

REDUCED EXTERNAL VOLTAGE - REV	A wiring configuration ensuring any voltage leaving an electrical panel to a float, probe or other device is rated at a safe level of 30v.
REDUCED INCOMING AMPS - RIA	A component configuration that will work with low amperage incoming signals. Will work with all start/stop signal controls - including 2-wire systems.
REGENERATIVE TURBINE PUMP	Type of pump in which the fluid takes multiple trips through the vanes of the impeller increasing flow and pressure. Used in boiler feed applications.
RELIEF VALVE	A type of valved used to relieve the pressure in a system.
RESISTANCE	Impedes the flow of electrons, and is measured in Ohms
ROTATION CLOCKWISE (cw)	A left to right shaft rotation while facing the shaft end of a motor, or suction tap of a pump.
ROTATION COUNTERCLOCKWISE (ccw)	A right to left shaft rotation while facing the shaft end of a motor, or suction tap of a pump. Most pumps run this direction.
ROLLER PUMP	Employs rollers that revolve inside the pump housing to force a liquid through the outlet to the nozzle. Used for agricultural applications and industrial spraying.
SAND PUMP	A type of plunger pump that removes chopped-up drill core from a drill hole.
SCREW PUMPS	Built with two intermeshing screws, driven by timing gears these pumps are used in fuel transfer, and other applications requiring high flow rates of viscous liquids.
S.F.A	Service Factor Amps. A factor indicating the degree to which an electric motor can be operated over the specified horsepower without danger of overloading or failure.
SEAL FACES	The lapped faces that that provide the primary sealing in a mechanical seal.
SEAL LIFE	Seals should run leak free until the sacrificial face (usually carbon/ graphite) is worn away.
SELF ALIGN	A method of keeping both mechanical seal faces square to the rotating shaft.
SELF PRIMING	A pump with the ability to exhaust air/gas from a pump case.
SELF PRIMING PUMP	A centrifugal pump having the capability of dispersing a certain amount of air from its pump body, assuming the pump has been primed initially, when operating under a suction lift; to free itself of entrained gas without losing prime; and to continue normal pumping operation without attention.
SEPTIC TANK	A container used to collect wastewater from a house. Generally they have two compartments and are watertight. The larger compartment is for the raw sewage and the second compartment for effluent water. The second compartment can also be used as a pump chamber.
SEWAGE	Raw wastewater from residential, commercial or industrial sites. Sewage from residential sites is generally defined as 2" or less solids and commercial sites are 3" or 4" solids.
SEWAGE PUMP	A pump designed to pump black water (effluent).
SHALLOW WELL	A type of jet pump OR a well having less than 25' of lift.
SHALLOW WELL SUBMERSIBLE PUMP	A type of submersible pump will work up to a depth of around 100 feet.
SHALLOW-WELL JET PUMP	A type of pump that will work to a maximum depth of about 25 feet. The jet is either attached or pre-cast into the pump body.
SHUT OFF HEAD	The total head created by a pump that is running against a closed discharge.
SILICA CARBIDE	Synthetically produced crystalline compound that is incredibly hard - used in pump seals.
SKIMMER	A machine that separates debris from the top of the water.

SLURRY	Solids in liquid. It is impossible to define when the quantity and size of the particles becomes too much for the mechanical seal.
SMARTBOX	A Munro Manufacturing trademarked control panel that offers exceptional pump protection against loss of prime or heat.
SOFT START	Device used to temporarily reduce the load and torque in the powertrain and electrical current surge of the motor during startup.
SOLENOID VALVE	An automatic valve operating under low voltage (24V AC) which may be remotely located in the landscape and controlled via a signal cable from the central controller (timer).
SOLUBLE	When one liquid dissolves or mixes with another liquid.
SPECIFIC GRAVITY	Ratio of the weight of a volume of a substance to an equal volume of water.
STAINLESS STEEL	Alloy steels containing a high percentage of chromium.
START SIGNAL	An electrical signal sent to begin a water cycle. Signal can initiate from a switch, controller, manual operation or other means.
STARTBOX	A Munro Manufacturing trademarked control panel that provides pilot duty operation between start signal and pump.
STATIC HEAD	The maximum height that a liquid is being pump.
STRAIN	A measure of the amount of deformation produced in a substance when it is stressed.
STRAINER	Any device used to sift debris from inlet of pipework.
STRESS	A measure of the intensity of the load applied to a material.
STRESS RELIEVE	To take residual stress out of an object. This is very important with lapped seal faces; especially those that have been inserted into a metal holder.
SUBMERSIBLE PUMP	A multi-stage centrifugal pump with a waterproof electric motor mounted below the pump end.
SUCTION HEAD	The head on the suction side of the pump. You subtract it from the discharge head to determine the head being produced by the pump. It is a sum of the static, pressure and friction heads.
SUCTION LEAK	An escape of liquid from, or insertion of air into, the piping system going into a pump.
SUCTION LIFT	The condition where the water supply is below the pump.
SUCTION SIDE (OF A PUMP)	The side of the pump where the inlet is located.
SUMP	A low space that collect liquids such as water or chemicals.
SYSTEM CAPACITY	The ability of an irrigation system to deliver water to an acreage.
SYSTEM CURVE	A description of what the pump is required to perform. The pump will pump where the system curve intersects the pump curve.
SYSTEM HEAD	The head caused by friction in the piping, valves and fittings.
T.D.H	Total Discharge Head. A combination of the suction head and the head being produced by the pump.
TANK	A steel, plastic, or fibrewound vessel designed to store pressure or water.
TEMPERATURE SWITCH	A device used to monitor the temperature within a pump. If the temperature is too high the pump will turn off, protecting the pump.
THERMAL CONDUCTIVITY	A measure of the material's ability to conduct heat.

THERMAL OVERLOAD	Over-working equipment causing it to generate heat to the point of damaging itself.
THERMAL OVERLOAD PROTECTION	Relay used to shut down an overloaded motor before the motor becomes hot enough to cause damage. A bimetallic heat detection device.
THERMAL PROTECTION	A bimetallic heat detection device that will shut an overworked motor down before the generated heat causes damage to itself.
THERMOPLASTIC	A plastic material that can be softened or melted repeatedly without change of properties.
TIME DELAY	A adjustable timer capable of delaying an action after start signal is received.
TORQUE	A turning or twisting effort that results from a force being applied to a rigid object at a radial distance from the center of rotation.
TORQUE ARRESTOR	A device use to prevent the turning and twisting of pipes.
TOTAL DYNAMIC HEAD (TDH)	Total height that a fluid is to be pump, taking into account all losses, which include friction loss, pounds per square inch and elevation change.
TRANSDUCER	Attached to the pump and used to send a vibration signal to a meter where it can be read.
TURBIDITY	A measurement of the amount of suspended solids (colloids) in a solution.
TRASH PUMP	Self-priming centrifugal designed to handle rocks and other solids, used in dewatering applications.
UTILITY PUMP	An inexpensive pump similar to a sump pump except that it is not automatic.
VANE IMPELLER (SEMI-OPEN)	This has only one shroud. The other side of the impeller is in close contact with the pump volute case. The vanes of the impeller are spaced far enough apart to pass solids.
VANE PASSING SYNDROME	A type of cavitation caused by the impeller/ cutwater clearance being too small.
VANE PUMPS	These pumps employ a rotor with vanes located in slots, rotating inside an eccentrically shaped casing. Used in transferring oils and other viscous liquids.
VAPORIZE	The fluid passes from a liquid to a gaseous state. If this happens at the seal faces the seal faces will be blown open.
VARIABLE FREQUENCY DRIVE	Circuitry that runs a motor from 0 to 60 Hz. Adjusting the power to save energy.
VARIABLE SPEED MOTOR	Used to control flow in a system by varying the frequency of the motor. Recommended for circulating systems and any other system where the main head is friction losses in the piping system.
VELOCITY	The measurement of the motion of liquids, expressed in feet per second.
VELOCITY HEAD	Part of the total head calculation.
VENT	To remove air or gas from the system. It is important to vent the stuffing box in vertical pumps to prevent the seal faces from running dry.
VERTICAL SUMP PUMP	These pumps are built with a vertical shaft supported in a center column. Used in sump applications.
VERTICAL TURBINE PUMP	Vertical shaft pump that is designed to fit in a bore-hole well. Used for irrigation and booster applications.
VISCOSITY	Resistance to deformation by shear force. Example honey has a higher viscosity than water.
VITON	An E.I. Dupont Dow manufactured elastomer widely used in the sealing industry. The generic name is fluorocarbon. Many of these compounds are attacked by water and steam.
VOC	Volatile Organic Chemical. It is a category of water contaminants.

VOLTAGE	Electrical force or pressure that causes current to flow in a circuit.
VOLTAGE IMBALANCE	Difference between the highest and the lowest voltage exceeding 4%.
VOLUTE CASING	A pump component that encloses the impeller and converts the high velocity energy created by the impeller into pressure energy. It is spiral shaped, similar to a snail's shell.
VORTEX IMPELLER	This impeller creates a revolving mass of water which forms a whirlpool. Minimizing the risk of clogging.
VORTEX PUMP	A type of pump used for excessive solids. The impeller is recessed into the volute. A very low efficiency design, but practical in many applications.
VORTEXING LIQUID	Creating a "whirlpool affect" that can draw air into the suction of the pump.
W.O.G	Designation for parts rated for water, oil and gas.
WATER HAMMER	A damaging condition that occurs when a column of liquid changes direction quickly and increases in velocity. Also known as hydraulic shock.
WATER HORSE POWER	The energy added by the spinning impeller.
WATER-COOLED	Liquid is forced past the motor so that the heat of the motor can be transferred to the liquid increasing usage time and usable life.
WATT	A measurement of electrical power where watts = volts x amps. One watt is the rate of energy expended when a steady current of one amp flows under a pressure of one volt.
WEAR RING	Used with closed impeller pumps to restrict leakage from the high pressure side of the pump to the low pressure side. Should be replaced when the recommended clearance is doubled.
WEEP HOLE - PUMP PANEL	Small opening meant as an outlet for water to escape an electrical box.
WEEP HOLE - PUMP	Small opening meant as an outlet for air to escape a pump case to prevent air lock.
WEIR	A barrier that is designed to alter flow characteristics across rivers and streams.
WELL CAP	A tight-fitting, vermin-proof seal designed to prevent contaminants from flowing down inside of the well casing.
WELL CASING	The tubular lining of a well. Also a steel or plastic pipe installed during construction to prevent collapse of the well hole.
WIRING DIAGRAM	Shows how the pump is wired for voltage.
Y-STRAINER	Inline strainer that removes unwanted solids from liquid, gas, or steam lines.
ZONE	A zone is the area to be watered by a single control valve. Zones are ideally comprised of similar sprinkler types and plants with similar water requirements. This term is usually used with domestic sprinkler systems.

ANSI Process Pump	Horizontal, end suction, single stage pump with dimensionally standard sizes. Used in transfer and process applications for many types of industrial and manufacturing applications.
API Process Pump	Pump built to API 610 standard for use in industrial applications.
Auger Pump	Pump that raises water by means of helical impellers in the pump casing. Used in irrigation and dewatering applications.
Axial Flow Pump	Also known as propeller pump, pump that is very high flow, low head. Used in dewatering, circulating and irrigation applications.
Booster Pump	This pump is used to boost the pressure in a system.
Canned Motor Pumps	A seal-less centrifugal pump, with an impeller that is attached to the motor rotor. Used in chemical or high temperature pump applications. Can be flooded rotor or magnetic drive.
Circulator Pump	Pump that is used in HVAC systems in buildings circulating all temperatures of water.
Concrete Pump	A concrete pump is designed to pump concrete and other mixed aggregate solutions.
Cryogenic Pump	Used in applications where the liquid is at a very low temperature.
Deep Well Jet Pump	Uses a venturi, which becomes a second pump that charges the above ground unit, to increase pressure.
Deep Well Submersible Pump	Pump that can be submersed 1000's of feet.
Diaphragm Pump	Reciprocating positive displacement pump used where the fluid has high solids or high viscosity. Works with two valves like a human heart.
Double Suction Pump (horizontal split case)	The rotor is suspended between bearings with the fluid entering on either side of the impeller.
Drum Pump	This slim pump is used to move small quantities of liquids out of drums and carboys.
Effluent Pump	A pump used in sanitary sump drainage and grey water applications. Usually pumps smaller solids than a sewage pump.
End Suction Pump	Flow enters the end of the casing and is pushed out of the top, used to transfer or circulate liquid. This is not a self-priming pump and requires a foot valve.
Fire Pump	Centrifugal pump, employing high pressure, used for fire fighting.

Flexible Impeller Pump	Type of rotary displacement pump that has a rotating rubber impeller with vanes that bend then straighten as the impeller rotates to conform to the internal cam in the pump casing. Used in marine services.
Gear Pump	Positive displacement pump in which liquid is passed between two meshing gears and the surrounding casing. Used for clean oils and other viscous liquids.
Grinder Pump	A sewage pump designed to chop or cut solids into smaller pieces.
Horizontal Split Pump	Centrifugal pump that has a single, double suction impeller supported between two bearings. Used in higher flow applications.
Hydraulic Ram Pump	Cyclic water pump powered by hydro power, using the water hammer effect to develop pressure that allows a portion of the input water that powers the pump to be lifted to a point that is higher than where the water originally was. Used for pumping water to an elevation higher than the water source. Requires no outside source of power.
Jet Pump	A centrifugal pump with a venturi attached, either at the pump (shallow well) or in the well (deep well).
Lobe Pump	Employs two shaft drive lobes which mesh with each other but do not touch, due to the use of timing gears. Used for food, beverage, pharmaceutical and biotech applications.
Magnetic Drive Pump	A seal-less centrifugal pump transmitting torque from the motor to the impeller using a rotating outer magnet which transmits the magnetic flux through a can to an inner magnet that is attached to the impeller. Used for pumping chemicals, hydrocarbons or other liquids difficult to seal.
Metering pump	Type of reciprocating positive displacement diaphragm pump that has a very low flow rate. Used to meter low doses with high accuracy, for chemical treatment applications.
Mixed Flow Pump	Functions as a compromise between radial and axial flow pumps, the fluid experiences both radial acceleration and lift and exits the impeller somewhere between 0-90 degrees from the axial acceleration.
Multistage Pump	A pump that utilizes multiple impellers, sometimes to boost pressure or increase the depth of a deep well pump.
Peristaltic Pumps	Also known as a hose pump that has a roller or shoe that squeezes a tube or hose as it rotates. Used in applications where solids or corrosive liquids exist.
Piston Pumps	Pumps that employ double acting reciprocating pistons. Used in oil production and high pressure applications. Utilizes some type of sliding scale.
Plunger Pumps	Pumps that are built with 3 or 5 single acting reciprocating plungers. Used in oil or high pressure applications. Works on close tolerance.

Positive Displacement Pump	This pump does not have impellers, but instead relies on rotating or reciprocating parts that directly push liquid in an enclosed volume, until enough pressure is built up to move the liquid into the discharge system. Used in low flow, high pressure, high viscosity or fragile solid applications.
Progressive Cavity Pump	A type of positive displacement pump that transfers fluid by means of the progress, through the pump, of a sequence of small fixed shape, discrete cavities as the rotor is turned. Applications include: oil, slurry, and sewage pumping.
Regenerative Turbine Pump	Type of pump in which the fluid takes multiple trips through the vanes of the impeller increasing flow and pressure. Used in boiler feed applications.
Roller Pump	Employs rollers that revolve utilizing centrifugal force inside the pump housing to force a liquid through the outlet to the nozzle. Used for agricultural applications and industrial spraying.
Sand Pump (Plunger Sand Centrifugal)	A type of plunger pump that removes chopped-up drill core from a drill hole.
Screw Pumps (Gear, Auger) (See Auger)	Built with two inter-meshing screws, driven by timing gears, these pumps are used in fuel transfer, and other applications requiring high flow rates of viscous liquids. See Auger.
Self-Priming Pump	A centrifugal pump having the capability of dispersing a certain amount of air from its pump body, assuming the pump has been primed initially, when operating under a suction lift; to free itself of entrained gas without losing prime and to continue normal pumping operation without attention.
Sewage Pump	A pump designed to pump raw sewage water.
Shallow-Well Jet Pump	A type of pump that will work to a maximum depth of about 25 feet. The water returns through a venturi orifice and is either attached or pre-cast into the pump body to assist with lift. See Jet Pump.
Single-stage Submersible Pump	A submersible pump with only one impeller.
Slurry Pump	A pump that handles abrasive slurry in mining, procession, dredging and slurry applications.
Spur-gear Pump (Internal Gear)	Utilizing a "gear within a gear" system, the inter-meshing gear provides pockets of liquid which rotate and force liquid from the pump. Used in industrial applications to pump fluids such as fuel, glycol and asphalt.
Submersible Pump	Pumps with an enclosed motor that are able to be submersed. Used in sump, dewatering and irrigation applications.
Trash Pump	Self-priming centrifugal designed to handle rocks and other solids, used in dewatering applications.
Utility Pump	A versatile submersible pump similar to a sump pump.

Vane Pumps	These pumps employ a rotor with vanes located in slots, rotating inside an eccentrically shaped casing. Used in transferring oils and other viscous liquids.
Vertical Sump Pump	These pumps are built with a vertical shaft supported in a center column to allow the motor to run above the pumped product. Used in sump applications.
Vertical Turbine Pump	Vertical shaft pump that is designed to fit in a bore-hole well or for short coupled units, rivers or ponds. Used for irrigation and booster applications.
Vortex Pump	A type of pump used for excessive solids. The impeller is recessed into the volute and pumps by creating a vortex within the chamber.

Associations/Organizations

ANSI	American National Standards Institute	www.ansi.org
API	American Petroleum Institute	www.api.org
ARCOSA	American Rainwater Catchment Systems Association	www.arcosa.org
ASIC	American Society of Irrigation Consultants	www.asic.org
ASLA	American Society of Landscape Architects	www.asla.org
ASME	American Society of Mechanical Engineers	www.asme.org
AWWA	American Water Works Association	www.awwa.org
CE	Consumer Electronics Association	www.ce.org
CSA	Canadian Standards Association	www.csagroup.org
D.I.N. Standard	Deutsches Institut für Normung	www.din.de/en
EPA	Environmental Protection Agency	www.epa.gov
EASA	Electrical Apparatus Service Association	www.easa.com
FM	Industrial and Commercial Product Certification	www.fmglobal.com
IA	Irrigation Association	www.irrigation.org
ISO	International Standards Organization	www.iso.org
NAHAD	National Association for Hose and Accessory Distributors	www.nahad.org
NEC	National Electric Code	www.nec.com
NEMA	National Electrical Manufacturers Association	www.nema.org
OSHA	Occupational Safety and Health Administration	www.osha.gov
UL	Underwriter's Laboratories	www.ul.com