PENTEK T-Series Motor, Submersible Motor Control, and Fusing/Wiring Specifications.

TABLE VII: Recommended Fusing Data - PENTEK T-Series 60 Hz., Single Phase, 3 Wire Induction Run Submersible Pump Motors

HP	Volts/ Hz/Ph	Motor Winding Resistance-Ohms Main	Start	Service Factor Amps	Locked Rotor Amps	Fuze Size Standard/ Dual Element/ CB
1/2	230/60/1	3.7	8.6	5.5	19	20/10/15
3/4	230/60/1	2.5	4.8	7.4	25	25/15/20
1	230/60/1	1.9	4.2	8.9	38	30/20/25
1-1/2	230/60/1	1.45	3.3	12.7	49	35/20/30
2	230/60/1	1.3	2.45	12.8	50	30/20/25
3	230/60/1	1.1	2.87	17.1	55	45/30/40
5	230/60/1	0.8	1.7	27.4	83	80/45/60

TABLE VIII: Recommended Fusing Data - PENTEK T-Series 60 Hz., Single Phase 2 Wire Submersible Pump Motors

HP	Volts/ Hz/Ph	Motor Winding Resistance Ohms	Service Factor Amps	Locked Rotor Amps	Fuze Size Standard/ Dual Element/ CB
1/2	115/60/1	1	11.0	38	35/20/30
1/2	230/60/1	4	5.5	19.0	20/10/15
3/4	230/60/1	2.47	7.4	25.0	25/15/20
1	230/60/1	1.87	8.9	38	30/20/25

NOTE: 2 Wire motor leads are not color coded. Overload is located in motor and cannot be tested from above ground.

TABLE IX: PENTEK T-Series Motor/Control Coordination

T-Series Motor Model No. (3-W)	HP	Volts/Hz/Ph	SMCT Submersible Motor Control Type CSCR	CSCRP
TES-00460053	1/2	230/60/1	SMCT-CR0521	–
TES-00460370	3/4	230/60/1	SMCT-CR0721	–
TES-00461320	1	230/60/1	SMCT-CR1021	–
TES-00461965	1-1/2	230/60/1	SMCT-CR1521	–
P43T0020A2	2	230/60/1	SMCT-CR2021	SMCT-CRP2021
P43T0030A2	3	230/60/1	SMCT-CR3021	SMCT-CRP3021
P43T0050A2	5	230/60/1	SMCT-CR5021	SMCT-CRP5021

NOTE: PENTEK XE- and T-Series Motors with model numbers beginning 'P42' or 'P42T' are 2-Wire motors and do not use a Submersible Motor Control.

TABLE IXA: Motor Part Number Cross Reference

Motor Type	PENTEK Part Number	"T" Series Part Number
4" 2-Wire 1 Phase	P42T0005A1	TES-00020310
	P42T0005A2	TES-00020420
	P42T0007A2	TES-00020720
	P42T0010A2	TES-00020940
4" 3-Wire 1 Phase	P43T0005A2	TES-00460053
	P43T0007A2	TES-00460370
	P43T0010A2	TES-00461320
	P43T0015A2	TES-00461965
	P43T0020A2	TES-00463015
	P43T0030A2	TES-00464015
	P43T0050A2	TES-00475910

NOTE

Specifications on pages 4 to 8 are for PENTEK motors only. For Franklin specifications, see Pages 9 to 12.

A Note on Nomenclature:

Submersible Motor Control: The box, including the terminal strip(s), capacitor(s), relay(s), etc, which controls the basic on/off functions for a submersible motor.

Variable Speed Drive: A programmable motor control that varies pump speed to maintain constant pressure under varying load conditions.

Submersible Motor Control Compatability

Motor Type	Submersible Motor Control Type SMC	Franklin	SMCT
PENTEK XE-Series	Yes	Yes	**NO**
Franklin	Yes	Yes	**NO**
PENTEK T-Series	**NO**	**NO**	Yes

PENTEK T-Series 3-Phase 4" MOTOR OVERLOAD PROTECTION

PENTEK T-Series 3-phase submersible motors must have Class 10 overload protection that will disconnect the power within 10 seconds in the case of a locked rotor. To accomplish this, fixed-heater overloads are used. Refer to the chart below for appropriate heaters. The chart is based upon total line amps.

Divide the motor amps by 1.732 when using a 6-lead motor with a Y-Delta Starter.

NOTICE: General Electric overload heaters are only usable with General Electric overload relays.

Do not adjust relays to exceed nameplate amps.

For reliable 3-Phase starter operation, length of wire between starter and service entrance should be not more than 25% of total wire length.

TABLE XI: PENTEK T-Series Three-Phase Motor Overload Protection (60 Hz, 3450 RPM)

Motor Type	PENTEK Part Number	HP	kW	Volts	NEMA Starter Size	Overload Heater Relays†			Adjustable Relays	
						Allen Bradley	Furnas	Set G.E.	Max. Amps	Amps
4" 3-Wire	P43T0030A4	3	2.2	460	0	J21	K37	L618A	5.6	6.0
	P43T0050A3	5	3.7	230	1	J33	K61	L199B	20.0	22.0
	P43T0050A4	5	3.7	460	0	J26	K49	L100B	8.9	9.6
	P43T0075A3	7-1/2	5.5	230	1	J37	K67	L293B	24.0	26.0
	P43T0075A4	7-1/2	5.5	460	1	J30	K55	L147B	12.0	13.0
	P43T0100A4	10	7.5	460	1	J33	K60	L199B	15.4	16.6

* Table data are generated per NEC and Heater Manufacturer Recommendations (see 2005 NEC-Chapter 3, Tables 430.52, 430.248, 430.250, Allen Bradley, Siemens (Furnas) and G.E. catalogs for more information).

† Class 10 protection required. Warranty is void if Class 10 protection is not used.

TABLE XII: Recommended Fusing Data - PENTEK T-Series 60 Hz., 3 Phase Submersible Pump Motors

HP	Volts/ Hz/Ph	Motor Winding Resistance Ohms	Service Factor Amps	Locked Rotor Amps	Fuze Size Standard/ Dual Element
3	460/60/3	5.72-4.68	6.0	40	15/10
5	230/60/3	0.90-0.73	22.0	132	50/30
5	460/60/3	3.70-3.02	9.6	66	25/15
7-1/2	230/60/3	0.62-0.50	26.0	180	80/45
7-1/2	460/60/3	2.60-2.10	13.0	90	40/25
10	460/60/3	2.20-1.80	16.6	110	60/30

NOTE

Specifications on pages 4 to 8 are for PENTEK motors only. For Franklin specifications, see Pages 9 to 12.

Motor Type	PENTEK Part Number	"T" Series Part Number
4" 3-Wire 3 Phase	P43T0030A4	TES-00464615
	P43T0050A3	TES-00476010
	P43T0050A4	TES-00476250
	P43T0075A3	TES-00477010
	P43T0075A4	TES-00477250
	P43T0100A4	TES-00478250