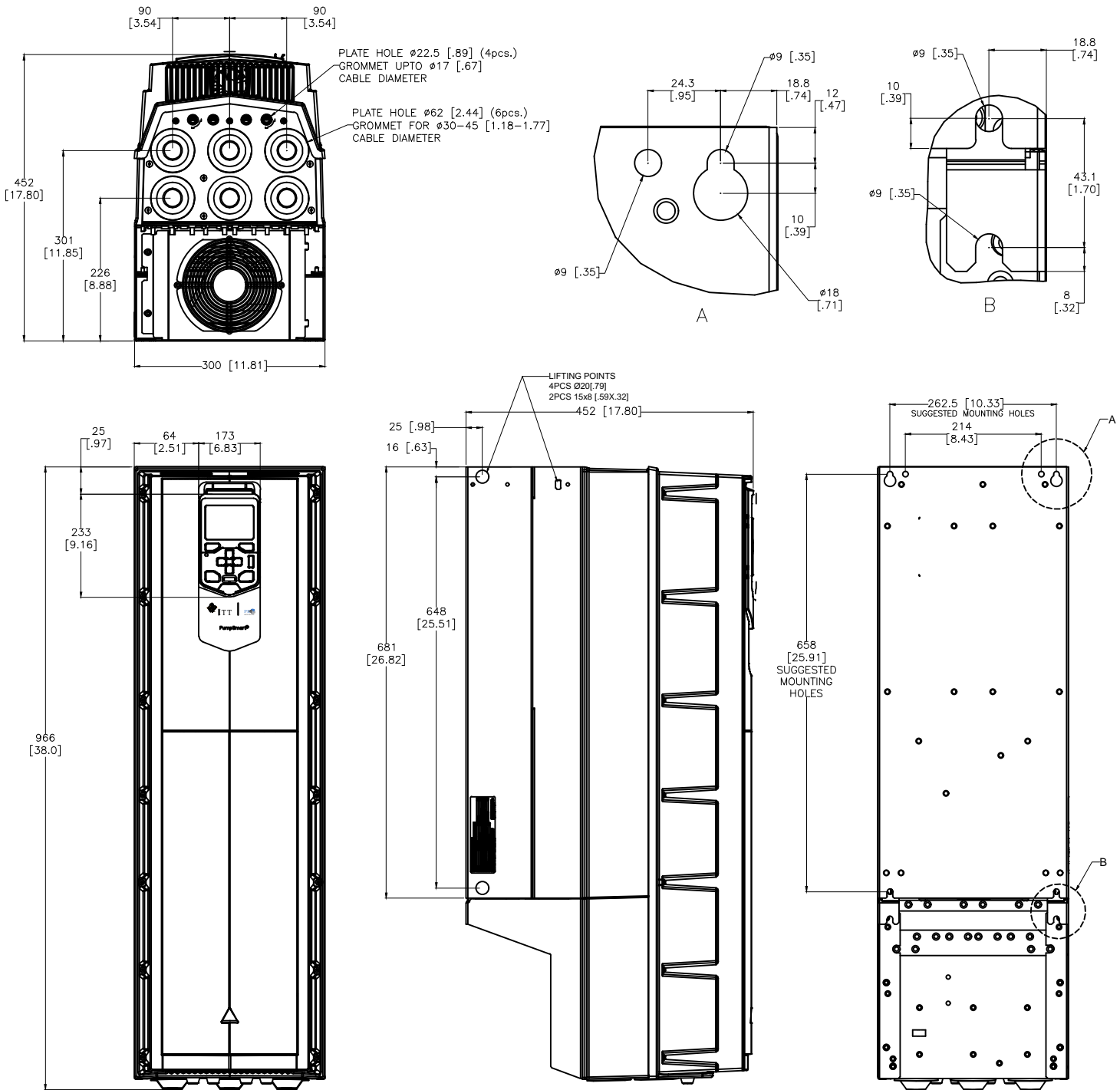


PumpSmart PS220 pump and motor Control System

The PumpSmart PS220 is a pump and motor control system that provides integral starting, right-sizing, pump protection and process control for all pumping applications. The PumpSmart PS220 is based upon the ABB ACS880-01 variable frequency drive platform. PumpSmart Control Solutions has worked with ABB to incorporate proprietary pump protection, process control and configuration algorithms into the drive to make it more suitable for pumping applications



DRIVE DIMENSIONS

FRAME	HEIGHT mm [Inches]	WIDTH mm [Inches]	DEPTH mm [Inches]	WEIGHT Kg [lbs]
R8	966 [38.01]	300 [11.81]	452 [17.78]	74 [163]

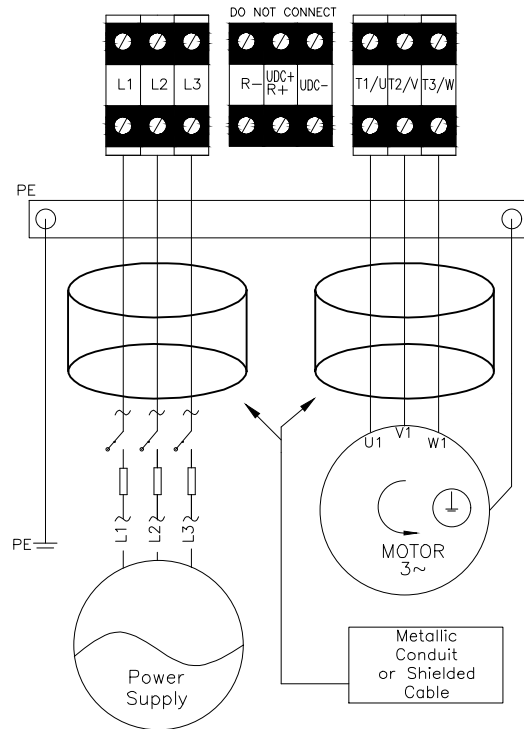
* DIMENSIONS NOT FOR CONSTRUCTION

Drive Ratings

ITT P/N	ABB P/N	Input Voltage VAC	Power ¹		Rated Current ² (A)	Heat Dissipation		Air Flow		Frame	Enclosure Rating	Recommended main Fuses	
			HP	kW		Watts	BTU/hr	m ³ /hr	CFM			UL Type Bussmann	IEC Type Bussmann
K03551A16	ACS880-01-274A-2+B056	208-240	100	75	260	2100	7165	550	324	R8	NEMA12 IP55	JJS-400	170M5810
K03562A20	ACS880-01-246A-3+B056	380-415	NA	132	234	3300	11260					NA	170M5812
K03562A21	ACS880-01-293A-3+B056	380-415	NA	160	278	3900	13307					NA	170M6812D
K03553A16	ACS880-01-240A-5+B056	380-500	200	132	240	3300	11260					JJS-350	170M5811
K03555A14	ACS880-01-142A-7+B056	525-690	150	110	144	3300	11260					JJS-250	170M5810
K03555A15	ACS880-01-174A-7+B056	525-690	200	132	180	3900	13307					JJS-300	170M5810

- 1- Nominal Power Rating at listed voltage rating
 2- Continuous base current with 10% overload for 1 min/5 minutes

Power Cabling Schematic



- General Notes:**
 1-360 Grounded terminations are required
 2-Ultra-rapid fuses are required to protect drive
 Operating time must be less than 0.5 sec.
 Refer to Technical Data section for details

Frame Size	Terminals T1/U, T2/V, T3/W, L1, L2, L3				Earthing PE Terminal			
	Wire Size AWG (mm ²)	Screw	Torque		Max. Wire Size AWG (mm ²)	Screw	Torque	
			N-m	Lb-ft			N-m	Lb-ft
R8	2 x (1/0...300 MCM) (2 x (50...150))	M10	40	29.5	2 x 350 MCM (2 x 185)	M10	9.8	7.2

PumpSmart® PS220

Drive Hardware: ABB ACS880-01

CERTIFICATIONS

600VAC and Below
UL Listed
Canadian UL Listed

INPUT POWER

Voltage.....208...690 VAC 3 Phase $\pm 10\%$
Overload.....110% for 1min/5 min,
140-150% for 10 sec at startup
Frequency.....48...63Hz
Fundamental Power..... $\text{Cos}\Phi_1=0.98$ (fundamental)
Factor($\text{Cos}\Phi_1$) $\text{Cos}\Phi_1=0.93...95$ (total)
Efficiency.....98% (at nominal power)

MOTOR CONNECTION

Voltage.....0 to U1, 3-Phase Symmetrical,
Umax at the field weakening point
Frequency.....0...500Hz
Field Weakening Point.....5...500Hz
Switching Frequency2.7KHz
(average)
Short Circuit Withstand Rating.....
.....100,000AIC(UL) R1-R9
when protected by fuses given
in the hardware manual.
ConnectionU2, V2, W2

ENVIRONMENTAL LIMITS

Enclosures.....NEMA12/IP55
Temperature.....5...131°F(-15to55°C)Standard
104...131°F(40-50C) with
de-rating (1%/1C)
Humidity.....5...95% Relative Humidity
Altitude.....0..3300 Ft(0-1000M) Standard
3300..13,123Ft (1000..4000M) with
de-rating (1%/100M)
Vibration.....Max.1mm(0.04 in.) 5-13.2 Hz
Max.7 m/s² (23ft/s²) 13.2-100
HZ,Sinusoidal
Shock, Free Fall.....Not Allowed

ANALOG INPUTS

Two (2) Programmable Differential Inputs
Two (2) Current or Voltage Signals.....0(4) to 20 mA, Input Resistance
RI => 100 ohms or
-10Vdc /0(2) to+10Vdc,
Input Resistance RI=> 200 Kohms
Common Mode Voltage.....+/-15Vdc,max.
Common Mode Rejection Ratio.....> 60dB at 50Hz
Resolution.....0.025% (12bit) (11 bit+Sign bit)
Accuracy.....+/-0.5% of full Scale Range
Input Updating Time.....1 ms (Primary Control Program)
Optional Isolation.....Available through optional external
module

ANALOG OUTPUTS

Two (2) Programmable Current Outputs
Signal Level.....0(4) to 20mA
Resolution.....0.025% (12bit) (11 bit+Sign bit)
Accuracy.....+/-1% of Full Scale Range
Maximum Load Impedance.....500 ohms
Output Updating Time.....1 ms (primary Control Program)
Frequency Range.....0-300Hz

DIGITAL INPUTS

Six(6) Programmable Digital Inputs(Common Grounds), plus One(1)
Start Interlock
Isolation.....Isolated
Isolation Test Voltage.....500VAC, 1 minute
Input Type.....NPN/PNP (DI1....D15), NPN (D16)
Signal Level.....24Vdc
Rin.....2.0 kOhms
Logical switch thresholds.....<5Vdc at "0",>15Vdc at "1"
Input Current.....15mA, Digital Input 1 to Digital Input
5, 5mA Digital Input 6
Filtering Time Constant.....Hardware Filter .04ms.
Input Updating Time.....Digital Filtering up to 8ms.(Primary
Control Program)
Internal 24Vdc Supply for Digital Inputs
Voltage.....24Vdc
Maximum Current.....200mA
Connector.....XD24.2 and XD24.4
Protection.....Short Circuit Proof
An external 24 Vdc supply may be used instead of the Internal
supply

DIGITAL INPUTS/OUTPUTS

Two(2) programmable Digital Inputs/Outputs
Isolation.....Isolated
Input Configuration.....DIO1 frequency input(0...16KHz
with 4 microsecond hardware filtering)
Output Configuration.....DIO2 frequency output(0...16KHz
with 4 microsecond hardware filtering)
Signal Level.....24Vdc
Rin.....2.0Kohm
Logical Input switch thresholds...<5Vdc at "0",>15Vdc at "1"
Filtering Time Constant.....0.25ms
As output.....Total output current from
+24VD is limited to 200ma.

RELAY OUTPUTS

Three Programmable Relay Outputs
Switching Capacity.....2 A at 30Vdc or 250Vac
Maximum Continuous Current.....IC=2 Amps RMS
ProtectionVaristors (250V)
Output Updating Time.....1 ms (Primary Control
Program)

REFERENCE POWER SUPPLY

Voltage.....+10Vdc,0,-10Vdc+/-0.5% at
25°C (77°F)
Maximum Load.....10mA
Applicable Potentiometer..1 k-ohm to 10 k-ohm

FIELD BUS

CommunicationModbus, Profibus DP
Modules..... Ethernet, DeviceNet