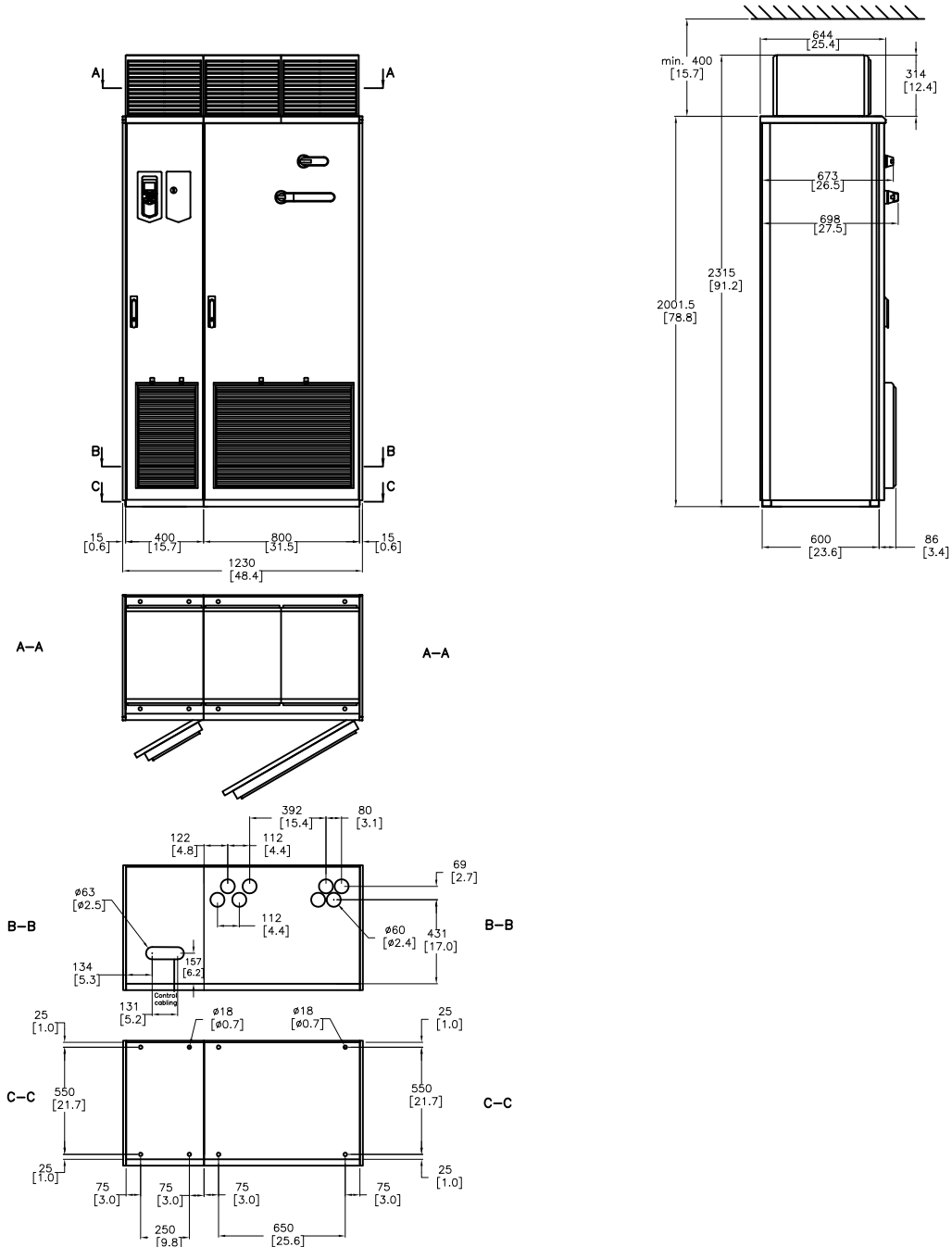


PumpSmart PS220 pump and motor Control System

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]
1xR8i + 1xR8i	2315 [91.20]	1230 [48.42]	698 [27.48]	1180 [2602]

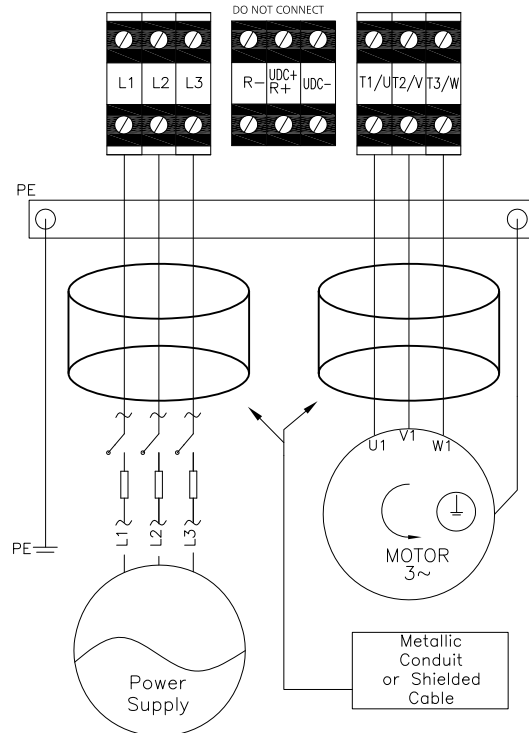
\* DIMENSIONS NOT FOR CONSTRUCTION

Drive Ratings

ITT P/N	ABB P/N	Input Voltage (VAC)	Power <sup>1</sup>		Rated Current <sup>2</sup> (A)	Heat Dissipation		Air Flow		Frame	Enclosure Rating	Recommended Main Fuses	
			HP	kW		Watts	BTU/hr	m <sup>3</sup> /hr	CFM			UL Type Bussmann	IEC Type Bussmann
K03567A01	ACS880-37-0450A-3+X1556	380 - 415	NA	250	432	14000	47770	3760	2215	1xR8i + 1xR8i	NEMA 12 IP54	170M6411	170M6411
K03567A02	ACS880-37-0620A-3+X1556	380 - 415	NA	355	595	18000	61419					170M6413	170M6413
K03567A03	ACS880-37-0870A-3+X1556	380 - 415	NA	500	835	27000	92128					170M6416	170M6416
K03569A01	ACS880-37-0420A-5+C129+X1556	440 - 500	350	250	403	13000	44358					170M6411	170M6411
K03569A02	ACS880-37-0570A-5+C129+X1556	440 - 500	500	400	547	17000	58006					170M6413	170M6413
K03569A03	ACS880-37-0780A-5+C129+X1556	440 - 500	700	560	749	25000	85304					170M6416	170M6416
K03565A01	ACS880-37-0320A-7+C129+X1556	525 - 600	350	315	307	16000	54594					170M6408	170M6408
K03565A02	ACS880-37-0390A-7+C129+X1556	525 - 600	400	355	374	19000	64831					170M6410	170M6410
K03565A03	ACS880-37-0580A-7+C129+X1556	525 - 600	600	560	557	26000	88716					170M6413	170M6413

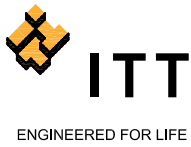
- 1- Nominal Power Rating at listed voltage rating
- 2- Continuous base current with 10% overload for 1 min/5 minutes

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 <sup>2</sup> )	Screw	Torque		Max. Wire Size AWG (mm <sup>2</sup> )	Screw	Torque	
			N-m	Lb-ft			N-m	Lb-ft
1xR8i + 1xR8i	SEE ACS880-37 HARDWARE MANUAL							



PumpSmart® PS220  
Drive Dimensions and Ratings  
Frame 1xR8i + 1xR8i-NEMA12/ IP54  
ACS880-37 ULH

PumpSmart®

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<sub>1</sub>=0.98 (fundamental)  
Factor(CosΦ<sub>1</sub>) .....CosΦ<sub>1</sub>=0.93...95 (total)  
Efficiency.....98% (at nominal power)

MOTOR CONNECTION

Voltage.....0 to U1, 3-Phase Symmetrical,  
U<sub>max</sub> 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 12/IP54  
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<sup>2</sup> (23ft/s<sup>2</sup>) 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  
R<sub>I</sub> => 100 ohms or  
-10Vdc /0(2) to+10Vdc,  
Input Resistance R<sub>I</sub> => 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  
R<sub>in</sub>.....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.....DI01 frequency input(0...16KHz  
with 4 microsecond hardware filtering)  
Output Configuration.....DI02 frequency output(0...16KHz  
with 4 microsecond hardware filtering)  
Signal Level.....24Vdc  
R<sub>in</sub>.....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.....I<sub>C</sub>=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 Modbus, Profibus DP  
Modules..... Ethernet, DeviceNet

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			Checked: XXX XX-XX-XX			