

## FREQUENTLY ASKED QUESTIONS

### Eclipse® Model 706

- **What is the ECLIPSE Model 706?**

The ECLIPSE Model 706 is a new and improved 4th generation Guided Wave Radar (GWR) transmitter. Although it looks very similar to the previous Model 705 from the outside, the design and performance improvements warranted a change in Model Number. With over 125,000 transmitters installed and operating worldwide, this major upgrade of the ECLIPSE transmitter encompasses over 19 years of Magnetrol GWR design and application experience. Significant hardware, firmware, and probe changes have been made to improve specifications, reliability, and overall performance.

- **What makes this unit different from any of the other previously released ECLIPSE transmitters?**

Unlike previous upgrades of the Model 705, where the improvements were primarily transparent to the average user, the Model 706 contains modifications that will be immediately obvious.

Several advantages that the new ECLIPSE Model 706 offers include:

- *An 8-line × 22 character graphic LCD display.*
  - *This display not only allows larger characters to be shown, it also allows us to display an Echo Curve at the transmitter.*
- *4-button keypad similar to the Models R82 and 355.*
- *Fully encapsulated electronics with gasketed LCD module, making the assembly “splash proof.”*
- *Die-cast aluminum and 316SS housings, making the transmitter much lighter.*

Other improvements consist of:

- *A larger, more powerful microprocessor has been incorporated into the design. This microprocessor has significantly increased the amount of memory available allowing us to include some exciting new features such as:*
  - *Volumetric capability with nine common tank shapes and a 30-point strapping table for uncommonly shaped vessels*
  - *Flow capability with two standard flumes and four standard weirs of various sizes*
  - *Data Logging, which can be programmed to save data/echo curves on either event-based or time-based conditions*
- *The measuring range has been increased from 75 feet (22 meters) to 100 feet (30 meters).*

## FREQUENTLY ASKED QUESTIONS • Eclipse® Model 706

- **What would you say are the three main features/benefits of the new Model 706?**

Although, as shown above, there have been numerous improvements, the three top features/benefits of the new Model 706 are:

- *Improved Signal Strength – The Model 706 has a transmitted GWR signal that is twice as large as the existing Model 705. That stronger signal, along with a patented Diode Switch Technology circuit and improved receiver circuits, results in a Signal-to-Noise ratio that is almost three times higher than the competition.*
  - *The resulting benefit is a more robust signal and increased reliability in those tough low dielectric applications.*
- *Improved Diagnostics – The graphic LCD display allows us to not only show the user “what is wrong,” but also offer some troubleshooting tips.*
  - *The benefit is reduced downtime.*
- *Wide range of Overfill probes – The Model 706 is the only device on the market that offers a complete range of Overfill capable probes, which allows the transmitter to detect true level, all the way up to the process connection. This is quite different from competitive devices, which often use algorithms to “infer level” in the top of probe dead zones. Magnetrol takes great pride in detecting the “true level” whenever possible.*
  - *The benefit of always measuring true level is more reliable performance and peace of mind.*

- **Is the Model 706 backward compatible with older Model 705 probes?**

No, although this was a serious consideration in the early development of the project, it was decided that no compromises were to be made in the primary goal of offering a transmitter with optimum performance.

- **Will the ECLIPSE Model Number structure remain the same?**

The 10-digit model number structure of the transmitter will essentially be the same. However, in order to include several new options (and eliminate the standard “X” orders) the probe model number will now be 15-digits in length.

- **Will the ECLIPSE Model 705 DTM operate with the new ECLIPSE Model 706 transmitters?**

No. A brand new, enhanced PACTware™ DTM is being released for the Model 706. This new DTM will offer improved troubleshooting capability and be much easier to navigate.

- **Are any of the new ECLIPSE Model 706 transmitters suitable for SIL applications?**

Yes, in fact, the Model 706 is Certified for use in SIL 2/3 applications.

- **Are there any improvements to the interface operation with the Model 706?**

Yes, the Model 706 now has the ability to perform in interface applications that have an upper dielectric constant as high as 10 (as opposed to the previous maximum upper dielectric of 5 for the Model 705).

## FREQUENTLY ASKED QUESTIONS • Eclipse® Model 706

- **It sounds like a lot of extra capability has been included in the Model 706....is the device more complicated to use?**

Absolutely not. As we do with all products, Magnetrol took great care in making the Model 706 easy to use. Although the menu structure is now hierarchal “a tree-like menu structure” as opposed to the looping, linear Model 705 menu, and you may see some differently worded parameters, the ECLIPSE Model 705 is still a very user-friendly device. An average ECLIPSE user will be able to configure the new transmitter just as easily as with the existing product.

- **Did this extra capability affect the response time or turn-on time of the Model 706.**

No, the response time (less than 1 second) and the initialization time (less than 10 seconds) of the new Model 706 are still the best in class. As a comparison, many of the competitive GWR transmitters on the market today take up to 45 seconds to begin outputting valid measurements.

- **Were there any probe improvements?**

Even though we had three previous generations of transmitters, the basic probe design remained the same since the Model 705 was introduced in 1998.

Therefore, to maintain our original design goal of not compromising performance, new probes were developed for the Model 706. Some improvements include:

- *No cavity at the top of probe to hold water when no transmitter is attached*
- *Positive –going fiducial to better differentiate the negative-going level signals from the fiducial*
- *New glass ceramic seal*
- *Complete line of coaxial and caged coaxial Overfill probes*
- *Maximum temperature increased to +850 °F (+450 °C)*
- *Segmented Enlarged coaxial probes as standard option*
- *All coaxial probes have interface outer tubes*
- *Variety of spacer options as standard*

