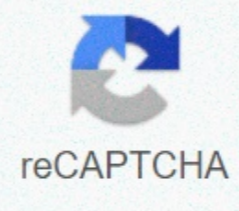




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Pentek intellidrive pid20 manual

This website or its third-party tools use cookies that are necessary for its function and are needed to achieve the goals shown in the cookie policy. If you want to know more or get your consent back to all or some cookies, please refer to the cookie policy. You agree to use cookies by closing this banner, scrolling this page, clicking a link, or continuing to browse otherwise. Description 4Inpoat Voltage Rating/Features 1-Phase 230VAC Nominal (190–265VAC)Input Frequency The time range is 50/60 Hz environment-4 to 122°F (-20°C to 50°C)Output connections 3-Phase, 3-Wire/1-Phase or 1-Phase/2-Length of WireMax Motor Cable 10 feet of enclosure Type 1 Table 1 - Specifications Model Max HPInput PhaseMotor OperationMax AmpsPID10 1.0 12-wire, 3-wire, 3-phase10.5PID20 2.0 13.5PID50 5.0 1 3-phase 18.0The PENTEK INTELLIDRIVE is specifically designed to operate 4 submersible pumps and 3-phase above ground pumps in water well and residential booster applications. Each drive is rated for maximum amp output points. Any use of the drive outside the intended design parameters warranty will be revoked. If the drive with higher ground engines is not used for a variable frequency drive of points, maximize movement life by limiting the length of the lead to 25 feet. Refer to the manual of the pump owner and the national electricity code for the appropriate wire size. Each carton includes:•• PENTEK INTELLIDRIVE Variable Frequency Drive••Persotor•Theransuser•10•Perstor•Portucer•• <2> <0>Cable••Quick•Start•Guide••Owner's•ManualPENTEK INTELLIDRIVE Model Number Structure Transducer; Installed in the direct pipe downstream of the tank, at least one foot away from the fittings of the pipe on each side. Gnd(3 phase only)PENTEK INTELLIDRIVE™GndFigure 1 - A typical residential installation layoutPIDXXProduct FamilyPID - PENTEK INTELLIDRIVEHP Range10 = up to 1.0 HP20 = up to 2.0 HP50 = up to 5.0 HPTThe PID10 and PID20 will operate a 1-phase 2-wire, 1 phase 3 wire, and 3 phase engine up to HP range of drive. The PID50 only runs a 3-phase engine up to 5 hp. Page 2Safety 2The safety guidelines of this directive - this manual contains important instructions that must be followed during the installation, operation, and maintenance of pentek intellidrive variable frequency drive (VFD). This is a symbol of safety alert. When you see this icon in your PENTEK INTELLIDRIVE or in this manual, follow one of the following signal words and alert the potential for personal injury! It represents a risk that, if avoided, will lead to death or serious injury. Suggests a risk that, if not avoided, can lead to death or serious injury. Shows a risk if not avoided, it can result in minor or moderate damage. Address attention is not related to 0 methods. Read carefully and follow all safety instructions in this manual and in PENTEK INTELLIDRIVE. Keep safety tags in good condition. Replace missing or damaged safety tags. High voltage electric shock risk from EMI/RFI filter inside the drive. It can shock, burn or kill if the front cover of PENTEK'S INTELLIDRIVE is open or removed while the power is connected to the drive or the drive is running. The front cover of the drive must be closed during operation.•• Make•all•wiring•connections,•thenen•close•and•fasten cover before turning on power to drive.•• Open the box when power is connected to Drive. •• before • service• or •ment• next to•d•or when connecting or disconnecting any wires inside the drive.1. Power outage.2. Wait 5 minutes for the voltage retained 0.3. Open box.•• Before•start•Ani• Wiring• or •Segi•, check the remaining voltage with voltage test.•• Never connect power wiring to the drive before installing the box.•• Never handle or service the drive with wet or wet hands. Always make sure the hands dry before working on the drive.•• never reach the cooling fan or change while the power is applied to the drive.•• Never touch the printed circuit plate when the power is applied to the drive. fire hazard . If installed with improper or inadequate circuit breaker protection, it can cause severe damage, property damage or death. To ensure protection in the event of an internal fault in PENTEK INTELLIDRIVE, install the drive on an independent branch circuit protected by the circuit breaker (see Table 2 for the size of the circuit breaker), without any other appliances in orbit. The risk of burns. The drive can get hot during normal operation. Let it cool for 50 minutes after shutdown and before touching it to prevent burns. Notice to avoid damage to the drive or problems with the drive.•• Connect•Pot•To•be•3 wires and 3 phases of indentable motors as follows:•• Red•To•R,•Yellow•be•Y,•Belk•To•B. Any other arrangement will reverse the movement rotation and may damage the engine.•• Connect•Pot•To•ba•2 1-phase wire of indentable engines as follows:•• Connect•to•Y•and•B•only. Connecting the earth to the green screw.•• above • earth•3-phase•motor••• possible• colors. Overall connection output leads as follows:•• R•to•L1,•Y•to•L2,•B•to•L3. Check rotation after setup.•• Perform•• Modify•equipment•• Do••• Use• Power•Carg•Cake•Capictor• As They Will There were damages both engines and PENTEK INTELLIDRIVE. •• Don't •do•no •drew••• blnt•• to•do•su in the owner's manual • starting/stopping. •• Do•not•install•or•operate•Drive•f•r•t•s• damaged•or•• vre missing. •• before •start•Drive•a•bin• •• Re-inspection and test operations •• •out•a•megger• (insulation•mger) •stin in the drive control circuit.) •• Do• •••Forgivable•Dofact•Ture•Comm•Conn•Comm• electrical material (such as screws and metal parts) inside the drive box at any time. Don't let flammable materials (such as oils) inside the drive box at any time. •• Pitch•Drive•who are being recorded• to•off• National Electric Code Section 250, IEC0536 Class 1, or canadian power code (as applicable), and any other code and commands that apply. ••all•totalment, • service•car,•do•car• done by qualified electric work. Page 3 20Troubleshooting 20Fault Possible Causes SolutionOver Current Shorted output Check for any shorts in motor cables. The locked rotor checks for the residue in the pump. Damaged wire insulation check engine wire insulation with megger. Overinterval voltage is a short drive with power to drive off, measuring output with ohmmeter for short detection. Cycling power on and off reviews for generators or switches at the inlet lane. High line voltage measures input line voltage to drive; it should be between 190V and 265V. Under voltagetow voltage line loss check power for local power outages. Over-flow load checks the engine properly for the size app. There is a loss of one phase motor correct voltage check on all motor leads. The power was removed from the DriveCheck there was the correct voltage on all input lines. MotorExceeding AmpsCheck Service Factor AmpsCheck cannot be started. Check the pump and the correct engine. No Service Factor Amps value enteredCheck Service Factor Amps entered and are correct. There is an open (connector) in the resistance of the motor wiresCheck of all the correct motor wires. Locked rotor pulling pump checks for debris in the pump. Dry RunOperation in open dischargeMay requires reducing the sensitivity pressure of dry execution or applying back pressure on the transducer. The drive cannot read the transducer signalCheck transducer linearity, as it may have been damaged. For more information, see Troubleshooting Help. Leak investigations are possible to break the pipe or a large leak. Dry running pumps check the water level in the well. FaultGround ground wire is short to phase ground wire check engine for short phase wire to engine or check insulation integrity with megger. The length of the long motor cable/ the length of the motor cable is more than 1000 feet of a reactor or filter may be required to limit the captaincy between the engine wires. System Not Grounded Ungrounded Drive Ground Detect parameter can be disabled, but will reactivate after 72 hours.*For additional information troubleshooting, please visit www.sta-rite.com/resources/images/16455.pdf Downloadable guide. Page 4Description 5TransducerThe PENTEK INTELLIDRIVE uses a 4-20mA, 0-100PSI pressure transducer to control motor speed (max is 300 PSI transducer). The transducer (see Figure 1) senses the pressure in the tube and turns it into an electrical signal. The drive senses and processes the signal in pid control (proportional, integration, derivative). When operating in AUTOSTART mode, the drive increases and decreases the speed of the pump engine if needed to maintain constant pressure in the plumbing system. KeypadThe drive keyboard apps, monitor pump status, and display faults in case they occur. Each button has a unique function, as described in Figure 2. The LCD display displays a text view of the status of the drive operation. Other LEDs are turned on to show when certain buttons are pressed or certain events occur. FanThe Drive uses a thermostatic controlled internal fan that acts automatically to cool drive components if necessary. Figure 2 - PENTEK INTELLIDRIVE functions the keyboard stop engine. Power is ON to Drive.A fault has occurred. Selects menu items and confirms numeric value changes. Displays drive's current operating status and changes the display parameters. Changes the view to the previous page. The drive is in alert mode (TPM); Change the internal pressure point from 15 PSI to transducer protected keys. The left and right arrows move the cursor. Shows the last 15 faults, checks to fill the line, then starts pumping in constant pressure mode. Changes views and parameters. Page 5 Installation 6Table 2 - Circuit Breaker and Wire Sizes.Motor Drive Model Volts Motor HP Wire Size Circuit Breaker Generator (kVA) Input Output2-wire PID102301/2 14 14 15 2.23/4 12 12 12 3. 11 20 4.4PID20 1-1/2 10 10 25 5.33-wirePID101/2 14 14152.33/4 12 12 3.3.4 01 3.5PID20 1-1/2 10 10 25 5.32 5.83 phasePID101/2 14 14 152.13/4 2.8112 3.4PID20 1-1/2 12 20 4.4210 25 5.5PID50 3 10 30 7.35 6 8 50 12.6 AWG will change depending on the length of the wire. See Tables 3-6.With properly-sized circuit breakers, the Drive is protected from short circuit on the input and the output. There is no risk of fire or electric shock due to a short circuit. The Drive has NEC Class 10 overload protection. Minimum 240V generator size. Notification information in tables 3-6 is only stated in pentek 0 case. For other engines, see the specifications of the engine manufacturer for wire measurement. Table 3 - Service entry to drive - Phase 1, 2-wire 40°C ambient, and 5% voltage drop, 60C and insulation 75C (copper only). Engine Maximum Cable Length in feet (M)Volts HP SFA 14 AWG 12 AWG 10 AWG 8 AWG 6 AWG 4AWG230 1/2 4.7 447 (136) 712 (217) 1000 (305) — 3/4 6.2 341(104) 542 (165) 864 (263) 1000 (305)1 8.1 261(79) 415 (126) 661 (202) 1000 (305)1 1/2 10.4 203 (62) 323 (98) 515 (157) 816 (249) 1000 (305)2 12.2 173 (53) 275 (84) 439 (134) 696 (212) 1000 (305)3 10.1 209 (64) 333 (101) 530 (162) 840 (256) 1000 (305)5 17.5 121(37) 192 (59) 306 (93) 485 (148) 754 (230) 1000 (305) Page 6Installation 7Table 4 - AWG Wire Sizing, Drive to 1-Phase, 2-Wire Motor, 40°C Ambient, and 5 percent Voltage Drop . 60C 75 5C (فقط مس و C 75 Motor P/N Motor Rating Maximum Cable Length in feet (M)Volts HP SFA 14 AWG 12 AWG 10 AWG 8 AWG 6 AWGP43B0007A2-01230 1/2 4.7 447 (136) 712 (217) 1000 (305) —P42B0007A2-01 3/4 6.2 341 (104) 542 (165) 864 (263) 1000 (305)P42B0010A2-01 1 8.1 261 (80) 415 (126) 661 (201) 1000 (305)P42B0015A2-01 1 1/2 10.4 203 (62) 323 (98) 515 (157) 816 (249) 1000 (305)Table 5 - AWG Wire Sizing, Drive to 3-Wire, 1-Phase Motor, 40°C Ambient, and 5 percent Voltage Drop, 60C and 75C Insulation (copper only). Motor P/N Motor Rating Maximum Cable Length in feet (M)Volts HP SFA 14 AWG 12 AWG 10 AWG 8 AWG 6 AWGP43B0005A2-01230 1/2 4.8 440 (134) 700 (213) 1000 (305) —P43B0007A2-01 3/4 6 352 (107) 560 (171) 893 (272) 1000 (305)P43B0010A2-01 1 7.3 289 (88) 460 (140) 734 (224) 1000 (305)P43B0015A2-01 1 1/2 10.9 194 (59) 308 (94) 492 (150) 778 (237) 1000 (305)P43B0020A2-01 2 12.2 173 (53) 275 (84) 439 (134) 696 (212) 1000 (305)Table 6 - AWG Wire Sizing, Drive to 3-Phase Motor, 40°C Ambient, and 5 percent Voltage Drop, 60C and 75C Insulation (copper only). Motor P/N Motor Rating Maximum Cable Length in feet (M)Volts HP SFA 14 AWG 12 AWG 10 AWG 8 AWG 6 AWG 4 AWGP43B0005A3230 1/2 2.9 728 (222) 1000 (305) — P43B0007A3 3/4 3.9 541 (165) 861 (262) 1000 (305)P43B0010A3 1 4.7 449 (137) 715 (218) 1000 (305)P43B0015A3 1 1/2 6.1 346 (105) 551 (168) 878 (268) 1000 (305)P43B0020A3 2 7.6 278 (85) 442 (135) 705 (215) 1000 (305)P43B0030A3 3 10.1 209 (64) 333 (101) 530 (162) 840 (256) 1000 (305)P43B0050A3 5 17.5 306 (93) 485 (148) 754 (230) 1000 (305)*Installations that require wire gauge larger than 60AWG will require an external junction box. 6 0AWGسیم به AWGسیم به 6. مشاهده ارقام 3 و 4.3 و پایین کشیدن backplate سوار دراو همانطور که در شکل 6 نشان داده شده است، این روش را دنبال کنید:1. اول، پوشش را با پشت کردن پیچ در پایین پوشش جلو حذف کنید.2. فشار بر روی DriveTo سیم به اندازه مناسب ایجاد کنید. صفحه 8 تب 8 سوار را از دراو به جهت اتصال اجرا کنید. سپس اتصالات خارجی را با آخیل سیم به AWGسیم به 6. مشاهده ارقام 3 و 4.3 و پایین کشیدن پوشش به سمت شما یا آگنشان اشاره، ایجاد یک شکاف. مشاهده ارقام 3 و 4.3 و پایین کشیدن پوشش به سمت شما یا آخیل سیم به AWGسیم به 6. مشاهده ارقام 3 و 4.3 و پایین کشیدن پوشش به سمت شما: بلند کردن بر روی پوشش و حذف. شکل 5.4 را ببینید. با پوشش برداشته شده، به طور دائم سوار دراو با استفاده از سوراخ شکاف بالا، به علاوه با سه سوراخ پایین (برای تخت با نسبت در حالی که کشیدن پوشش به سمت شما یا آگنشان اشاره، ایجاد یک شکاف. مشاهده ارقام 3 و 4.3 و پایین کشیدن پوشش به سمت شما: بلند کردن بر روی پوشش و حذف. شکل 5.4 را ببینید. با پوشش برداشته شده، به طور دائم سوار دراو با استفاده از سوراخ شکاف بالا، به علاوه با سه سوراخ پایین (برای تخت cover and the backplate figure 5 - pulls down cover 5. Ensure that the drive ventilation hole is not blocked and there is enough space around it to allow open air flow (at least 3 clearances on top, bottom, and sides). See Figure 6. Once the drive is installed, electrical wiring can be connected. 6. To re-close the drive cover, hook the top of it in the backplate (be sure to leave a gap). Lower the cover into place. Push the cover evenly against the backplate, removing the gaps. See Figure 7.7. Replace the screw at the bottom of the front cover. Fig 6 - Connect the drive to the wallTypical 230VAC circuit breaker*(double width)Fig 7 - Reconnect the drive cover