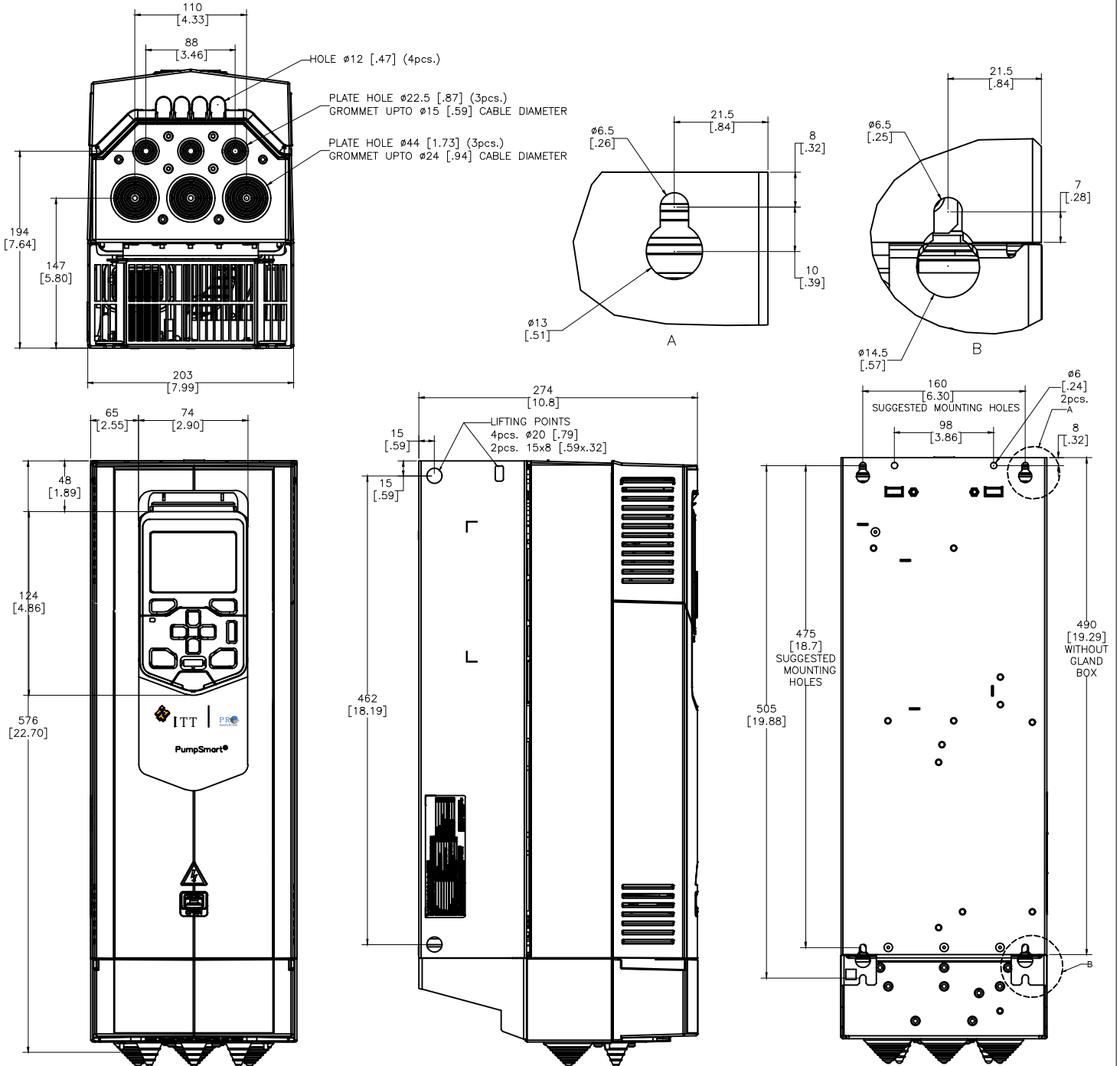


PumpSmart PS220 pump and motor Control System

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]
R4	580 [22.85]	203 [7.99]	274 [10.79]	18.6 [41]

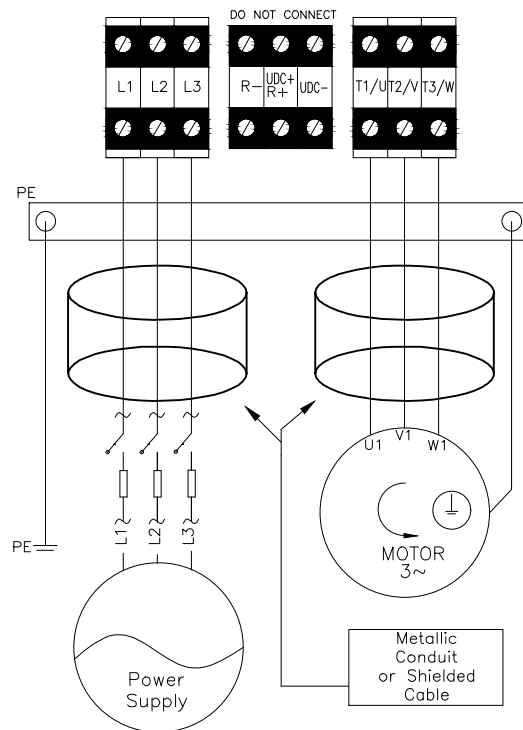
* DIMENSIONS NOT FOR CONSTRUCTION

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(A) Bussmann	IEC Type Bussmann
K03550A08	ACS880-01-046A-2	208-240	15	11	44	500	1706	134	79	R4	NEMA 1 IP21	JJS-80	170M1566
K03550A09	ACS880-01-061A-2	208-240	20	15	58	630	2150	280	165			JJS-100	170M1568
K03561A12	ACS880-01-045A-3	380-415	NA	22	43	667	2276	134	79			NA	170M1566
K03561A13	ACS880-01-061A-3	380-415	NA	30	58	907	3095	280	165			NA	170M1567
K03552A08	ACS880-01-040A-5	380-500	30	22	40	667	2276	134	79			JJS-60	170M1566
K03552A09	ACS880-01-052A-5	380-500	40	30	52	907	3095	280	165			JJS-80	170M1567

- 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
R4	20...2 (0.5...35)	-	3.3	2.4	4 (25)	-	2.9	2.1

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..... $\cos\phi_1=0.98$ (fundamental)
Factor($\cos\phi_1$) $\cos\phi_1=0.93...95$ (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.....NEMA 1/IP21
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