

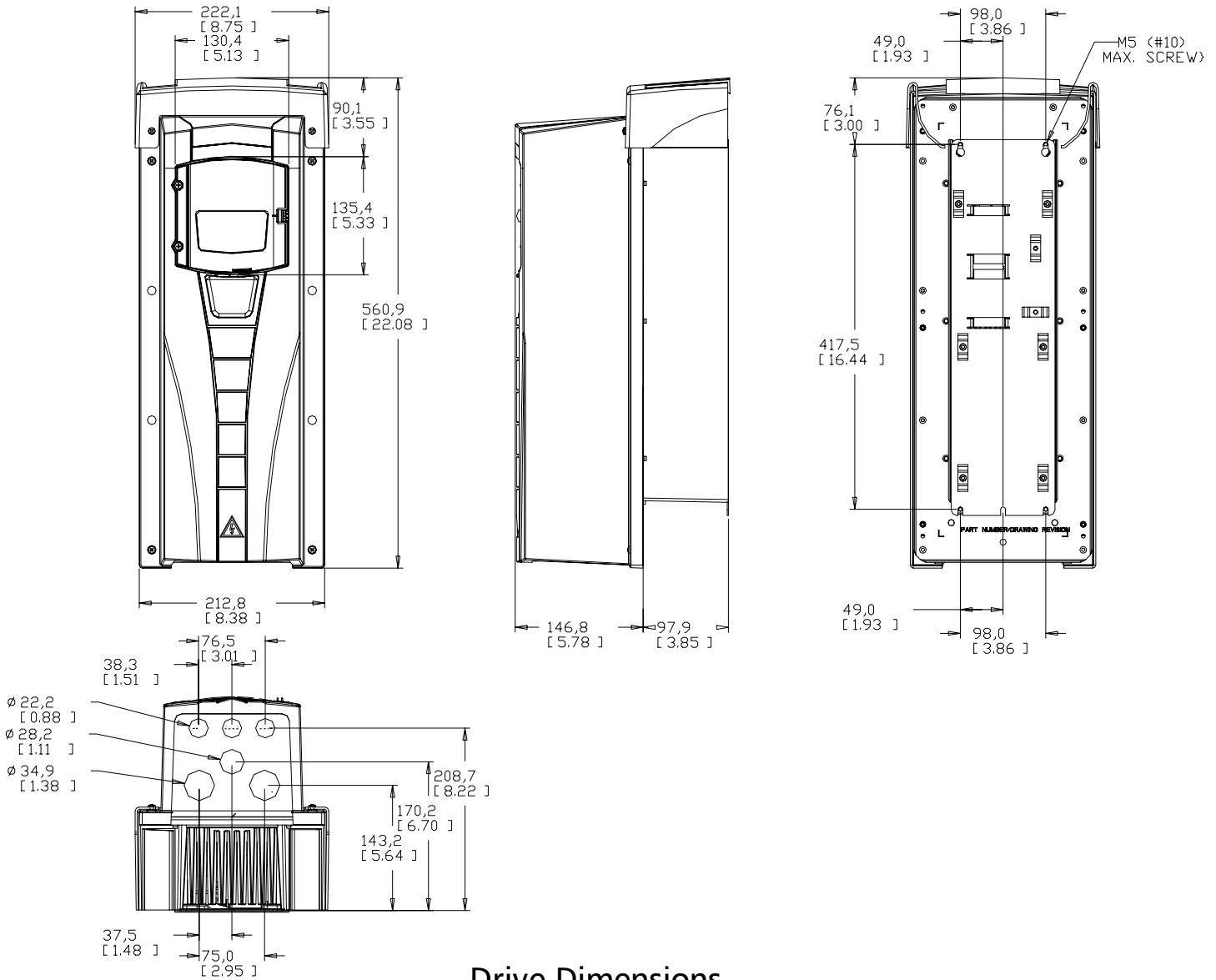


# PumpSmart PS75 Drive Dimensions and Ratings Frame R2-NEMA12/IP54

# PUMPSMART

## PumpSmart PS75 Pump and Motor Control System

The PumpSmart PS75 is a pump and motor control system that provides integral starting, right-sizing, pump protection and process control for all pumping applications. The PumpSmart PS75 is based upon the ABB ACS 550 variable frequency drive. PumpSmart Control Solutions has worked with ABB to incorporate proprietary pump protection & 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 [lbm]
R2	560.9 [22.08]	222.1 [8.75]	244.7 [9.63]	11.2 [24.7]

\*Dimensions not for construction



# PumpSmart PS75 Drive Dimensions and Ratings Frame R2-NEMA12/IP54

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## Drive Ratings

ITT P/N	Input Voltage VAC	Power P <sup>N1</sup>		Nominal Current I <sup>N2</sup> Amps	Heat Dissipation		Air Flow		Frame	Enclosure Rating	Recommended Main Fuses		
		KW	HP		Watts	BTU/hr	M <sup>3</sup> /hr	CFM			IEC269gG (A)	UL class T (A)	Bussmann Type
A08303A06	230	5.5	7.5	24.2	227	776	88	52	R2	NEMA12 / IP54	25	30	JJS - 30
A08303A07	230	7.5	10	30.8	285	973					40	40	JJS - 40
A08305A06	380* / 460	7.5*	10	15.4	232	792					16	20	JJS - 20
A08305A07	380* / 460	11*	15	23	337	1150					25	30	JJS - 30
A08439A01	575	1.5	2	2.7	46	157					10	10	JJS - 10
A08439A02	575	2.2	3	3.9	68	232					10	10	JJS - 10
A08439A03	575	4	5	6.1	124	423					10	10	JJS - 10
A08439A04	575	5.5	7.5	9	170	581					16	15	JJS - 15
A08439A05	575	7.5	10	11	232	792					16	15	JJS - 15
A08439A06	575	11	15	17	337	1150					25	25	JJS - 25

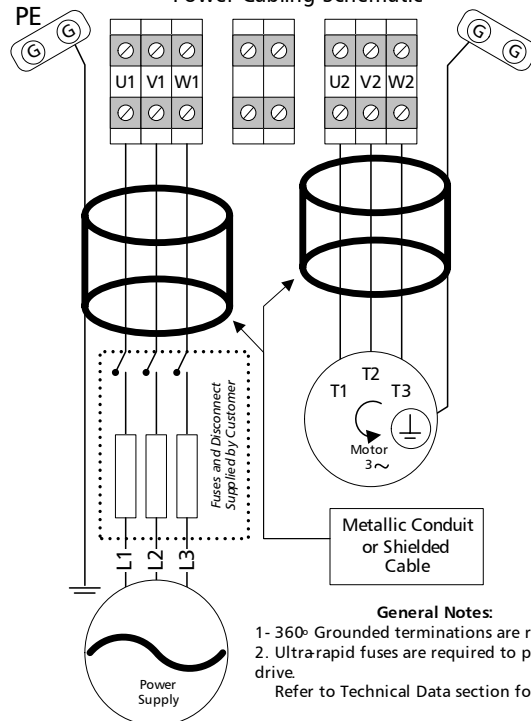
**Notes**

<sup>1</sup> P<sup>N</sup> - Nominal Power Rating at listed voltage rating

<sup>2</sup> I<sup>N</sup> - Continuous base current with 10% overload for 1 min / 10 minutes

\*-KW rating applies to drives with 380VAC input voltage





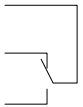
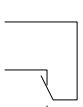
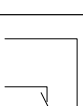
**Power Cabling Schematic**



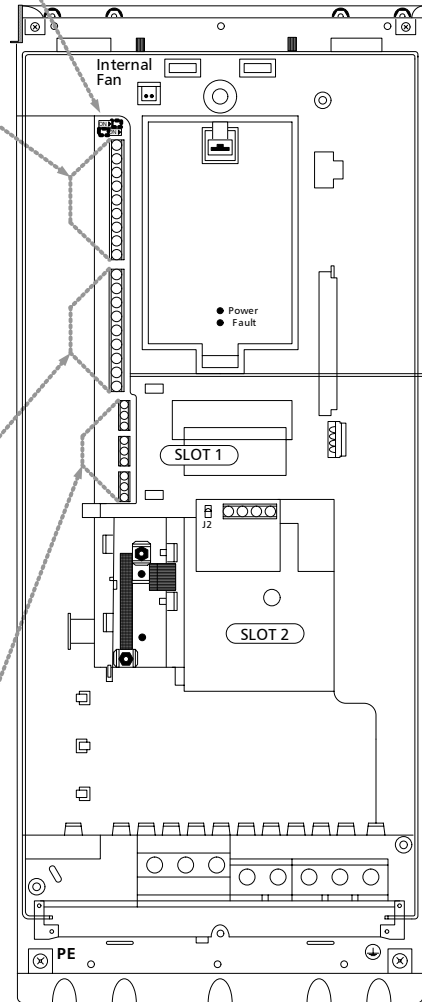
Frame Size	U1/V1/W1 – U2/V2/W2 BRK±, UDC± Terminals						Earthing PE Terminal			
	Min. Wire Size		Max. Wire Size		Torque		Max. Wire Size		Torque	
	mm <sup>2</sup>	AWG	mm <sup>2</sup>	AWG	Nm	Lb-ft	mm <sup>2</sup>	AWG	Nm	Lb-ft
R2 <sup>1</sup>	0.75	18	16	6	1.3	1	16	6	1.3	1

1. Do not use aluminum cable with frame size R1... R 4

PS75 Drive Terminal Block Schematic

	X1	Terminal Block	
1	SCR	Signal cable shield connected internally to chassis ground	Analog I/O
2	AI1 (+)	Analog Input 1, Programmable External Setpoint J1:AI1 off 2..10VDC  default J1:AI1 on 4..20mA 	
3	AGND (-)	Analog Input 1 Ground	
4	+10V	AI Reference Voltage : 10V ± 2%, 10mA max used for AI 1 2-10VDC signals 1K ohm ≤ R ≤10K ohm	
5	AI2 (+)	Analog Input 2, Programmable Primary Process Transmitter J1:AI2 off 2..10VDC  default J1:AI2 on 4..20mA  (Process Control Only)	
6	AGND (-)	Analog Input 2 Ground	
7	AO1 (+)	Analog Output 1, programmable 4-20mA Output assigned in parameter 1501. Default is speed	
8	AO2 (+)	Analog Output 2, programmable 4-20mA Output assigned in parameter 1507. Default is current	
9	AGND (-)	Analog Output Ground	
10	+24VDC	Process Transmitter / DI power source 24VDC / 250mA (reference to GND ) Used if PumpSmart is powering the process transmitter and / or digital inputs	
11	GND		
12	DCOM		
13	DI 1	2 - Wire Start / Stop Change parameter 1002 to 2W DI 1 (1). Default is Keypad Start/Stop	Digital I/O and Auxiliary Power
14	DI 2	Used with 3- Wire Start / Stop	
15	DI 3	Speed Control - Constant speed selection Process Control - Selects PID Se#	
16	DI 4	Speed Control - Constant speed selection Process Control - Programmable Digital Input Not Used	
17	DI 5	Fault Reset Input assigned in parameter 1604	
18	DI 6	Run Enable Input assigned in parameter 1601	
19	RO1C COM	 Assignable Relay (RO1) The output of this relay is assignable by parameter 1401 Default: Ready (19 and 21 connected)	Relay Outputs
20	RO1 NC		
21	RO1 NO		
22	RO2C COM	 Assignable Relay (RO2) The output of this relay is assignable by parameter 1402 Default: Run (22 and 24 connected)	
23	RO2 NC		
24	RO2 NO		
25	RO3C COM	 Assignable Relay (RO3) The output of this relay is assignable by parameter 1403 Default: Fault (25 and 27 connected)	
26	RO3 NC		
27	RO3 NO		

J1  
Dip switches  
for Analog  
Inputs



View of I/O Connection board (OMIO)

ACH 550



**PumpSmart PS75**  
**Drive Dimensions and Ratings**  
**Frame R2-NEMA12/IP54**

**PUMPSMART**

**PumpSmart® PS75**

Hardware: ABB ACH550 Drive

**CERTIFICATIONS**

UL Listed  
 Canadian UL Listed

CE Marked

**INPUT POWER**

Voltage..... 208..240 VAC 1P and 3P +10%/-15%  
 380...480 VAC 3 Phase +10%/-15%  
 500..600 VAC 3 Phase +10% / -15%

Imbalance..... Max +- 3% of Nominal Phase to Phase  
 Input Voltage

Frequency..... 48..63 Hz

Fundamental Power..... 0.98  
 Factor (cos Ø1)

**MOTOR CONNECTION**

Voltage..... 0 to Usupply

Frequency..... 0-500 Hz

Overload Capacity.... Normal Use 1.1 x Rated Current  
 for 1 min every 10 min

Switching Frequency.... Default 4kHz, Selectable 1,4,8 and  
 12 kHz 1-150 hp (.75-110 kW),  
 Selectable 1,4 and 8 kHz 150-550 hp  
 (110-355 kW)

Motor Control..... Sensorless Vector Control

Speed Control..... Static Accuracy 20% of motor nominal  
 slip

Drive Nominal Output ... 6:1 Maximum

Current..... Motor nominal Current

**ENVIRONMENTAL LIMITS**

Enclosures ..... NEMA Type 1/IP21  
 NEMA TYPE 12/IP54 (U1/01 Only)

Temperature..... 5...104F (-15..40C) No frost Allowed

Humidity..... <95% Relative Humidity,  
 Non-condensing

Altitude..... 0..3300 Ft (0..1000M) Standard

Shock..... Not Allowed

Free Fall..... Not Allowed

Vibration..... 5-13.2 Hz 1mm (.04 in)

**STANDARD INPUT/OUTPUT**

2 Analog Inputs..... (0) 4...20mA, Rin>100 ohm single-ended or  
 (0) 2..10VDC, Rin>312k ohm single-ended,  
 resolution 0.1%, accuracy +-1%. Default: AI1  
 Voltage, AI2 Current Configurable

2 Analog Outputs..... (0) 4...20mA, Load < 500 ohm, Configurable

Auxiliary Voltage..... 24 VDC +- 10%, max. 250 mA

Digital Inputs (6)..... 12V...24VDC with internal or external supply,input  
 impedance 1.5 kohm Common Configurations:  
 2-Wire Start/Stop, 3-Wire Start/Stop,Hand-off-Auto  
 Dual Setpoints, Secondary Protect A, Secondary  
 Protect B, Run Enable, E-Stop, Fault Reset, Constant  
 Speed Select PID Set Activation

Relay Outputs (3).. ..... Form-C Switchover Contact Max Switching Voltage  
 Configurable 250VAC / 30VDC Max Switching Current 6A / 30VDC  
 1500VA/250VAC 2A rms max continuous current  
 Min Load:500mW (12V,10mA)

Reference Voltage 10 VDC ± 2%  
 10mA max current R <10 Kohm

**DRIVE PROTECTION**

Keypad Loss	Wiring Fault
Earth Fault	Over Current
Over Voltage	Drive Overtemp
Under Voltage	Phase Loss
Motor Temp	Short Circuit
Drive Overload	Communication Failure
Run Enable	

**PUMP PROTECTION**

Closed Valve	Runout Flow
Loss of Suction/Dry Run	Sensor Failure
Low Flow	Critical Speed (Speed Control)

**FIELD BUS**

Modbus (built-in std)	ControlNet
DeviceNet	Profibus-DP
EtherNet	

Certified for Construction Purposes only when signed    Date.....	Customer Name.....  Goulds S/N.....  Customer P.O #.....  Item No.....
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