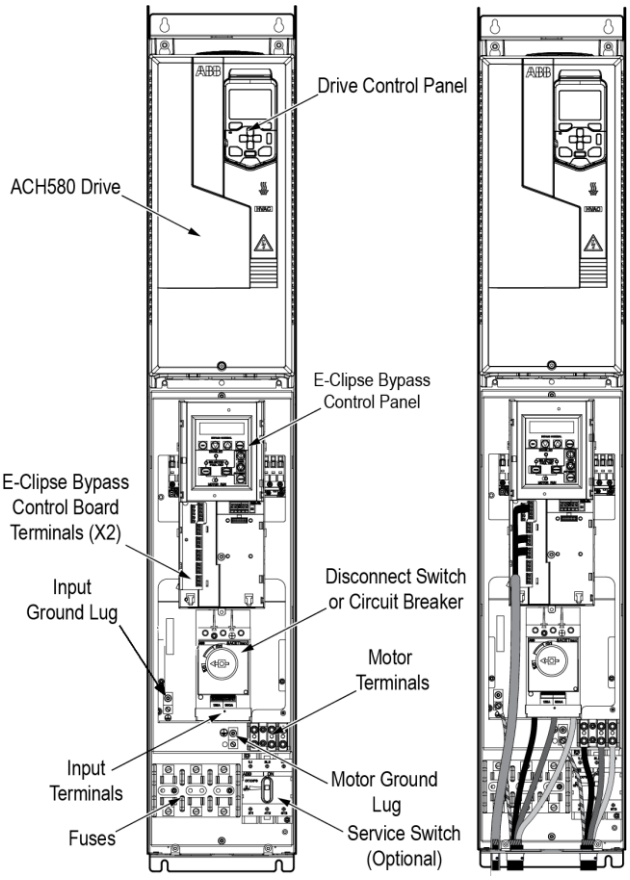
Cable connections

The following illustrations show the ACH580 with ABB E-Clipse bypass cable connection points for the various enclosure styles. The illustrations indicate the location of input and output power connections as well as equipment and motor grounding connection points.

ACH580 drives are configured for wiring access from the bottom only on Vertical ABB E-Clipse bypass units and from the top only on Standard ABB E-Clipse bypass units. At least three separate metallic conduits are required, one for input power, one for output power to the motor and one for control signals.

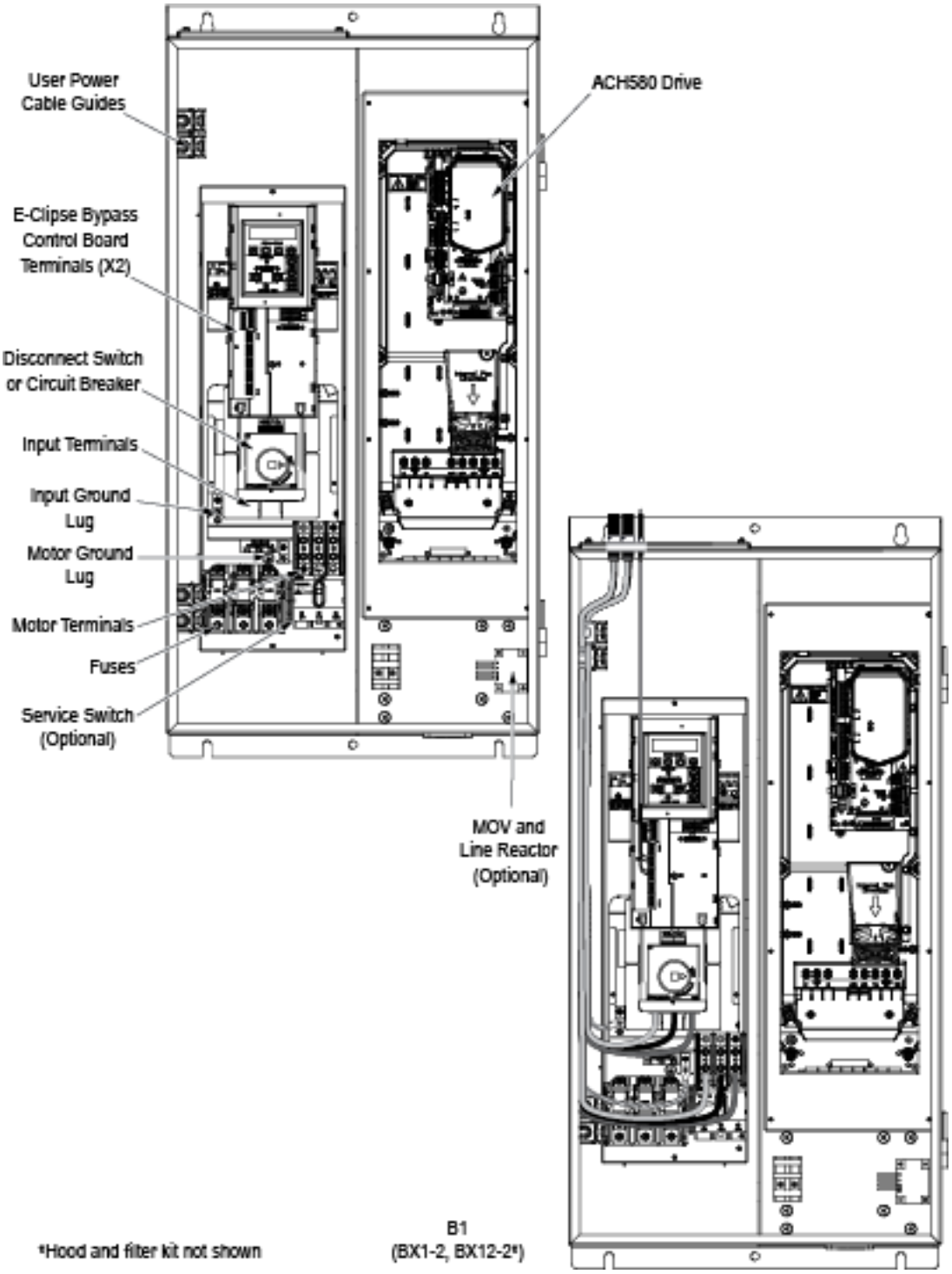


Vx1-1, Vx1-2



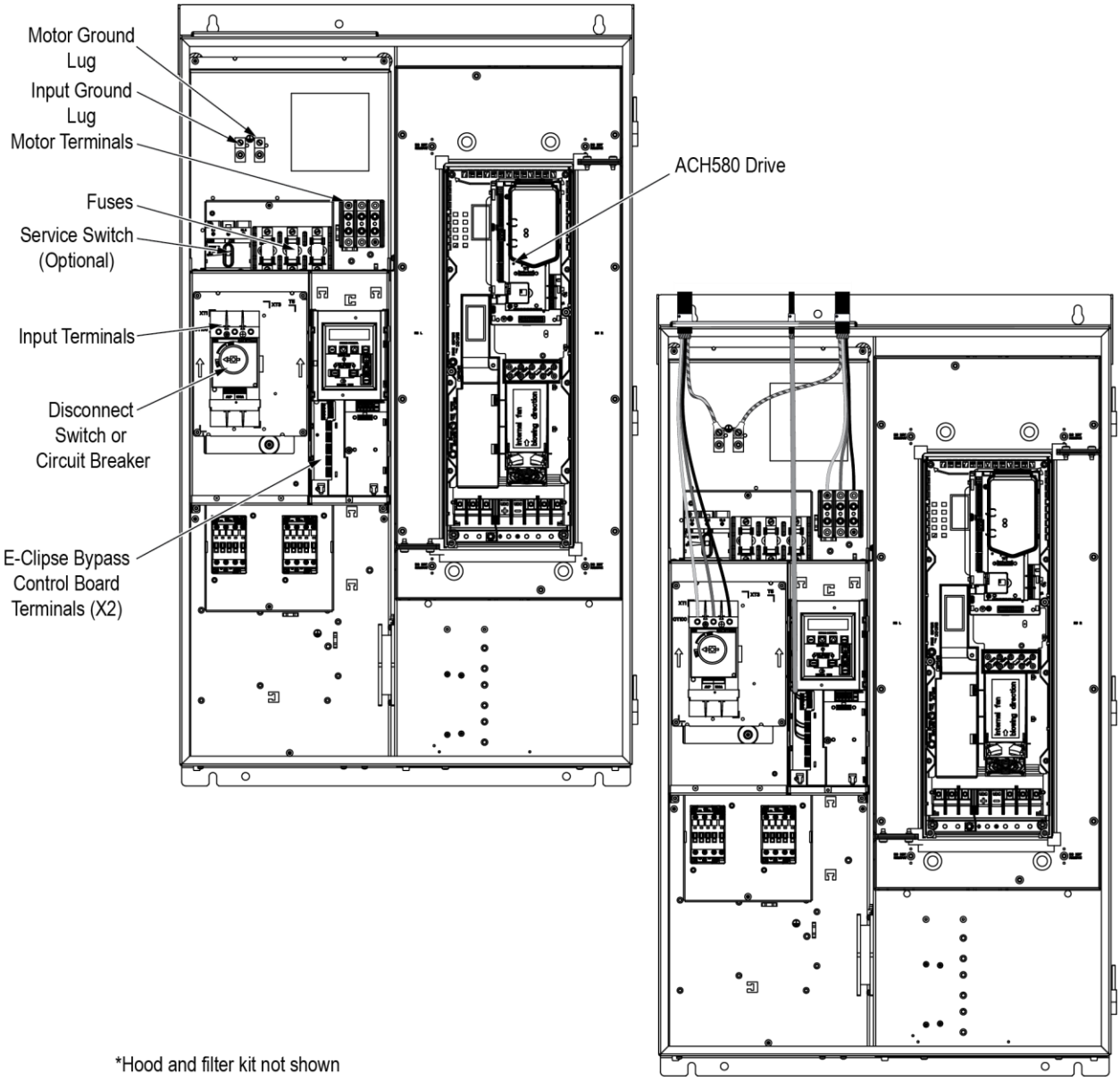
Vx1-3, Vx1-4

Cable connections



Bx1-1, Bx12-1, Bx3R-1

Control connections

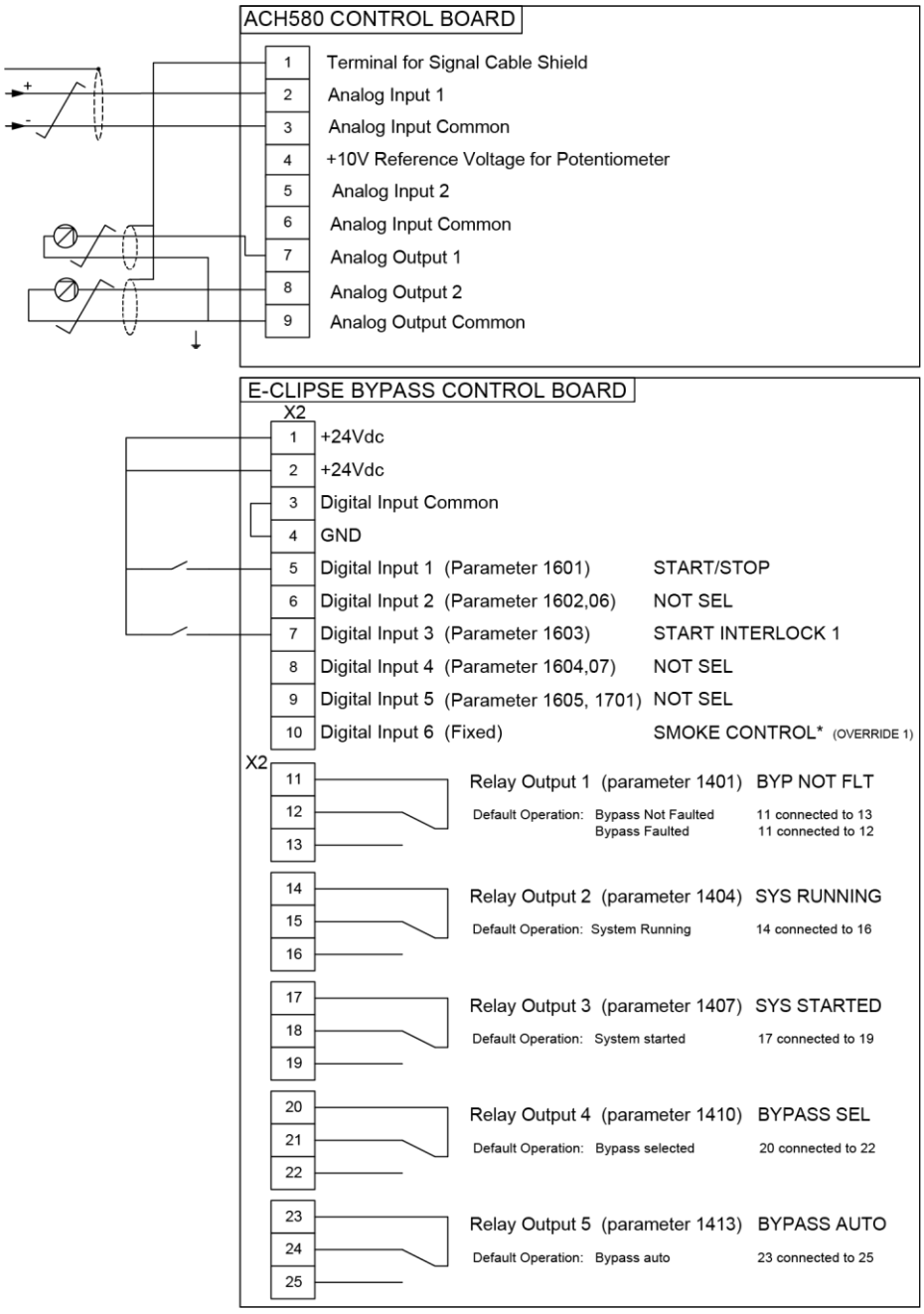


*Hood and filter kit not shown

Bx1-3*, Bx12-3*

Control connections

The control wiring includes connections to an analog speed command signal and a start/stop relay contact for controlling the motor in the AUTO mode. There may also be connections to external run permissive interlock contacts and a connection from the Motor Run contact to an external status indication circuit. For a detailed description of the control circuit functions and alternate Control Connection diagrams, refer to the ACH580 E-Clipse bypass and packaged drive manual.



Engineering Data Summary

Replacement Fuses

Drive input fuses are recommended to disconnect the drive from power in the event that a component fails in the drive's power circuitry. Recommended drive input fuse specifications are listed in the *Submittal Schedule Details* and in the *Fuse Ratings* Table. Fuse rating information is provided for customer reference.

Item	Catalog Number	Drive Input Fuse Ratings	
		Amps (600V)	Bussmann Type
1	ACH580-VCR-023A-4+F267	30	Class CC

Terminal Sizes / Cable Connection Requirements

Power and motor cable terminal sizes and connection requirements are shown in the *Submittal Schedule Details* and in the *Terminal Sizes / Cable Connection Requirements* Table. The information provided below is for connections to input power and motor cables. These connections may be made to an input circuit breaker or disconnect switch, a motor terminal block, overload relay, and/or directly to bus bars and ground lugs. The table also lists torque that should be applied when tightening terminals and spacing requirements where multiple mounting holes are provided in the bus bar.

Item	Catalog Number	Input Wiring	Output Wiring	Ground Wiring
1	ACH580-VCR-023A-4+F267	#14…#1/0 5.2 lbf-ft	#20…#6 1.2 lbf-ft	#14…#4 3 lbf-ft

Heat Dissipation Requirements

The cooling air entering the drive must be clean and free from corrosive materials. The *Submittal Schedule Details* and the *Heat Dissipation Requirements* table below give the heat dissipated into the hot air exhausted from the drives. If the drives are installed in a confined space, the heat must be removed from the area by ventilation or air conditioning equipment.

Item	Catalog Number	Watts	BTU/Hr
1	ACH580-VCR-023A-4+F267	357	1,217

Dimensions and Weights

Dimensions and weights of the drives provided are given in the *Submittal Schedule Details* and in the *Dimensions and Weights* Table. The table also lists the applicable dimension drawings that include additional detail. Dimension drawings may be provided in the back of this submittal.

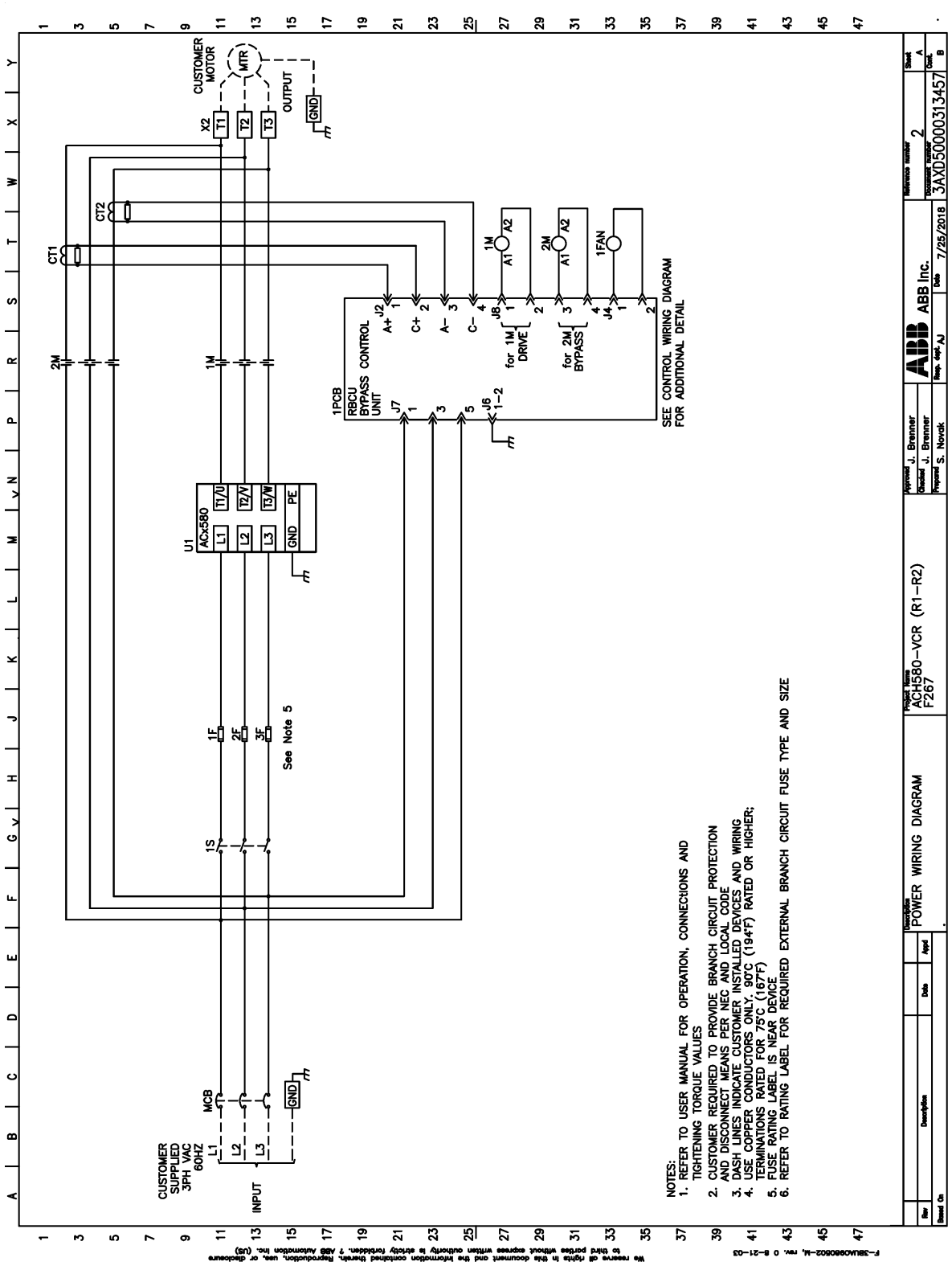
Item	Catalog Number	Height *mm* *(in)*	Width *mm* *(in)*	Depth *mm* *(in)*	Weight *kg* *(lbs)*
1	ACH580-VCR-023A-4+F267	1120 (44.10)	137 (5.40)	274 (10.79)	23 (51)

Product Short Circuit Current Rating

Short circuit ratings shown below are as show on the device rating label.

Item	Catalog Number	Short Circuit Current Rating
1	ACH580-VCR-023A-4+F267	100 kA

Item	Part Number	Customer Designation
1	ACH580-VCR-023A-4+F267	



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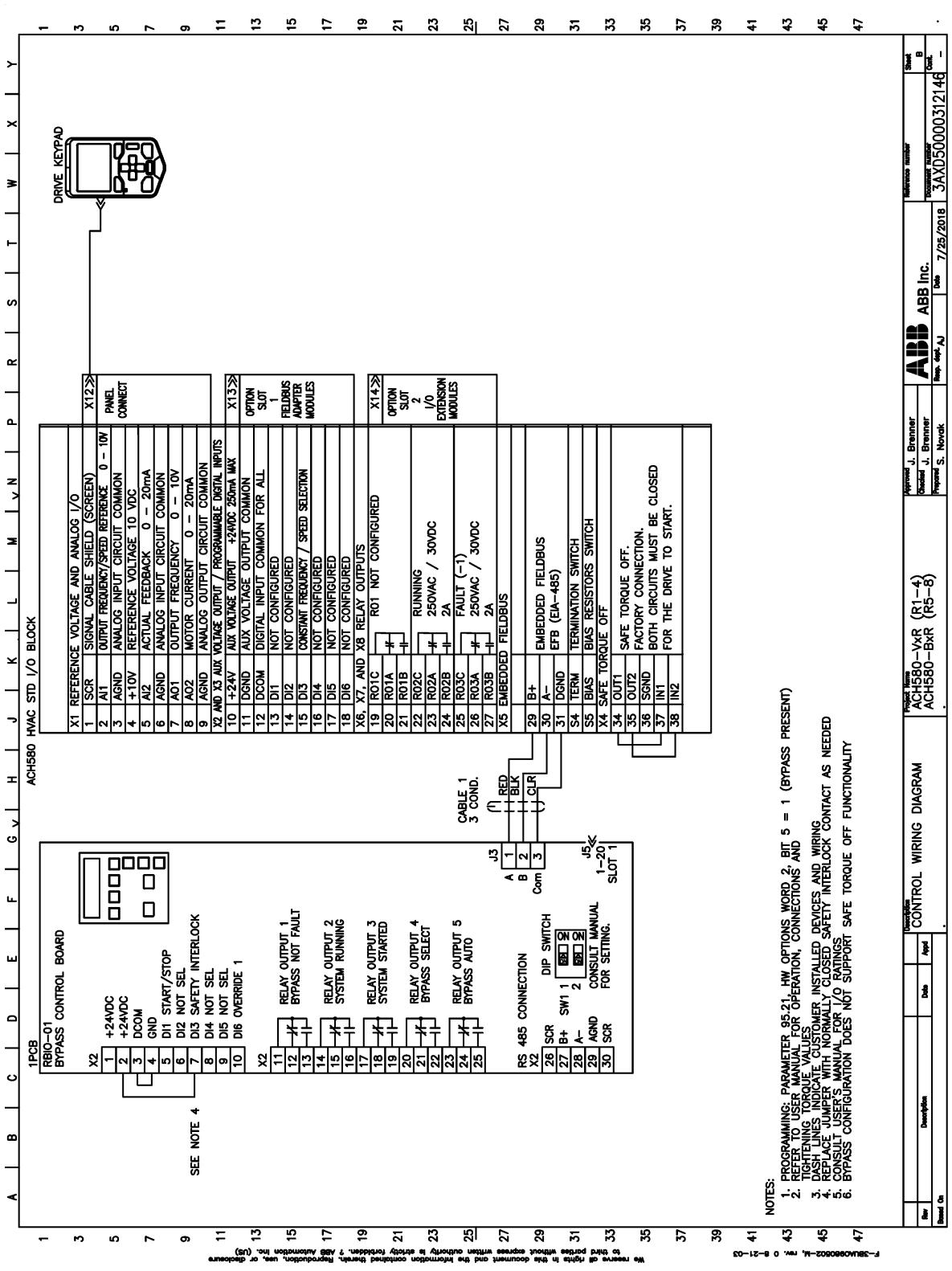
Item	Part Number	Customer Designation
1	ACH580-VCR-023A-4+F267	



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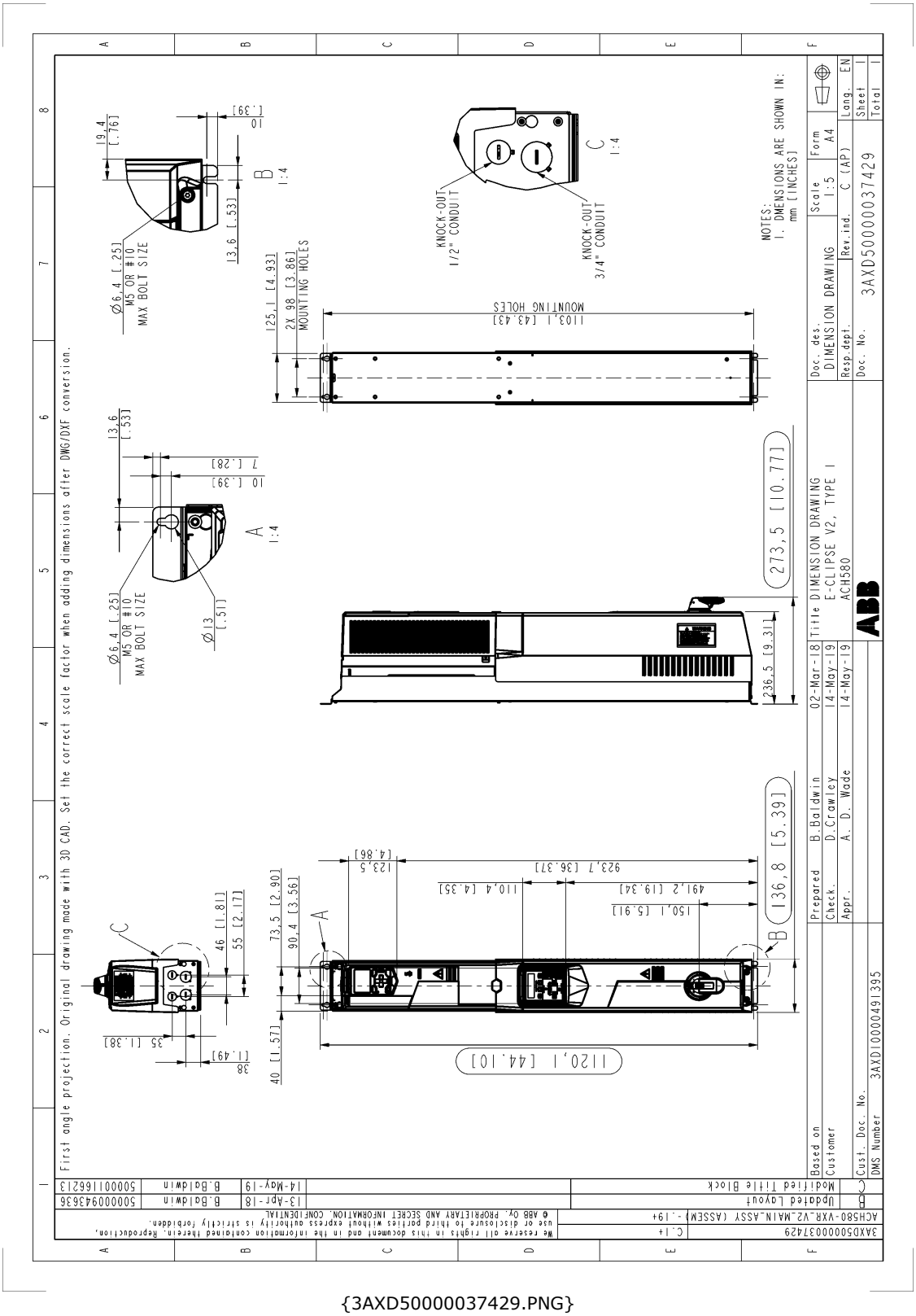
Item	Part Number	Customer Designation
1	ACH580-VCR-023A-4+F267	



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