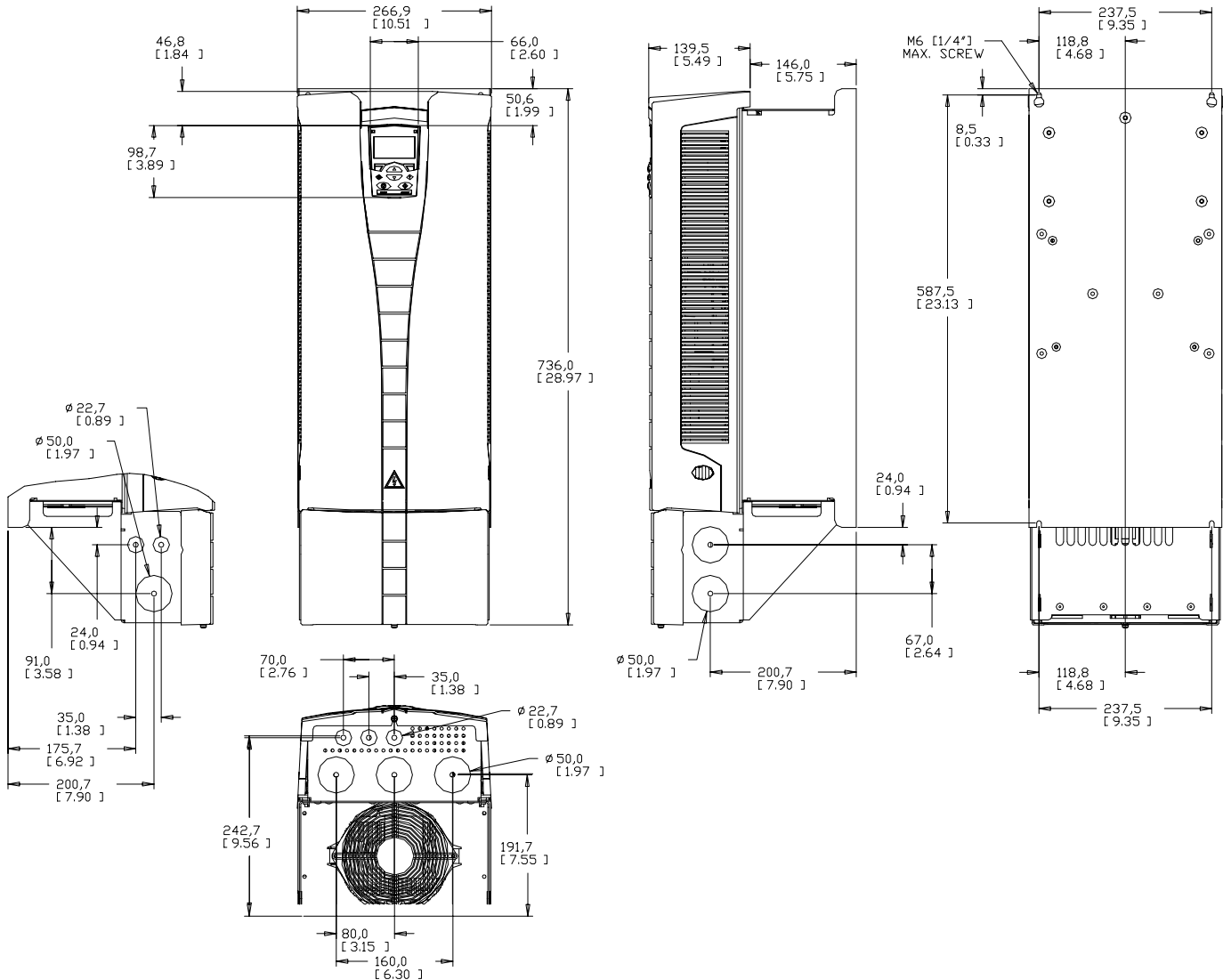


PumpSmart PS75 Pump and Motor Control System

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] |
|-------|--------------------------|-------------------------|-------------------------|-----------------------|
| R5 | 739 [29.1] | 267 [10.5] | 286 [11.3] | 34 [75] |

*Dimensions not for construction



PumpSmart PS75 Drive Dimensions and Ratings Frame R5-NEMA1/IP21

PUMPSMART

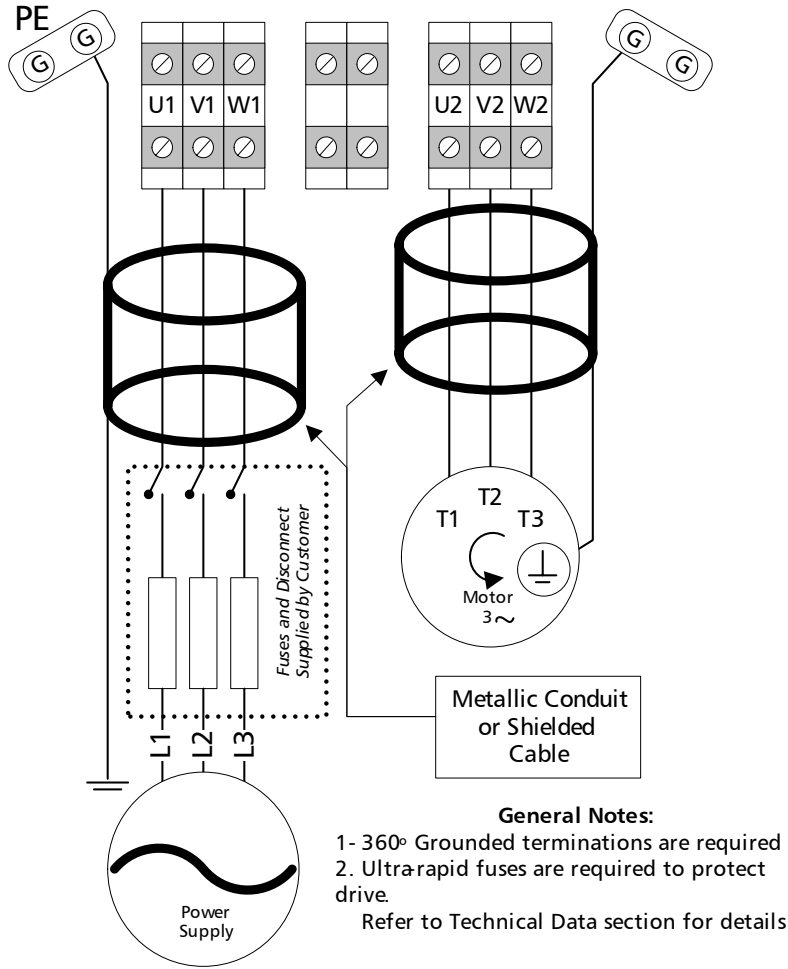
Drive Ratings

| ITT P/N | Input Voltage VAC | Power P ^{N1} | | Nominal Current I ^{2N2} 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 |
| A08302A29 | 380 * / 460 | 55 | 100 | 124 | 1940 | 6621 | 168 | 99 | R5 | NEMA1 /IP21 | 160 | 175 | JJS-175 |

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





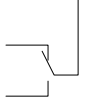

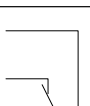


General Notes:

- 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 | |
| | mm ² | AWG | mm ² | AWG | Nm | Lb-ft | mm ² | AWG | Nm | Lb-ft |
| R5 | 16 | 6 | 70 | 2/0 | 15 | 11 | 70 | 2/0 | 15 | 11 |

PS75 Drive Terminal Block Schematic

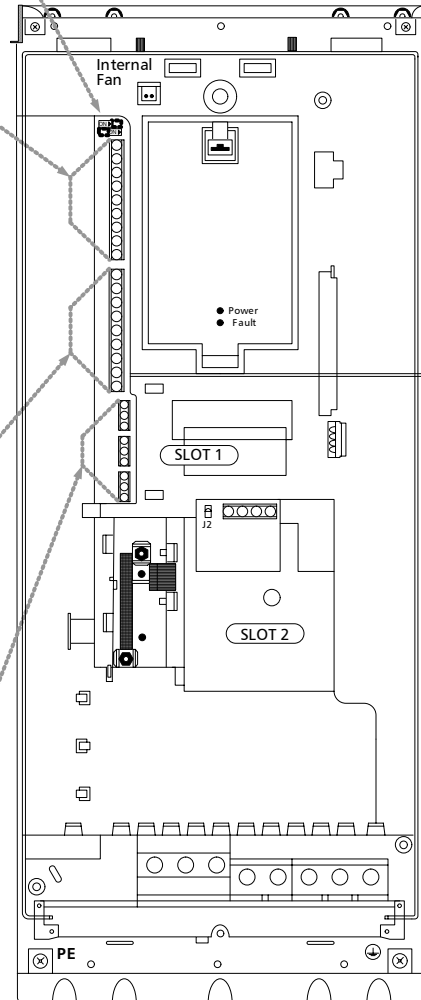
| | X1 | Terminal Block |
|----|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | SCR | Signal cable shield connected internally to chassis ground |
| 2 | AI1 (+) | OPTION 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 (+) | OPTION 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 (+) | OPTION Analog Output 1, programmable 4-20mA Output assigned in parameter 1501. Default is speed Analog Output 2, programmable 4-20mA Output assigned in parameter 1507. Default is current |
| 8 | AO2 (+) | |
| 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 | OPTION 2 - Wire Start / Stop Change parameter 1002 to 2W DI 1 (1). Default is Keypad Start/Stop Used with 3- Wire Start / Stop Speed Control - Constant speed selection Process Control - Selects PID Se# Speed Control - Constant speed selection Process Control - Programmable Digital Input Not Used Fault Reset Input assigned in parameter 1604 Run Enable Input assigned in parameter 1601 |
| 14 | DI 2 | |
| 15 | DI 3 | |
| 16 | DI 4 | |
| 17 | DI 5 | |
| 18 | DI 6 | |
| 19 | RO1C COM | OPTION  Assignable Relay (RO1) The output of this relay is assignable by parameter 1401 Default: Ready (19 and 21 connected) |
| 20 | RO1 NC | |
| 21 | RO1 NO | |
| 22 | RO2C COM | OPTION  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 | OPTION  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 | |

Analog I/O

Digital I/O and Auxiliary Power

Relay Outputs

J1
Dip switches
for Analog
Inputs



View of I/O Connection board (OMIO)

ACH 550



**PumpSmart PS75
Drive Dimensions and Ratings
Frame R5-NEMA1/IP21**

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 | |

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