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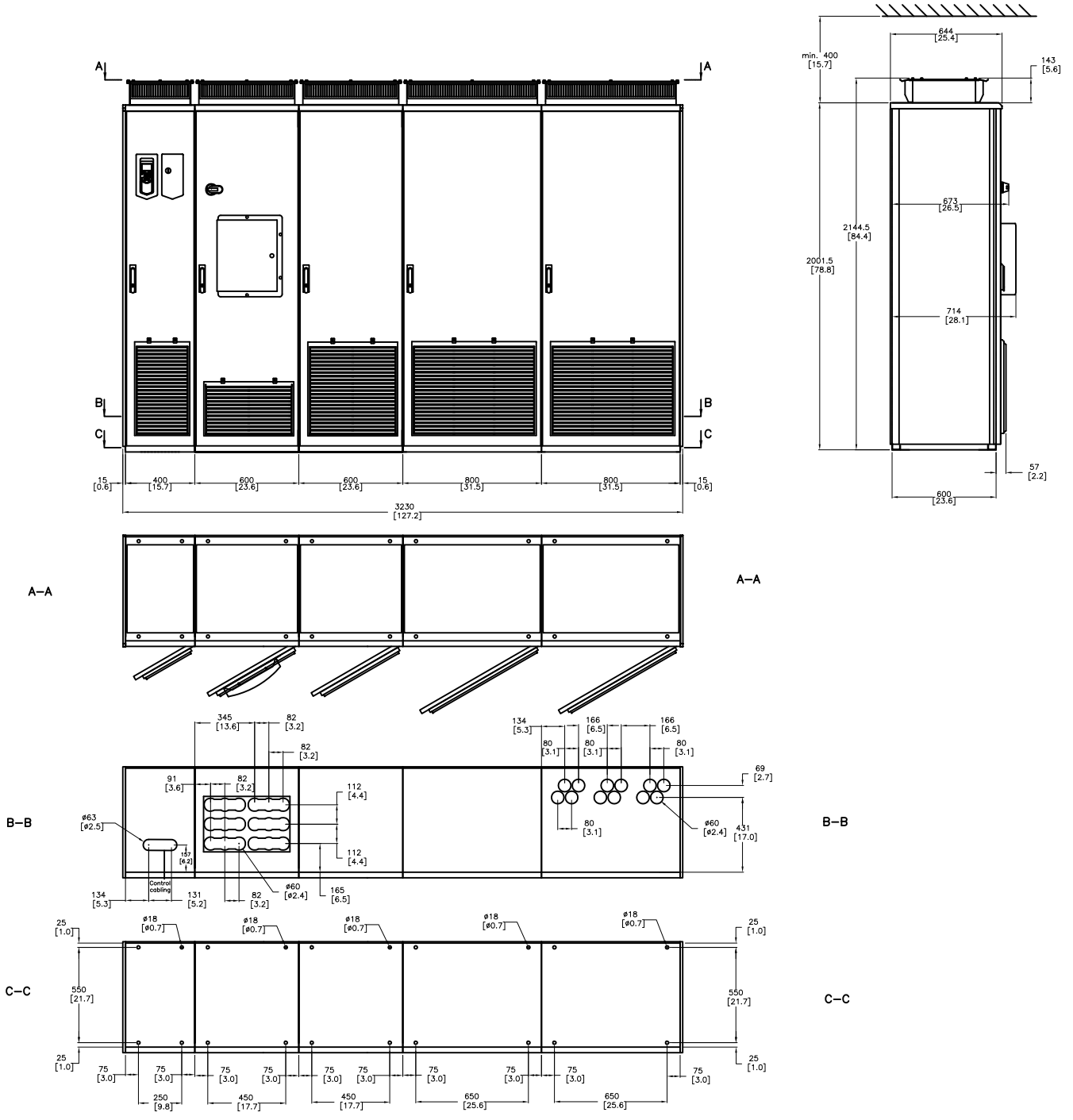
PRO services

Pumpsmart® PS220
Drive Dimensions and Ratings
Frame 3xR8i + 3xR8i-NEMA1/ IP22
ACS880-37 ULH

PumpSmart®

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]
3xR8i + 3xR8i	2145 [84.45]	3230 [127.17]	714 [28.11]	3280 [7231]

* DIMENSIONS NOT FOR CONSTRUCTION

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Dimensions in mm(Inches)

Issue:

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Drawing K07332A

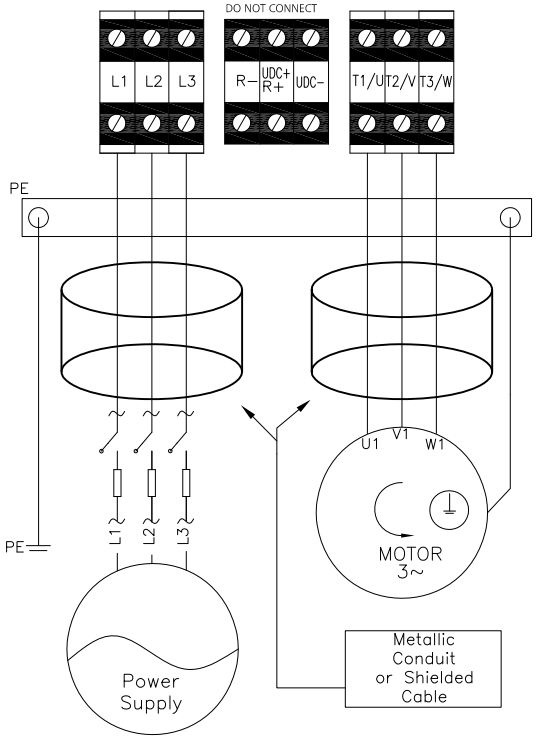
Revision 0

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
K03566A08	ACS880-37-2060A-3+X1556	380 – 415	NA	1200	1978	61000	208141	11580	6815	3xR8i + 3xR8i	NEMA 1 IP22	170M7062	170M7062
K03568A07	ACS880-37-1980A-5+C129+X1556	440 – 500	1750	1400	1901	59000	201316					170M7062	170M7062
K03568A08	ACS880-37-2270A-5+C129+X1556	440 – 500	2000	1600	2179	69000	235438					170M7062	170M7062
K03570A08	ACS880-37-1450A-7+C129+X1556	525 – 600	1500	1400	1392	63000	214965					170M7063	170M7063

1– Nominal Power Rating at listed voltage rating
2– Contiunous 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
3xR8i + 3xR8i	SEE ACS880–37 HARDWARE MANUAL							

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PumpSmart® PS220

Drive Hardware: ABB ACS880−37 ULH

CERTIFICATIONS

600VAC and Below
UL Listed
Canadian UL Listed

INPUT POWER

Voltage.....208...690 VAC 3 Phase ±10%
Overload.....110% for 1min/5 min,
140−150% for 10 sec at startup
Frequency.....48...63Hz
Fundamental Power.....CosΦ_1=0.98 (fundamental)
Factor(CosΦ_1) .....CosΦ_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 Frequency 2.7KHz
(average)
Short Circuit Withstand Rating.....
.....100,000AIC(UL) R1−R9
when protected by fuses given
in the hardware manual.
Connection U2, V2, W2

ENVIRONMENTAL LIMITS

Enclosures.....NEMA 1/IP22

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/s^2 (23ft/s^2) 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
Protection .....Varistors (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

FIELDBUS

Communication Modules..... Modbus, Profibus DP
Ethernet, DeviceNet

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