

Computerized Irrigation Manufacturers

GOLF COURSE NEWS EXCLUSIVE SURVEY	Computerized Irrigation Manufacturers					
	Rain Master Evolution	Solatrol LEIT-LINK	Thompson Mark 1	Hunter ETC Satellite & GIMS Central	Rain Bird Maxi System V	The Toro Company Network 8000
Is system PC dedicated?	No	No	Yes	No	Yes	No
Can system control non-irrigation equipment?	Yes	Yes	Yes	Yes	Yes	Yes
Is system Evapotranspiration Rate-based?	Yes	Yes	Yes	Yes	Yes	Yes
How many weather stations can it monitor?	4	None	1	1	8	1
Is information downloaded to satellite or stored in computer?	Both	Both	Downloaded	Satellite stored	In computer	Downloaded
When installing into existing irrigation system, can you simply install controllers and satellites without changing hardware?	Yes	No	Yes	Yes	Yes	Yes
Are computers and satellites reverse compatible when one or the others upgrade to a new version?	Yes	Yes	Yes	Yes	Yes	No
What computer system must be used?	IBM OS/2	Solatrol	Apple Mac II	IBM comp.	IBM comp.	IBM comp.
How many U.S. service centers available?	7	1	7	39	100	50
Do your satellites have internal uninterruptible power supply?	No	Yes	No	No	No	Yes
Does your system include a constant-voltage transformer at every satellite?	No	Light-energized	No	No	Yes	Yes
How many satellites can your system operate?	2,500	Unlimited	"4,000"	168+	224	800
What is your hardware guarantee (in years)?	3	5	1-3	1-2	1-3	1

Pumping Stations

Constant vs. Variable: Which frequency drive suits you?

By PETER BLAIS

If any superintendent needs convincing he should "go with the flow" toward variable frequency drive (VFD) pumps, just ask Virgil Robinson.

Robinson is head superintendent at 54-hole Desert Mountain in Scottsdale, Ariz. Desert Mountain's older Renegade and Cochise courses use constant-frequency pumps for irrigation exclusively. The Geronimo has a combination of VFD and constant-frequency units.

"Our electrical costs are 18 to 20 percent lower on the Geronimo course because of the VFD pump," Robinson said. "I would recommend VFDs to just about anyone."

VFDs afford economic advantages because they operate much more efficiently than constant frequency systems. Robinson offered the following example:

Say a golf course had three constant-frequency, 500-gallon-per-minute capacity pumps, but needed just 1,200 gallons of water per minute. To water the turf, a superintendent must run all three at full capacity, but limit the output of the the third to just 200 gallons per minute by using control valves.

"Using those valves wastes electricity," Robinson said.

On the other hand, a superintendent with two constant-frequency, 500-gallon-per-minute pumps and a VFD unit could spread the exact amount of water he needed without wasting electricity. To do that, he would run the two constant pumps full capacity. The VFD's output could be adjusted to 200 gallons per minute by simply changing the frequency

of the pump drive. No control valves are needed to interrupt water flow and no electricity is wasted.

"VFDs fill in the gaps without wasting power," Robinson explained.

Although VFD pump technology has been available for more than 20 years, lower manufacturing costs and improved technology made them popular for golf course irrigation beginning about five years ago.

Consequently, Desert Mountain's older Renegade and Cochise layouts, both opened in 1987, have only constant-frequency pumps. Renegade has a 125-hp, two 75-hp and a 10-hp submersible jockey pump while Cochise labors along with constant-frequency 100-hp, 75-hp and 50-hp pumps and 10-hp jockey unit.

Geronimo opened two years later with a 125-hp VFD as well as two 75-hp constant-frequency pumps and a 10-hp jockey.

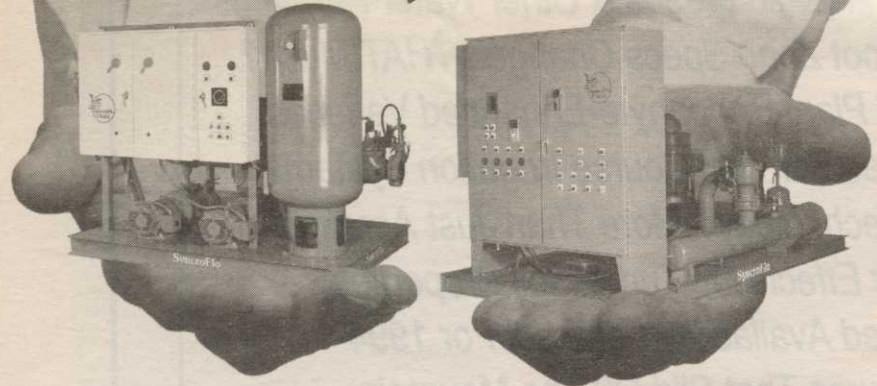
"I would never buy four VFDs because of the extra expense," Robinson said. "One VFD does the job and makes the difference."

Desert Mountain's three courses have Bermudagrass tees and fairways and bentgrass greens. Each layout needs as much as 800,000 gallons daily.

Robinson's crew performs routine maintenance (replacing oil and gaskets) on the pumps. But with the increasing use of computerized pump systems, Robinson has entered into a maintenance contract with a local firm that inspects his system every three to four months.

"In this climate, if we lose our irrigation system, we have 24 hours before we begin losing turf. We can't afford to be without those pumps," he said.

Choices, choices.



To VFD or not to VFD

(or constant speed, centrifugal or vertical turbine, or simply upgrade the pump station you have?)

There isn't a single pump station solution. Depending on your choice, you can save time, money, energy and even your reputation. To help, SyncroFlo has written PUMP STATION SELECTION REPORT, a practical guide that reviews pumping system basics. It also has a check list of issues to address before deciding.

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