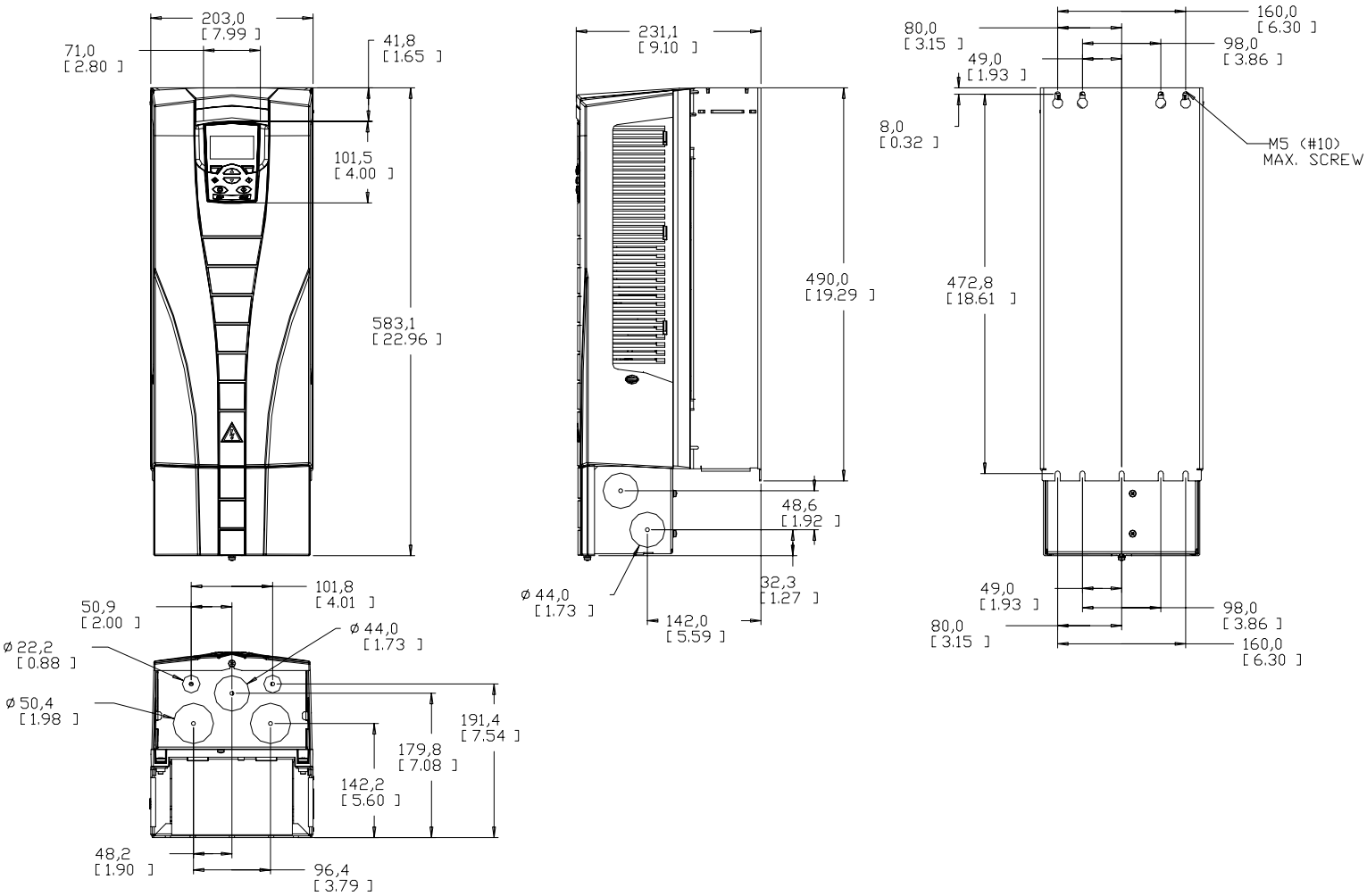
ITT	PumpSmart PS75 Drive Dimensions and Ratings Frame R3-NEMA1/IP21	**PUMP**SMART

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]
R3	583 [23]	203 [8.0]	231 [9.1]	16 [35]

*Dimensions not for construction

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PumpSmart PS75
Drive Dimensions and Ratings
Frame R3-NEMA1/IP21

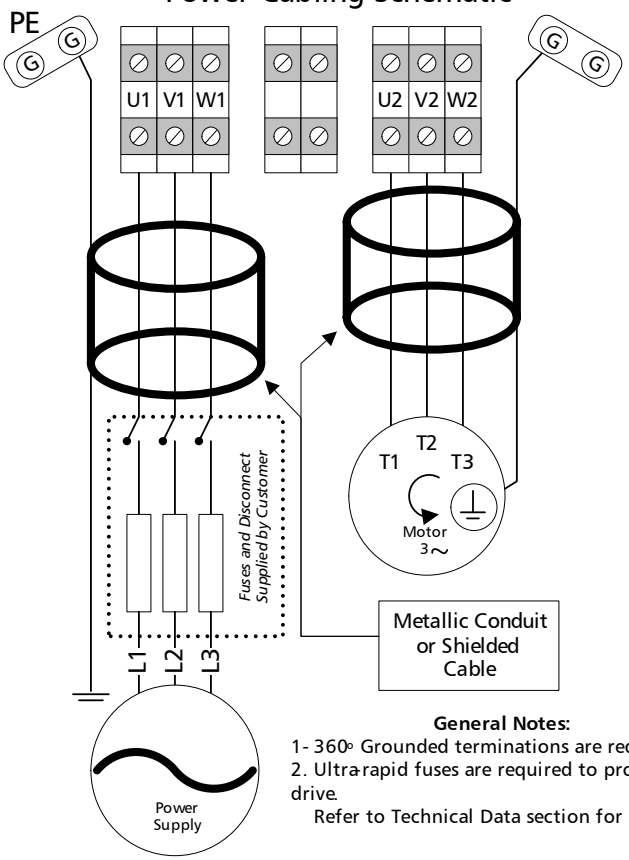
PUMPSMART

Drive Ratings

ITT P/N	Input Voltage VAC	Power P_{N}[1]		Nominal Current I_{2N}[2] Amps	Heat Dissipation		Air Flow		Frame	Enclosure Rating	Recommended Main Fuses		
		KW	HP		Watts	BTU/hr	M^3/hr	CFM			IEC269gG (A)	UL class T (A)	Bussmann Type
A08300A08	230	11	15	46.2	420	1434	134	79	R3	NEMA1/IP21	63	60	JJS-60
A08300A09	230	15	20	59.4	536	1829					63	80	JJS-80
A08302A08	380* / 460	15*	20	31	457	1560					35	40	JJS- 40
A08302A09	380* / 460	18.5*	25	38	562	1918					50	50	JJS- 50
A08302A27	380 * /460	22	30	44	667	2276					50	60	JJS-60
A08438A07	575	15	20	22	457	1560					25	25	JJS-25
A08438A08	575	18.5	25	27	562	1918					35	40	JJS-40

Notes
[1] P_N - Nominal Power Rating at listed voltage rating
[2] I_{2N} - Continuous base current with 10% overload for 1 min / 10 minutes
*- KW rating applies to drives with 380 VAC input voltage

Power Cabling Schematic



General Notes:
1- 360° Grounded terminations are required
2. Ultra-rapid fuses are required to protect drive.
Refer to Technical Data section for details

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	
	mm²	AWG	mm²	AWG	Nm	Lb-ft	mm²	AWG	Nm	Lb-ft
R3[1]	2.5	14	25	3	2.7	2	25	3	2.7	2

1 . Do not use aluminum cable with frame size R1...R4

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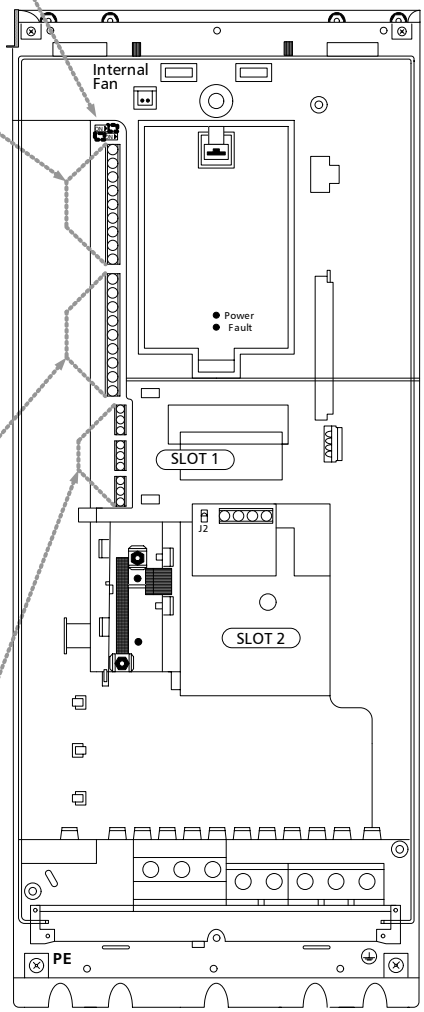
PS75 Drive Terminal Block Schematic

	X1	Terminal Block			
1	SCR	Signal cable shield connected internally to chassis ground			Analog I/O
2	AI1 (+)	OPTION	Analog Input 1, Programmable External Setpoint J1:AI1 off 2..10VDC default J1:AI1 on 4..20mA		Analog I/O
3	AGND (-)	Analog Input 1 Ground			Analog I/O
4	+10V	AI Reference Voltage : 10V ± 2%, 10mA max used for AI 1 2-10VDC signals 1K ohm ≤ R ≤10K ohm			Analog I/O
5	AI2 (+)	OPTION	Analog Input 2, Programmable Primary Process Transmitter J1:AI2 off 2..10VDC J1:AI2 on 4..20mA default (Process Control Only)		Analog I/O
6	AGND (-)	Analog Input 2 Ground			Analog I/O
7	AO1 (+)	OPTION	Analog Output 1, programmable 4-20mA Output assigned in parameter 1501. Default is speed		Analog I/O
8	AO2 (+)	OPTION	Analog Output 2, programmable 4-20mA Output assigned in parameter 1507. Default is current		Analog I/O
9	AGND (-)	Analog Output Ground			Analog I/O
10	+24VDC	Process Transmitter / DI power source 24VDC / 250mA (reference to GND) Used if PumpSmart is powering the process transmitter and / or digital inputs			Digital I/O and Auxiliary Power
11	GND				Digital I/O and Auxiliary Power
12	DCOM				Digital I/O and Auxiliary Power
13	DI 1	OPTION	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	OPTION	Used with 3- Wire Start / Stop		Digital I/O and Auxiliary Power
15	DI 3	OPTION	Speed Control - Constant speed selection Process Control - Selects PID Set2		Digital I/O and Auxiliary Power
16	DI 4	OPTION	Speed Control - Constant speed selection Process Control - Programmable Digital Input Not Used		Digital I/O and Auxiliary Power
17	DI 5	OPTION	Fault Reset Input assigned in parameter 1604		Digital I/O and Auxiliary Power
18	DI 6	OPTION	Run Enable Input assigned in parameter 1601		Digital I/O and Auxiliary Power
19	RO1C COM	OPTION		Assignable Relay (RO1) The output of this relay is assignable by parameter 1401 Default: Ready (19 and 21 connected)	Relay Outputs
20	RO1 NC	OPTION			Relay Outputs
21	RO1 NO	OPTION			Relay Outputs
22	RO2C COM	OPTION		Assignable Relay (RO2) The output of this relay is assignable by parameter 1402 Default: Run (22 and 24 connected)	Relay Outputs
23	RO2 NC	OPTION			Relay Outputs
24	RO2 NO	OPTION			Relay Outputs
25	RO3C COM	OPTION		Assignable Relay (RO3) The output of this relay is assignable by parameter 1403 Default: Fault (25 and 27 connected)	Relay Outputs
26	RO3 NC	OPTION			Relay Outputs
27	RO3 NO	OPTION			Relay Outputs

J1
Dip switches
for Analog
Inputs



View of I/O Connection board (OMIO)

ACH 550

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…….. Factor (cos Ø1)	0.98

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).. ……. *Configurable*	Form-C Switchover Contact Max Switching Voltage 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)

FIELDBUS

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……