



OWNER'S MANUAL
6" and 8" Submersible Motors

PENTEK® XE-6 / XE-8



Important Safety Instructions

SAVE THESE INSTRUCTIONS - This manual contains important instructions that should be followed during installation, operation, and maintenance.

⚠ This is the safety alert symbol. When you see this symbol in this manual, look for one of the following signal words and be alert to the potential for personal injury!

⚠ DANGER indicates a hazard which, if not avoided, will result in death or serious injury.

⚠ WARNING indicates a hazard which, if not avoided, could result in death or serious injury.

⚠ CAUTION indicates a hazard which, if not avoided, could result in minor or moderate injury.

NOTICE addresses practices not related to personal injury.

Carefully read and follow all safety instructions in this manual.

Keep safety labels in good condition. Replace missing or damaged safety labels.

California Proposition 65 Warning

⚠ WARNING This product and related accessories contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Handling and Installation Instruction

LIFTING

- ⚠ WARNING Heavy Object.** Lifting equipment must be capable of lifting motor and attached equipment. Check over all tools, especially the hoisting gear, for wear or damage before hoisting the unit.
- If the total length of the pump and motor unit (without any riser pipe attached) exceeds 10ft (3m), support the

unit with a girder while hoisting (see Figure 1). Do not remove the supporting girder until the unit is standing vertically in the hoist. Check for damage.

ELECTRICAL

(See Pages 5 & 6, for Product Specifications)

- ⚠ WARNING Risk of electrical shock if the cable is damaged.** Inspect the motor cable for any nicks or cuts. Do not use the motor cable to pull, lift, or handle the motor. Protect the motor cable during storage, handling, moving, and installation of the motor.
- Inspect the motor to determine that it is the correct horsepower, voltage, and size for the job and that there is no shipping damage. Verify that the motor nameplate voltage matches the available power supply voltage. The nameplate rated voltage must not vary more than $\pm 10\%$ from the power supply voltage.
- On all new installations and after the motor has sat idle for a long period of time, check the motor's internal electrical resistance with a megohmmeter with lead wires connected. Prior to installation, the motor should have an insulation value of at least 500 megohms. After installation, the motor and power cable should have a minimum insulation value of 1 megohm. If the minimum values are below the listed values, contact the factory before starting the motor.
- Fuses or circuit breakers and overload protection are required. Fuses or circuit breakers and overloads must be sized in accordance with National Electrical Code (NEC) or Canadian Electrical Code (CEC) requirements, as applicable, and with all applicable local codes and ordinances. See page 6 for more information on fuse and breaker sizing.
- Wire and ground the motor in accordance with National Electrical Code (NEC) or Canadian Electrical Code (CEC) requirements, as applicable, and with all applicable local codes and ordinances.

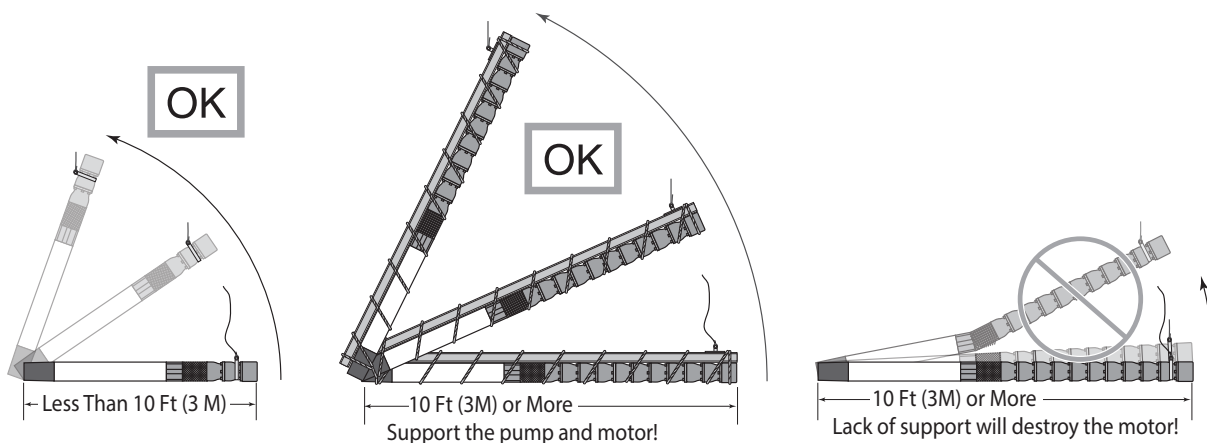


Figure 1: When the pump and motor together (without any riser pipe) are 10ft (3m) long or more, support the assembly before lifting to avoid bending it in the middle. Never try to lift the motor or pump by the motor cables.

MOTOR STORAGE AND INSTALLATION

1. The motor is filled at the factory with propylene glycol mixture which will protect it in temperatures down to -2.4°F (-16°C). Do not install, transport or store the motor below these temperatures if the motor is filled.
2. **NOTICE** To avoid damaging the motor thrust bearing, do not hammer on the shaft, coupling, or slinger. Check the motor rotation by hand to make sure that it turns freely.
3. To avoid damage to the motor diaphragm, make sure that the bottom of the motor does not touch the dirt or mud at the bottom of the well. Install the motor at least 10' above the well bottom.
4. To install the motor horizontally, lay it down with the lead wires at 12 o'clock when you are facing the motor shaft. To prevent any load on the shaft and bearings and to avoid any damaging vibrations to the motor, mount the motor solidly on the pump end and make sure that the pump and motor are accurately aligned.
5. Install the motor so that during operation water flows past all parts of it at a rate of at least 0.5 fps (0.15 mps). If the well will not provide this flow, install a sleeve on the motor to channel water past it (see Figure 2). Do not try to operate the motor in mud or sand. To do so will damage the motor and void the warranty.
6. Electrical connections: Connect the three leads to the three hot motor leads (red/yellow/black) in the incoming cable. Connect the ground wire (green) in accordance with NEC or CEC requirements (as applicable) and in accordance with all applicable local codes and ordinances. For 3-Phase motor installations, apply power momentarily to check rotation. If the motor runs backwards, interchange any two power leads to reverse direction of rotation.

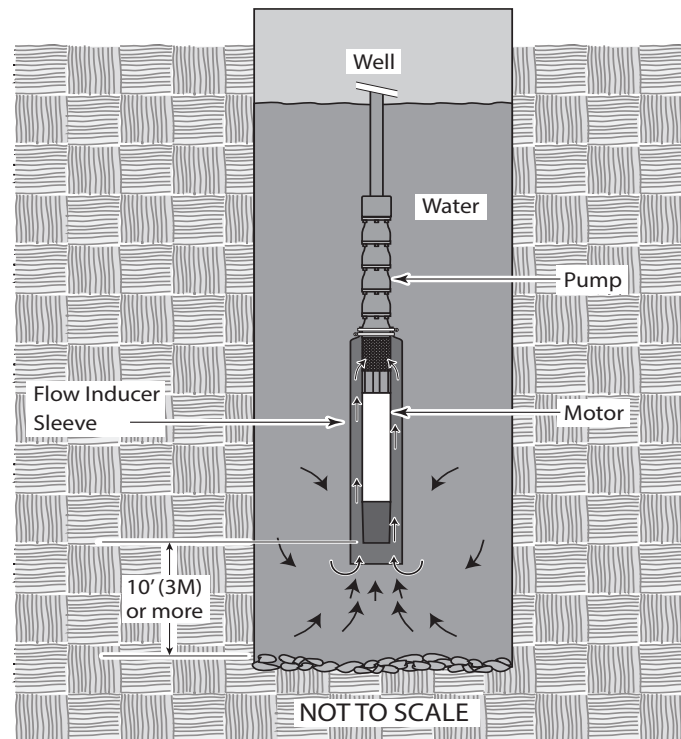


Figure 2: If flow past motor is less than .5 fps (0.15 mps), install a flow inducer sleeve as shown. Flow must be at least .5 fps (0.15 mps) for adequate motor cooling. The flow inducer sleeve should not touch the side of the motor.

APPLICATION LIMITS

Maximum Immersion Depth: 1148 ft. (350 m)
 Maximum Water Temperature: 95°F (35°C)
 pH content of the water: 6 – 8
 Minimum Cooling Flow Rate: 0.5 feet per second (fps)
 (0.15meters per second (mps)).
 Required line voltage at the motor under operating conditions (±10%).

NOTICE When calculating voltage at the motor, be sure to allow for voltage drop in the cable.

The sum of the absolute values of the voltage and frequency must not vary from the sum of the nominal values by more than ±10%.

Operating 3-phase motors with current unbalanced on the three legs of the circuit can overheat and damage the motor and will void the warranty. Current imbalance must not exceed 5% maximum.

Maximum Sand Content: 50ppm (max. size 0.1–0.25mm)
 Maximum Chlorine Ion Content: 4ppm

**Pentek single phase control boxes for Pentek XE-6 single phase motors
 60Hz 2 POLE**

					CONTROL BOX DIMENSIONS							
					HEIGHT		WIDTH		DEPTH			
PHASE	MODEL #	HP	KW	VOLTS	IN	MM	IN	MM	IN	MM	LBS	KG
1	PTKX-5SCB	5	3.70	230	14.0	356	12.0	304.8	6.0	152.4	30	13.6
	PTKX-7SCB	7.5	5.60								32	14.5
	PTKX-10SCB	10	7.50								33.2	15.1
	PTKX-15SCB	15	11.20									

The control box and motor are designed to work together. Be certain that the control box and motor horsepower and voltage match. Warranty coverage is only applicable when a Pentek single phase control box (models listed in chart above) is used with a Pentek XE single phase motor.

TROUBLESHOOTING

Problem	Possible Causes	Solution
Motor does not start, but does not blow fuses or trip circuit breaker	Defective fuses or circuit breakers Loose or corroded terminals Damaged or defective connections No incoming power	Replace fuses or circuit breakers. Clean and tighten connections and motor lead terminals. Repair or replace connections. Contact power company.
Motor starts, but fuses blow or circuit breakers trip	Wrong voltage Incorrect fuses or relay Incorrect connections Locked rotor or pump Insufficient insulation on motor cables	Make sure that nameplate rated voltage matches nominal power supply, and that actual supply voltage is within ±10% of nameplate voltage. Install correct fuses or relay. Re-connect motor wires correctly. Make sure that motor is at least 10ft above bottom of well, check well for sand. Install new motor cables; recheck resistance with Megohmmeter.
Motor starts and runs, then blows fuse or trips circuit breaker	Incoming voltage more than 10% high or low Sand in well	Confirm high or low voltage in motor cable, consult power company. Pull the pump and clean the well.
Motor does not start, but fuse blows or circuit breaker trips	locked rotor or pump	Check for sand in well. Make sure that motor is at least 10ft above the bottom of the well. Pull pump and check for mechanical obstruction in the pump and for free rotation of the motor.

Product Specifications

Nominal Diameter - 6" / 152.4mm • Effective Diameter - 5.43" / 138mm • 60Hz • 2 POLE • 3450 RPM • CLASS F INSULATION • TEMPERATURE RATING 95°F/35°C • IP 68 PROTECTION RATING

PHASE	MODEL #	HP	KW	VOLTS	FULL LOAD			SERVICE FACTOR LOAD (1.15)			LOCKED ROTOR AMPS	THRUST LOAD (LBS)	KVA CODE	
					AMPS	WATTS	EFF %	PF %	AMPS	WATTS				EFF %
1	P60A0050A2	5	3.70	230	22.8	4975	74.5	97.0	26.0	5625	75.5	97.0	104	E
	P60A0075A2	7.5	5.60		35.2	7300	77.0	92.0	40.0	8300	77.5	92.5	162	F
	P60A0100A2	10	7.50		45.7	9700	76.5	94.0	52.4	11175	76.5	94.0	202	E
	P60A0150A2	15	11.20		62.4	13725	81.5	98.0	72.5	15825	81.5	98.0	296	E
3	P60A0050A8	5	3.7	200-208	16.1	4830	77.5	86.5	18.0	5490	78.5	88.0	96	H
	P60A0075A8	7.5	5.5		23.3	7000	80.0	87.5	26.8	8070	80.0	88.5	140	H
	P60A0100A8	10	7.5		31.5	9090	82.5	86.5	35.0	10400	82.5	88.0	187	H
	P60A0150A8	15	11		44.9	13440	83.5	87.0	50.8	15460	83.5	88.5	268	H
	P60A0200A8	20	15		59.0	17850	83.0	87.5	67.1	20630	83.0	89.0	354	H
	P60A0250A8	25	19		76.8	22110	84.0	85.5	86.5	25520	84.0	87.5	445	H
	P60A0300A8	30	22		91.7	26420	84.5	86.0	103.3	30450	84.5	87.5	530	H
	P60A0050A3	5	3.7		14.4	4830	77.5	86.5	16.1	5490	78.5	88.0	87	H
	P60A0075A3	7.5	5.5		21.5	7000	80.0	87.5	24.1	8070	80.0	88.5	127	H
	P60A0100A3	10	7.5		28	9090	82.5	86.5	31.5	10400	82.5	88.0	164	H
	P60A0150A3	15	11	40.9	13440	83.5	87.0	46.3	15460	83.5	88.5	237	H	
	P60A0200A3	20	15	53.2	17850	83.0	87.5	60.8	20630	83.0	89.0	312	G	
	P60A0250A3	25	19	66.7	22110	84.0	85.5	76.0	25520	84.0	87.5	387	G	
	P60A0300A3	30	22	79.3	26420	84.5	86.0	90.2	30450	84.5	87.5	458	G	
	P60A0050A4	5	3.7	7.0	4830	77.5	86.5	8.0	5490	78.5	88.0	44	H	
	P60A0075A4	7.5	5.5	10.0	7000	80.0	87.5	11.3	8070	80.0	88.5	62	H	
	P60A0100A4	10	7.5	13.1	9090	82.5	86.5	14.8	10400	82.5	88.0	82	H	
	P60A0150A4	15	11	20.4	13440	83.5	87.0	23.0	15460	83.5	88.5	117	G	
	P60A0200A4	20	15	25.8	17850	83.0	87.5	29.4	20630	83.0	89.0	151	G	
	P60A0250A4	25	19	32.8	22110	84.0	85.5	36.8	25520	84.0	87.5	187	G	
P60A0300A4	30	22	39.3	26420	84.5	86.0	44.6	30450	84.5	87.5	226	G		
P60A0400A4	40	30	51.3	35030	85.0	87.5	58.6	40500	85.0	89.0	302	G		
P60A0500A4	50	37	65.8	44350	84.0	87.0	75.1	51200	84.0	88.0	385	G		
P60A0050A5	5	3.7	5.8	4830	77.5	86.5	6.5	5490	78.5	88.0	35	H		
P60A0075A5	7.5	5.5	8.2	7000	80.0	87.5	9.3	8070	80.0	88.5	51	H		
P60A0100A5	10	7.5	10.5	9090	82.5	86.5	11.8	10400	82.5	88.0	61	G		
P60A0150A5	15	11	15	13440	83.5	87.0	17.1	15460	83.5	88.5	88	G		
P60A0200A5	20	15	20.9	17850	83.0	87.5	23.7	20630	83.0	89.0	122	G		
P60A0250A5	25	19	26.2	22110	84.0	85.5	29.7	25520	84.0	87.5	153	G		
P60A0300A5	30	22	31	26420	84.5	86.0	35.0	30450	84.5	87.5	179	G		
P60A0400A5	40	30	41.5	35030	85.0	87.5	47.3	40500	85.0	89.0	247	G		

Nominal Diameter - 6" / 152.4mm • Effective Diameter - 5.43" / 138mm • 60Hz • 2 POLE • 3450 RPM • Shaft Extension - 2.87" / 73mm

PHASE	MODEL #	HP	KW	VOLTS	WINDING RESISTANCE (OHMS)		FUSE SIZING BASED ON NEC			GENERATOR SIZING			LENGTH MOTOR		WEIGHT		
					MAIN (BLACK YELLOW)	START (RED YELLOW)	STANDARD FUSE	DUAL ELEMENT TIME DELAY FUSE	CIRCUIT BREAKER	EXTERNALLY REGULATED KW	EXTERNALLY REGULATED KVA	INTERNALLY REGULATED KW	INTERNALLY REGULATED KVA	IN	MM	LBS	KG
1	P60A0050A2	5	3.70	230	0.54-0.67	1.7-2.1	80	50	70	20	25	10	13	25.6	650	104	47.2
	P60A0075A2	7.5	5.60		0.36-0.44	0.76-0.94	125	80	110	30	38	15	19	28.1	714	117	53.1
	P60A0100A2	10	7.50		0.25-0.31	0.69-0.85	175	90	125	40	50	20	25	30.3	770	132	59.9
	P60A0150A2	15	11.20		0.22-0.28	0.61-0.75	225	150	200	50	63	25	31	32.8	833	144	65.3
LINE TO LINE																	
3	P60A0050A8	5	3.7	200-208	0.96		60	35	50	20	25	10	13	23.0	584	87	39.5
	P60A0075A8	7.5	5.5		0.74		90	50	70	30	38	15	19	24.3	617	97	44.0
	P60A0100A8	10	7.5		0.42		110	70	100	40	50	20	25	25.6	650	104	47.2
	P60A0150A8	15	11		0.29		175	100	125	50	63	25	31	28.1	714	117	53.1
	P60A0200A8	20	15		0.22		225	125	175	75	94	38	47	30.3	770	132	59.9
	P60A0250A8	25	19		0.15		300	150	200	80	100	40	50	32.8	833	144	65.3
	P60A0300A8	30	22		0.12		350	200	250	100	125	50	63	35.6	904	165	74.8
	P60A0050A3	5	3.7		1.23		60	35	45	20	25	10	13	23.0	584	87	39.5
	P60A0075A3	7.5	5.5		0.82		80	45	70	30	38	15	19	24.3	617	97	44.0
	P60A0100A3	10	7.5		0.56		100	60	90	40	50	20	25	25.6	650	104	47.2
	P60A0150A3	15	11		0.37		150	90	125	50	63	25	31	28.1	714	117	53.1
	P60A0200A3	20	15		0.28		200	110	175	75	94	38	47	30.3	770	132	59.9
	P60A0250A3	25	19		0.20		225	150	200	80	100	40	50	32.8	833	144	65.3
	P60A0300A3	30	22		0.17		300	175	225	100	125	50	63	35.6	904	165	74.8
	P60A0050A4	5	3.7		4.93		30	15	25	20	25	10	13	23.0	584	87	39.5
	P60A0075A4	7.5	5.5		3.29		40	25	35	30	38	15	19	24.3	617	97	44.0
P60A0100A4	10	7.5	2.15		50	30	40	40	50	20	25	25.6	650	104	47.2		
P60A0150A4	15	11	1.30		70	45	60	50	63	25	31	28.1	714	117	53.1		
P60A0200A4	20	15	1.04		90	50	80	75	94	38	47	30.3	770	132	59.9		
P60A0250A4	25	19	0.77		110	70	100	80	100	40	50	32.8	833	144	65.3		
P60A0300A4	30	22	0.65		150	80	110	100	125	50	63	35.6	904	165	74.8		
P60A0400A4	40	30	0.51		175	100	150	125	156	63	78	39.3	998	187	84.8		
P60A0500A4	50	37	0.39		225	150	175	175	219	88	109	54.1	1374	265	120.2		
P60A0050A5	5	3.7	6.50		25	15	20	20	25	10	13	23.0	584	87	39.5		
P60A0075A5	7.5	5.5	4.04		30	20	25	30	38	15	19	24.3	617	97	44.0		
P60A0100A5	10	7.5	3.16		40	25	30	40	50	20	25	25.6	650	104	47.2		
P60A0150A5	15	11	2.18		60	30	45	50	63	25	31	28.1	714	117	53.1		
P60A0200A5	20	15	1.54		80	45	60	75	94	38	47	30.3	770	132	59.9		
P60A0250A5	25	19	1.17		90	60	80	80	100	40	50	32.8	833	144	65.3		
P60A0300A5	30	22	0.93		110	70	90	100	125	50	63	35.6	904	165	74.8		
P60A0400A5	40	30	0.72		150	90	125	125	156	63	78	39.3	998	187	84.8		

Nominal diameter - 8" / 203.2mm • Effective Diameter - 7.70" / 195.6mm • Shaft Extension - 4.00" / 101.6mm
 60Hz • 2 Pole • 3450RPM • Class F Insulation • Temperature Rating 95°F/35°C • IP68 Protection Rating

PHASE	Model #	HP	KW	VOLTS	Full Load						SERVICE FACTOR LOAD (1.15)				LOCKED ROTOR AMPS	THRUST LOAD (LBS)	KVA CODE		
					Amps	Watts	EFF %	PF%	Amps	Watts	EFF %	PF%	Amps	Watts				EFF %	PF%
3	P86A0500A4	50	37	460	65	43675	85.5	87.0	74	49950	86.0	88.0	540	10000	K				
	P86A0600A4	60	45		78	52225	85.5	88.0	89	59825	86.0	88.5	645		K				
	P80A0500A4	50	37		65	43675	85.5	87.0	74	49950	86.0	88.0	540		K				
	P80A0600A4	60	45		78	52225	85.5	88.0	89	59825	86.0	88.5	645		K				
	P80A0750A4	75	56		95	64850	86.5	88.5	109	74650	86.5	89.0	803		K				
	P80A1000A4	100	75		128	85075	87.5	87.5	146	98350	87.5	88.5	1080		K				
	P80A1250A4	125	93		165	110125	84.5	87.0	188	126825	85.0	87.5	1410		K				
	P80A1500A4	150	112		203	133025	84.5	85.5	228	151100	85.0	86.5	1643		K				
	P80A0500A5	50	37		52	43675	85.5	87.0	60	49950	86.0	88.0	439		K				
	P80A0600A5	60	45		61	52225	85.5	88.0	70	59825	86.0	88.5	518		K				
	P80A0750A5	75	56		76	64850	86.5	88.5	88	74650	86.5	89.0	645		K				
	P80A1000A5	100	75		100	85075	87.5	87.5	115	98350	87.5	88.5	855		K				
	P80A1250A5	125	93		129	110125	84.5	87.0	148	126825	85.0	87.5	1133		L				
	P80A1500A5	150	112		159	133025	84.5	85.5	178	151100	85.0	86.5	1320		K				

PHASE	MODEL #	HP	KW	VOLTS	LINE TO LINE RESISTANCE (OHMS)	FUSE SIZING BASED ON NEC			GENERATOR SIZING				LENGTH MOTOR		WEIGHT	
						STANDARD FUSE	DUAL ELEMENT TIME DELAY FUSE	CIRCUIT BREAKER	EXTERNALLY REGULATED		INTERNALLY REGULATED		IN	MM	MOTOR ONLY	
									KW	KVA	KW	KVA			LBS	KG
3	P86A0500A4	50	37	460	.21 - .26	250	175	225	250	313	125	156	38.9	987	330	150
	P86A0600A4	60	45		.19 - .24	350	200	250	300	375	150	188	41.6	1057	371	168
	P80A0500A4	50	37		.21 - .26	250	175	225	250	313	125	156	38.9	987	344	156
	P80A0600A4	60	45		.19 - .24	350	200	250	300	375	150	188	41.6	1057	385	175
	P80A0750A4	75	56		.15 - .19	400	225	350	350	438	175	219	46.6	1184	444	201
	P80A1000A4	100	75		.10 - .13	500	300	450	500	625	250	313	58.6	1488	525	238
	P80A1250A4	125	93		.07 - .09	700	400	600	600	750	300	375	66.9	1699	819	371
	P80A1500A4	150	112		.05 - .07	800	450	700	700	875	350	438	75.1	1908	932	423
	P80A0500A5	50	37		.27 - .34	225	125	175	250	313	125	156	38.9	987	344	156
	P80A0600A5	60	45		.21 - .26	250	150	200	300	375	150	188	41.6	1057	385	175
	P80A0750A5	75	56		.16 - .20	350	200	250	350	438	175	219	46.6	1184	444	201
	P80A1000A5	100	75		.10 - .13	400	250	350	500	625	250	313	58.6	1488	525	238
	P80A1250A5	125	93		.10 - .13	600	350	450	600	750	300	375	66.9	1699	819	371
	P80A1500A5	150	112		.08 - .10	700	400	500	700	875	350	438	75.1	1908	932	423

CABLE SELECTION		6" Motor - COPPER CABLE SIZE - From Service Entrance to Motor (Feet)														60°C					
MOTOR		AWG														MCM					
VOLTS/Hz	HP	KW	14	12	10	8	6	4	3	2	1	0	00	000	0000	250	300	350	400	500	
SINGLE PHASE																					
230 V 60 Hz	5	3.7	-	132	210	332	517	825	1037	1309	1649	2082	2626	3315	4177	4931					
	7.5	5.5	-	-	136	216	336	536	674	851	1072	1353	1707	2155	2715	3205	3848	4498			
	10	7.5	-	-	-	165	257	409	514	650	818	1033	1303	1645	2073	2447	2937	3434	3926	4884	
	15	11	-	-	-	-	185	296	372	469	591	747	942	1189	1498	1768	2123	2482	2837	3530	
THREE PHASE																					
230 V 60 Hz	5	3.7	134	213	339	537	835	1332	1674	2114	2663	3362	4241								
	7.5	5.5	89	142	226	359	558	890	1118	1412	1779	2246	2833	3577	4506						
	10	7.5	-	-	173	274	427	681	856	1081	1361	1718	2168	2737	3448	4070	4886				
	15	11	-	-	-	187	290	463	582	735	926	1169	1475	1862	2346	2769	3324	3886	4443		
460 V 60 Hz	20	15	-	-	-	-	221	353	443	560	705	890	1123	1418	1786	2109	2532	2959	3383	4209	
	25	18.5	-	-	-	-	177	282	355	448	564	712	898	1134	1429	1687	2025	2367	2707	3368	
	30	22	-	-	-	-	-	238	299	377	475	600	757	956	1204	1421	1706	1995	2281	2837	
	5	3.7	538	855	1364	2161	3362														
200-208 V 60 Hz	7.5	5.5	381	606	966	1530	2380	3794	4770												
	10	7.5	291	462	737	1168	1817	2897	3642	4600											
	15	11	187	298	475	752	1169	1864	2344	2960	3728	4706									
	20	15	-	233	371	588	915	1458	1833	2315	2917	3682	4645								
575 V 60 Hz	25	18.5	-	-	297	470	731	1165	1465	1850	2330	2942	3711	4685							
	30	22	-	-	-	388	603	961	1209	1526	1923	2427	3062	3866	4870						
	40	30	-	-	-	295	459	732	920	1162	1463	1847	2331	2942	3707	4376					
	50	37	-	-	-	-	358	571	718	906	1142	1441	1818	2296	2892	3415	4099	4792			
200-208 V 60 Hz	5	3.7	108	172	274	434	676	1077	1354	1710	2154	2719	3431	4331							
	7.5	5.5	-	115	184	292	454	723	909	1149	1447	1826	2304	2909	3665	4327					
	10	7.5	-	-	141	223	347	554	696	879	1108	1398	1764	2227	2806	3313	3977	4649			
	15	11	-	-	-	154	239	382	480	606	763	964	1216	1535	1933	2283	2740	3203	3662	4556	
575 V 60 Hz	20	15	-	-	-	-	181	289	363	459	578	729	920	1162	1464	1728	2074	2425	2772	3449	
	25	18.5	-	-	-	-	-	224	282	356	448	566	714	901	1135	1340	1609	1881	2151	2676	
	30	22	-	-	-	-	-	188	236	298	375	474	598	755	951	1122	1347	1575	1801	2241	
	5	3.7	827	1316	2099	3324															
575 V 60 Hz	7.5	5.5	578	920	1467	2323	3615														
	10	7.5	456	725	1156	1831	2849	4542													
	15	11	314	500	798	1264	1966	3134	3940	4976											
	20	15	227	361	576	912	1419	2261	2843	3590	4523										
575 V 60 Hz	25	18.5	-	288	459	728	1132	1805	2269	2865	3609	4556									
	30	22	-	-	390	617	961	1531	1925	2431	3063	3866	4877								
	40	30	-	-	-	457	711	1133	1424	1799	2266	2861	3609	4556							

Lengths only meet the US National Electrical Code ampacity requirements for individual conductors rated 60° C in free air or water, NOT in magnetic enclosures, conduit or direct buried. Refer to NEC Table 310.15(B)(17) for more information. MCM equals circular mills of the wire x 1000

CABLE SELECTION														75°C							
6" Motor - COPPER CABLE SIZE - From Service Entrance to Motor (Feet)																					
MOTOR		AWG												MCM							
VOLTS/Hz	HP	KW	14	12	10	8	6	4	3	2	1	0	00	000	0000	250	300	350	400	500	
SINGLE PHASE																					
230 V 60 Hz	5	3.7	-	132	210	332	517	825	1037	1309	1649	2082	2626	3315	4177	4931					
	7.5	5.5	-	-	136	216	336	536	674	851	1072	1353	1707	2155	2715	3205	3848	4498			
	10	7.5	-	-	-	165	257	409	514	650	818	1033	1303	1645	2073	2447	2937	3434	3926	4884	
	15	11	-	-	-	-	185	296	372	469	591	747	942	1189	1498	1768	2123	2482	2837	3530	
THREE PHASE																					
230 V 60 Hz	5	3.7	134	213	339	537	835	1332	1674	2114	2663	3362	4241								
	7.5	5.5	89	142	226	359	558	890	1118	1412	1779	2246	2833	3577	4506						
	10	7.5	-	109	173	274	427	681	856	1081	1361	1718	2168	2737	3448	4070	4886				
	15	11	-	-	118	187	290	463	582	735	926	1169	1475	1862	2346	2769	3324	3886	4443		
	20	15	-	-	-	142	221	353	443	560	705	890	1123	1418	1786	2109	2532	2959	3383	4209	
25	18.5	-	-	-	-	177	282	355	448	564	712	898	1134	1429	1687	2025	2367	2707	3368		
30	22	-	-	-	-	149	238	299	377	475	600	757	956	1204	1421	1706	1995	2281	2837		
460 V 60 Hz	5	3.7	538	855	1364	2161	3362														
	7.5	5.5	381	606	966	1530	2380	3794	4770												
	10	7.5	291	462	737	1168	1817	2897	3642	4600											
	15	11	187	298	475	752	1169	1864	2344	2960	3728	4706									
	20	15	146	233	371	588	915	1458	1833	2315	2917	3682	4645								
25	18.5	-	-	297	470	731	1165	1465	1850	2330	2942	3711	4685								
30	22	-	-	245	388	603	961	1209	1526	1923	2427	3062	3866								
40	30	-	-	-	295	459	732	920	1162	1463	1847	2331	2942	3707	4376						
50	37	-	-	-	-	358	571	718	906	1142	1441	1818	2296	2892	3415	4099	4792				
200-208 V 60 Hz	5	3.7	108	172	274	434	676	1077	1354	1710	2154	2719	3431	4331							
	7.5	5.5	73	115	184	292	454	723	909	1149	1447	1826	2304	2909	3665	4327					
	10	7.5	-	88	141	223	347	554	696	879	1108	1398	1764	2227	2806	3313	3977	4649			
	15	11	-	-	-	154	239	382	480	606	763	964	1216	1535	1933	2283	2740	3203	3662	4556	
	20	15	-	-	-	116	181	289	363	459	578	729	920	1162	1464	1728	2074	2425	2772	3449	
25	18.5	-	-	-	-	141	224	282	356	448	566	714	901	1135	1340	1609	1881	2151	2676		
30	22	-	-	-	-	-	188	236	298	375	474	598	755	951	1122	1347	1575	1801	2241		
575 V 60 Hz	5	3.7	827	1316	2099	3324															
	7.5	5.5	578	920	1467	2323	3615														
	10	7.5	456	725	1156	1831	2849	4542													
	15	11	314	500	798	1264	1966	3134	3940												
	20	15	227	361	576	912	1419	2261	2843	3590	4523										
25	18.5	181	288	459	728	1132	1805	2269	2865	3609	4556										
30	22	-	244	390	617	961	1531	1925	2431	3063	3866										
40	30	-	-	288	457	711	1133	1424	1799	2266	2861	3609	4556								

Lengths only meet the US National Electrical Code ampacity requirements for individual conductors rated 75° C in free air or water, NOT in magnetic enclosures, conduit or direct buried. Refer to NEC Table 310.15(B)(17) for more information. MCM equals circular mills of the wire x 1000

CABLE SELECTION														60°C									
6" Motor - COPPER CABLE SIZE - From Service Entrance to Motor (Feet)																							
MOTOR		AWG												MCM									
VOLTS/Hz	HP	KW	14	12	10	8	6	4	3	2	1	0	00	000	0000	250	300	350	400	500			
SINGLE PHASE																							
230 V 60 Hz	5	3.7	-	-	210	332	517	825	1037	1309	1649	2082	2626	3315	4177	4931							
	7.5	5.5	-	-	-	216	336	536	674	851	1072	1353	1707	2155	2715	3205	3848	4498					
	10	7.5	-	-	-	-	257	409	514	650	818	1033	1303	1645	2073	2447	2937	3434	3926	4884			
	15	11	-	-	-	-	-	-	372	469	591	747	942	1189	1498	1768	2123	2482	2837	3530			
THREE PHASE																							
230 V 60 Hz	5	3.7	-	213	339	537	835	1332	1674	2114	2663	3362	4241										
	7.5	5.5	-	-	226	359	558	890	1118	1412	1779	2246	2833	3577	4506								
	10	7.5	-	-	-	274	427	681	856	1081	1361	1718	2168	2737	3448	4070	4886						
	15	11	-	-	-	-	290	463	582	735	926	1169	1475	1862	2346	2769	3324	3886	4443				
	20	15	-	-	-	-	-	353	443	560	705	890	1123	1418	1786	2109	2532	2959	3383	4209			
25	18.5	-	-	-	-	-	-	-	355	448	564	712	898	1134	1429	1687	2025	2367	2707	3368			
30	22	-	-	-	-	-	-	-	-	377	475	600	757	956	1204	1421	1706	1995	2281	2837			
460 V 60 Hz	5	3.7	538	855	1364	2161	3362																
	7.5	5.5	381	606	966	1530	2380	3794	4770														
	10	7.5	291	462	737	1168	1817	2897	3642	4600													
	15	11	-	-	475	752	1169	1864	2344	2960	3728	4706											
	20	15	-	-	371	588	915	1458	1833	2315	2917	3682	4645										
25	18.5	-	-	-	470	731	1165	1465	1850	2330	2942	3711	4685										
30	22	-	-	-	-	603	961	1209	1526	1923	2427	3062	3866										
40	30	-	-	-	-	-	732	920	1162	1463	1847	2331	2942	3707	4376								
50	37	-	-	-	-	-	-	718	906	1142	1441	1818	2296	2892	3415	4099	4792						
200-208 V 60 Hz	5	3.7	-	172	274	434	676	1077	1354	1710	2154	2719	3431	4331									
	7.5	5.5	-	-	184	292	454	723	909	1149	1447	1826	2304	2909	3665	4327							
	10	7.5	-	-	-	223	347	554	696	879	1108	1398	1764	2227	2806	3313	3977	4649					
	15	11	-	-	-	-	239	382	480	606	763	964	1216	1535	1933	2283	2740	3203	3662	4556			
	20	15	-	-	-	-	-	289	363	459	578	729	920	1162	1464	1728	2074	2425	2772	3449			
25	18.5	-	-	-	-	-	-	-	-	356	448	566	714	901	1135	1340	1609	1881	2151	2676			
30	22	-	-	-	-	-	-	-	-	-	375	474	598	755	951	1122	1347	1575	1801	2241			
575 V 60 Hz	5	3.7	827	1316	2099	3324																	
	7.5	5.5	578	920	1467	2323	3615																
	10	7.5	456	725	1156	1831	2849	4542															
	15	11	-	500	798	1264	1966	3134	3940														
	20	15	-	-	576	912	1419	2261	2843	3590	4523												
25	18.5	-	-	459	728	1132	1805	2269	2865	3609	4556												
30	22	-	-	-	617	961	1531	1925	2431	3063	3866												
40	30	-	-	-	-	711	1133	1424	1799	2266	2861	3609	4556										

Lengths meet the US National Electrical Code ampacity requirements for either individual conductors or jacketed rated 60° C cable and can be in conduit or direct buried. Flat molded and web/ribbon cable are considered jacketed cable. Refer to NEC Table 310.15(B)(16) for more information.

MCM equals circular mills of the wire x 1000

Cable Selection

CABLE SELECTION														75°C						
6" Motor - COPPER CABLE SIZE - From Service Entrance to Motor (Feet)																				
MOTOR		AWG												MCM						
VOLTS/Hz	HP	KW	14	12	10	8	6	4	3	2	1	0	00	000	0000	250	300	350	400	500
SINGLE PHASE																				
230 V 60 Hz	5	3.7	-	-	210	332	517	825	1037	1309	1649	2082	2626	3315	4177	4931				
	7.5	5.5	-	-	-	216	336	536	674	851	1072	1353	1707	2155	2715	3205	3848	4498		
	10	7.5	-	-	-	-	257	409	514	650	818	1033	1303	1645	2073	2447	2937	3434	3926	4884
	15	11	-	-	-	-	-	296	372	469	591	747	942	1189	1498	1768	2123	2482	2837	3530
THREE PHASE																				
230 V 60 Hz	5	3.7	134	213	339	537	835	1332	1674	2114	2663	3362	4241							
	7.5	5.5	-	142	226	359	558	890	1118	1412	1779	2246	2833	3577	4506					
	10	7.5	-	-	173	274	427	681	856	1081	1361	1718	2168	2737	3448	4070	4886			
	15	11	-	-	-	187	290	463	582	735	926	1169	1475	1862	2346	2769	3324	3886	4443	
	20	15	-	-	-	-	221	353	443	560	705	890	1123	1418	1786	2109	2532	2959	3383	4209
25	18.5	-	-	-	-	-	282	355	448	564	712	898	1134	1429	1687	2025	2367	2707	3368	
30	22	-	-	-	-	-	-	299	377	475	600	757	956	1204	1421	1706	1995	2281	2837	
460 V 60 Hz	5	3.7	538	855	1364	2161	3362													
	7.5	5.5	381	606	966	1530	2380	3794	4770											
	10	7.5	291	462	737	1168	1817	2897	3642	4600										
	15	11	-	298	475	752	1169	1864	2344	2960	3728	4706								
	20	15	-	-	371	588	915	1458	1833	2315	2917	3682	4645	4685						
25	18.5	-	-	-	470	731	1165	1465	1850	2330	2942	3711	4685							
30	22	-	-	-	388	603	961	1209	1526	1923	2427	3062	3866							
40	30	-	-	-	-	459	732	920	1162	1463	1847	2331	2942	3707	4376					
50	37	-	-	-	-	-	571	718	906	1142	1441	1818	2296	2892	3415	4099	4792			
200-208 V 60 Hz	5	3.7	108	172	274	434	676	1077	1354	1710	2154	2719	3431	4331						
	7.5	5.5	-	-	184	292	454	723	909	1149	1447	1826	2304	2909	3665	4327				
	10	7.5	-	-	141	223	347	554	696	879	1108	1398	1764	2227	2806	3313	3977	4649		
	15	11	-	-	-	-	239	382	480	606	763	964	1216	1535	1933	2283	2740	3203	3662	4556
	20	15	-	-	-	-	-	289	363	459	578	729	920	1162	1464	1728	2074	2425	2772	3449
25	18.5	-	-	-	-	-	-	282	356	448	566	714	901	1135	1340	1609	1881	2151	2676	
30	22	-	-	-	-	-	-	-	298	375	474	598	755	951	1122	1347	1575	1801	2241	
575 V 60 Hz	5	3.7	827	1316	2099	3324														
	7.5	5.5	578	920	1467	2323	3615													
	10	7.5	456	725	1156	1831	2849	4542												
	15	11	314	500	798	1264	1966	3134	3940											
	20	15	-	361	576	912	1419	2261	2843	3590	4523									
25	18.5	-	-	459	728	1132	1805	2269	2865	3609	4556									
30	22	-	-	390	617	961	1531	1925	2431	3063	3866									
40	30	-	-	-	457	711	1133	1424	1799	2266	2861	3609	4556							

Lengths meet the US National Electrical Code ampacity requirements for either individual conductors or jacketed rated 75° C cable and can be in conduit or direct buried. Flat molded and web/ribbon cable are considered jacketed cable. Refer to NEC Table 310.15(B)(16) for more information.

MCM equals circular mills of the wire x 1000

CABLE SELECTION		60°C																		
8" Motor - COPPER CABLE SIZE - From Service Entrance to Motor (Feet) - INDIVIDUAL CONDUCTORS		AWG														MCM				
VOLTS /Hz	HP	KW	14	12	10	8	6	4	3	2	1	0	00	000	0000	250	300	350	400	500
460V 60Hz	50	37	-	-	-	-	363	579	728	920	1159	1463	1846	2330	2935	3465	4160	4863		
	60	45	-	-	-	-	-	482	606	765	964	1216	1534	1937	2441	2881	3459	4043	4623	
	75	56	-	-	-	-	-	-	495	625	787	993	1253	1582	1993	2353	2824	3301	3774	4696
	100	75	-	-	-	-	-	-	-	-	587	741	935	1181	1488	1756	2108	2465	2818	3506
	125	93	-	-	-	-	-	-	-	-	-	576	726	917	1155	1364	1637	1914	2188	2723
575V 60Hz	150	112	-	-	-	-	-	-	-	-	-	-	599	756	953	1125	1350	1578	1804	2245
	50	37	-	-	-	360	560	893	1123	1418	1787	2255	2845	3592	4525					
	60	45	-	-	-	-	480	766	963	1216	1531	1933	2439	3079	3879	4579				
	75	56	-	-	-	-	-	609	766	967	1218	1538	1940	2449	3085	3642	4373			
	100	75	-	-	-	-	-	-	586	740	932	1177	1484	1874	2361	2787	3346	3911	4472	
125	93	-	-	-	-	-	-	-	-	724	914	1153	1456	1835	2166	2600	3039	3475	4323	
150	112	-	-	-	-	-	-	-	-	-	760	959	1211	1525	1801	2162	2527	2889	3595	

Lengths only meet the US National Electrical Code ampacity requirements for individual conductors rated to 60°C in free air or water, NOT in magnetic enclosures, conduit, or direct buried. Refer to NEC Table 310.15(B)(17) for more information. MCM equals circular mills of the wire x 1000

CABLE SELECTION		75°C																		
8" Motor - COPPER CABLE SIZE - From Service Entrance to Motor (Feet) - INDIVIDUAL CONDUCTORS		AWG														MCM				
VOLTS /Hz	HP	KW	14	12	10	8	6	4	3	2	1	0	00	000	0000	250	300	350	400	500
460V 60Hz	50	37	-	-	-	-	363	579	728	920	1159	1463	1846	2330	2935	3465	4160	4863		
	60	45	-	-	-	-	-	482	606	765	964	1216	1534	1937	2441	2881	3459	4043	4623	
	75	56	-	-	-	-	-	-	495	625	787	993	1253	1582	1993	2353	2824	3301	3774	4696
	100	75	-	-	-	-	-	-	-	-	587	741	935	1181	1488	1756	2108	2465	2818	3506
	125	93	-	-	-	-	-	-	-	-	-	576	726	917	1155	1364	1637	1914	2188	2723
575V 60Hz	150	112	-	-	-	-	-	-	-	-	-	-	599	756	953	1125	1350	1578	1804	2245
	50	37	-	-	-	366	570	908	1142	1442	1817	2293	2893	3633	4602					
	60	45	-	-	-	-	474	755	949	1198	1510	1906	2404	3035	3824	4515				
	75	56	-	-	-	-	-	609	766	967	1218	1538	1940	2449	3085	3642	4373	5111		
	100	75	-	-	-	-	-	-	591	746	940	1187	1497	1890	2382	2812	3375	3946	4511	
125	93	-	-	-	-	-	-	-	-	724	914	1153	1456	1835	2166	2600	3039	3475	4323	
150	112	-	-	-	-	-	-	-	-	-	760	959	1211	1525	1801	2162	2527	2889	3595	

Lengths only meet the US National Electrical Code ampacity requirements for individual conductors rated to 75°C in free air or water, NOT in magnetic enclosures, conduit, or direct buried. Refer to NEC Table 310.15(B)(17) for more information. MCM equals circular mills of the wire x 1000

CABLE SELECTION		8" Motor - COPPER CABLE SIZE - From Service Entrance to Motor (Feet) - JACKETED CONDUCTORS																60°C						
VOLTS /Hz	HP	KW	AWG													MCM								
			14	12	10	8	6	4	3	2	1	0	00	000	0000	250	300	350	400	500				
460V 60Hz	50	37	-	-	-	-	-	-	-	728	920	1159	1463	1846	2330	2935	3465	4160	4863	-	-	-	-	-
	60	45	-	-	-	-	-	-	-	-	765	964	1216	1534	1937	2441	2881	3459	4043	4623	-	-	-	-
	75	56	-	-	-	-	-	-	-	-	-	787	993	1253	1582	1993	2353	2824	3301	3774	4696	-	-	-
	100	75	-	-	-	-	-	-	-	-	-	-	-	935	1181	1488	1756	2108	2465	2818	3506	-	-	-
	125	93	-	-	-	-	-	-	-	-	-	-	-	-	-	1155	1364	1637	1914	2188	2723	-	-	-
575V 60Hz	150	112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1350	1578	1804	2245	-
	50	37	-	-	-	-	-	-	893	1123	1418	1787	2255	2845	3592	4525	-	-	-	-	-	-	-	-
	60	45	-	-	-	-	-	-	-	963	1216	1531	1933	2439	3079	3879	4579	-	-	-	-	-	-	-
	75	56	-	-	-	-	-	-	-	-	967	1218	1538	1940	2449	3085	3642	4373	-	-	-	-	-	-
	100	75	-	-	-	-	-	-	-	-	-	-	1177	1484	1874	2361	2787	3346	3911	4472	-	-	-	-
125	93	-	-	-	-	-	-	-	-	-	-	-	-	1456	1835	2166	2600	3039	3475	4323	-	-	-	
150	112	-	-	-	-	-	-	-	-	-	-	-	-	-	1525	1801	2162	2527	2889	3595	-	-	-	

Lengths meet the US National Electrical Code ampacity requirements for individual conductors or jacketed rated 60°C cable and can be in conduit or direct buried. Flat molded and web/ribbon cable are considered jacketed cable. Refer to NEC Table 310.15(B)(16) for more information

MCM equals circular mills of the wire x 1000

CABLE SELECTION		8" Motor - COPPER CABLE SIZE - From Service Entrance to Motor (Feet) - JACKETED CONDUCTORS																75°C							
VOLTS /Hz	HP	KW	AWG													MCM									
			14	12	10	8	6	4	3	2	1	0	00	000	0000	250	300	350	400	500					
460V 60Hz	50	37	-	-	-	-	-	-	-	728	920	1159	1463	1846	2330	2935	3465	4160	4863	-	-	-	-	-	
	60	45	-	-	-	-	-	-	-	606	765	964	1216	1534	1937	2441	2881	3459	4043	4623	-	-	-	-	
	75	56	-	-	-	-	-	-	-	-	625	787	993	1253	1582	1993	2353	2824	3301	3774	4696	-	-	-	
	100	75	-	-	-	-	-	-	-	-	-	-	741	935	1181	1488	1756	2108	2465	2818	3506	-	-	-	
	125	93	-	-	-	-	-	-	-	-	-	-	-	-	917	1155	1364	1637	1914	2188	2723	-	-	-	
575V 60Hz	150	112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1350	1578	1804	2245	-	
	50	37	-	-	-	-	-	-	893	1123	1418	1787	2255	2845	3592	4525	-	-	-	-	-	-	-	-	
	60	45	-	-	-	-	-	-	-	766	963	1216	1531	1933	2439	3079	3879	4579	-	-	-	-	-	-	
	75	56	-	-	-	-	-	-	-	-	766	967	1218	1538	1940	2449	3085	3642	4373	-	-	-	-	-	-
	100	75	-	-	-	-	-	-	-	-	-	740	932	1177	1484	1874	2361	2787	3346	3911	4472	-	-	-	-
125	93	-	-	-	-	-	-	-	-	-	-	-	-	1153	1456	1835	2166	2600	3039	3475	4323	-	-	-	
150	112	-	-	-	-	-	-	-	-	-	-	-	-	-	1211	1525	1801	2162	2527	2889	3595	-	-	-	

Lengths meet the US National Electrical Code ampacity requirements for individual conductors or jacketed rated 75°C cable and can be in conduit or direct buried. Flat molded and web/ribbon cable are considered jacketed cable. Refer to NEC Table 310.15(B)(16) for more information

MCM equals circular mills of the wire x 1000

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Limited Warranty

PENTAIR warrants to the original consumer purchaser (“Purchaser” or “You”) of the products listed below, that they will be free from defects in material and workmanship for the Warranty Period shown below.

Product	Warranty Period
Water Systems Products — jet pumps, small centrifugal pumps, submersible pumps and related accessories	<i>whichever occurs first:</i> 12 months from date of original installation, 18 months from date of manufacture
PENTEK INTELLIDRIVE™	12 months from date of original installation, or 18 months from date of manufacture
Pro-Source® Composite Tanks	5 years from date of original installation
Pro-Source® Steel Pressure Tanks	5 years from date of original installation
Pro-Source® Epoxy-Line Tanks	3 years from date of original installation
Sump/Sewage/Effluent Products	12 months from date of original installation, or 18 months from date of manufacture

Our warranty will not apply to any product that, in our sole judgment, has been subject to negligence, misapplication, improper installation, or improper maintenance. Without limiting the foregoing, operating a three phase motor with single phase power through a phase converter will void the warranty. Note also that three phase motors must be protected by three-leg, ambient compensated, extra-quick trip overload relays of the recommended size or the warranty is void.

Your only remedy, and PENTAIR’s only duty, is that PENTAIR repair or replace defective products (at PENTAIR’s choice). You must pay all labor and shipping charges associated with this warranty and must request warranty service through the installing dealer as soon as a problem is discovered. No request for service will be accepted if received after the Warranty Period has expired. This warranty is not transferable.

PENTAIR IS NOT LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, OR CONTINGENT DAMAGES WHATSOEVER.

THE FOREGOING LIMITED WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE FOREGOING LIMITED WARRANTIES SHALL NOT EXTEND BEYOND THE DURATION PROVIDED HEREIN.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to You. This warranty gives You specific legal rights and You may also have other rights which vary from state to state.

This Limited Warranty is effective June 1, 2011 and replaces all undated warranties and warranties dated before June 1, 2011.

PENTAIR
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