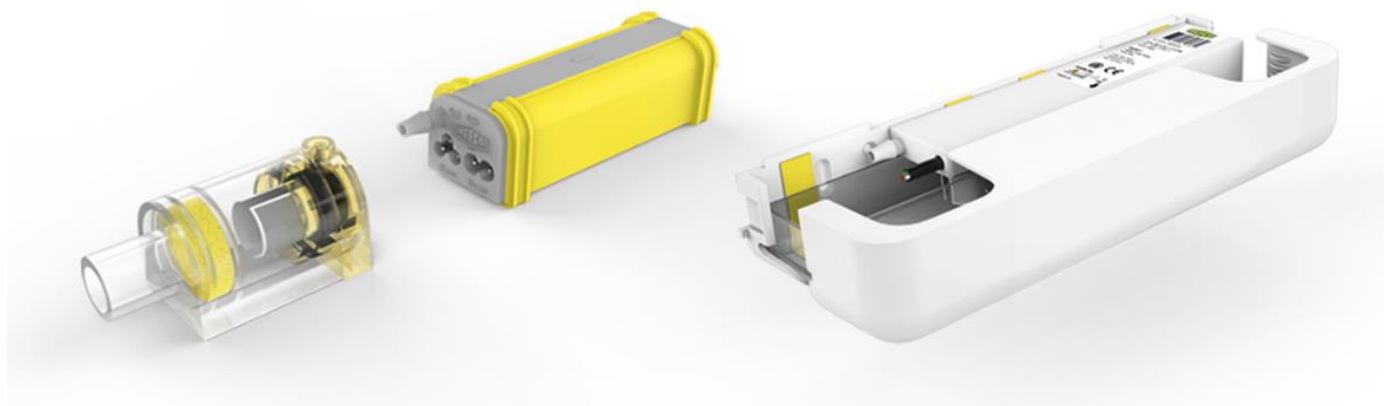


REFCO releases two new Condensate Pumps

with unsurpassed functionality.

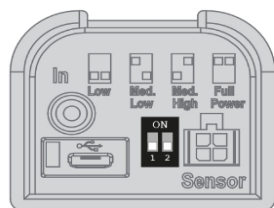
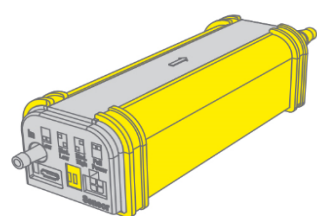


After more than two and half years of research and development the next generations of REFCO condensate pumps are ready for the world market. These patented new condensate pumps include six new features to greatly assist distributors and installing contractors. Additionally to the six new features listed below these pumps have multiple new accessories to guarantee they are correctly installed and operate with unrivaled performance.

The following text begins with a through explanation of the six new product features followed by its particular benefit to the distributors and the installation contractors. Lastly, and equally important is a brief explanation of the underlying installation and application challenges that drove the new designs and features.



Quiet Mode:



Low
up to 18K Btu/h
(5.3kW)



Medium Low
up to 42K Btu/h
(12kW)



Medium High
up to 72K Btu/h
(21.1kW)



Full Power
up to 120K Btu/h
(35kW)

The new condensate pumps can be manually configured during installation to optimize its flow and sound performance. This allows a much better match between the air conditioning system requirements and the pump. The pumps have two separate dip-switches thus allowing four different power settings: Low, Medium Low, Medium High, and Full Power. Changing the power configuration via the dip-switches will modulate the power, flow, and also the sound parameters.

More power = more sound = more flow, conversely Less power = less sound = less flow. REFCO gives the market and installers a new pump with a vast application range plus precise control over how the pump will operate.

The benefit of this feature allows installers to choose the appropriate pump power configuration for their individual job application. Not only would it use less power, it will also mitigate potential sound objections.

The genesis of this feature stems from the exceptionally wide kW (Btu/H) capacity range of air conditioning systems. Distributors and manufacturers cannot know which particular system size these pumps will be installed with or how much relative humidity the space has where they are installed. So we designed a pump that can be installed on A/C systems ranging from 1.75kW to 35kW (6,000 Btu/H to 120,000 Btu/H.) Our water-flow ranges from 1L/Hr. to 42L/Hr. (0.25 Gal. to 11Gal. /Hr.)



LED Check		No Power	○ (off)	○ (off)	○ (off)	○ (off)	○ (off)	Pump is miswired or no incoming voltage. Alarm fuse has been burned. Problem with A/C system or alarm is miswired.
		Power up LED sequence	1 sec Red/Green	○ (off)	1 sec Red/Green	○ (off)	1 sec Red/Green	Alternating red/ green flashes 5x only then stop and go to standby (default relay operation).
		Standby waiting for water	1 sec Green	○ (off)	1 sec Green	○ (off)	1 sec Green	Blinking Green continuously.
		Pumping water	Solid Green on	●	●	●	●	Running in low, med low, med high, or high power config. normal operation.
		High water level mode	1 sec Red	○ (off)	1 sec Red	○ (off)	1 sec Red	Running above high water level.
		Alarm relay activated	Solid Red on	●	●	●	●	Pump cannot keep up with water input. Prevent flooding break power to A/C.
		Reconfigure code	3x red, 3x green	○ (off)	3x red, 3x green	○ (off)	3x red, 3x green	Pump has had 3 extra long run cycles, reconfigure for more power.

No more guessing is required. The new condensate pumps have a long life; two color LED. Using LED indicators is nothing new in the HVAC/R industry. However, it is very new to the condensate pump market. This LED can immediately show installers and service technicians the current status of the pump including: No power, Current Configuration of Alarm Relay (NO/NC), Standing by waiting for water, Pumping water, Approaching maximum flow, Alarm relay activated, and it even can indicate to the service engineer asking for more power if it was originally configured with too low of a power setting.

The benefit of this feature is achieving better initial product installations and accelerating troubleshooting and service call diagnostics. This feature allows quick visual feedback to help service engineers decide if the condensate pump is or is not part of their A/C system problem.

The origin of this new feature stems from service engineers around the world asking similar questions. These questions and more are all answered immediately simply by looking at the LED blink sequence.

- How do I know if this pump is working properly?
- Is this condensate pump breaking power to the indoor evaporator?
- Is this condensate pump wired up correctly?
- Is the internal fuse burned?
- What is the current position of the alarm relay?
- Is this pump sufficient for the condensate water flow in this installation?



USB Connection:

Serial Number
NH1131244

Manufactured Date (DD-MM-YYYY)
11-11-2016

Installation Date (DD-MM-YYYY)
05-03-2017

Number of Pumping Cycles (ON/OFF)
177

Number of ALARM Relay Activations
3

Total Powered Time (Minutes)
126720

Current Capacity Settings
Med High (1=OFF 2=ON)

Total Pumping Operation Time (Minutes)
88


Total Time in ALARM (Minutes)
1


COMM Port Selection
▼

Number of Days Pump Cycled (Min 1x)
32

ALARM Relay Operation
FAIL-SAFE

**HVAC/R
Service Products**



ON

 1 2

Collect Data
from Pump

Print/Create File

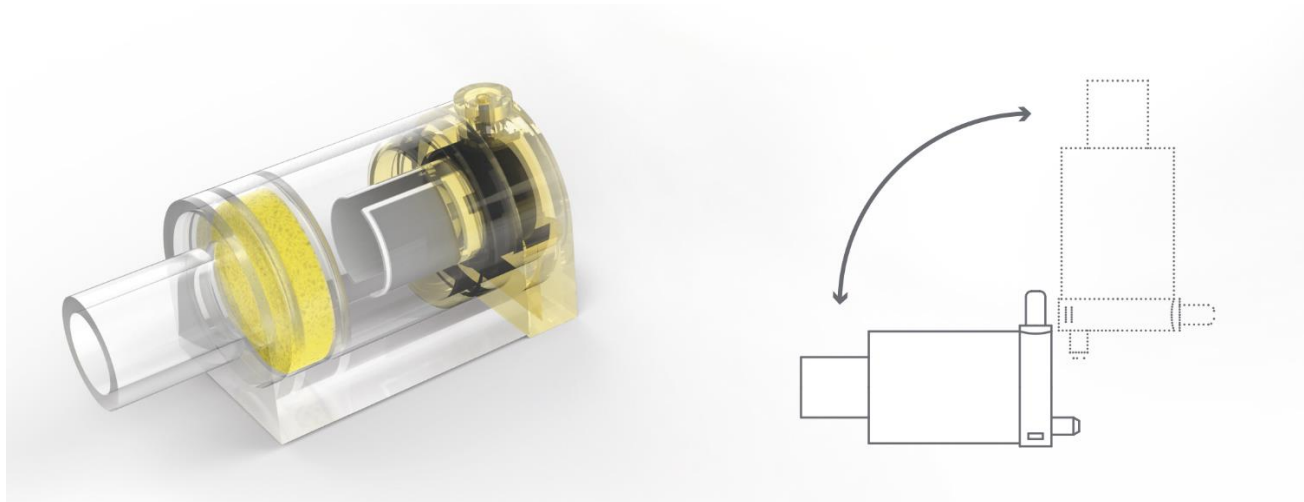
This unique product feature allows installers, wholesalers and distributors easy and complete access to review individual pump history. All that is required is a USB cable and a computer that is connected with the internet. By plugging into the pump you can immediately see the product serial number, manufacture date, installation date, total number of cycles, run hours, alarm relay activations, total time in alarm mode, current alarm relay configuration and current power settings. All of this data can be downloaded for future reference.

The benefit of this feature allows installers and wholesalers to quickly view the operational history of a particular pump to evaluate what has been happening to the pump, if a pump is still covered under warranty and whether or not it has been mis-applied in the field. Finally, installers or distributors can review operational history to better select pumps for specific applications to enhance end user satisfaction.

The reason this feature was developed stems from shipping and shelf time. Refco products have a full two year product warranty. Previously our worldwide distributors had no way to determine how long a particular product took during transportation and how long it may have been warehoused in stock before its sale. These challenges are now easily resolved by a simple USB connection.



Digital Water Sensor:

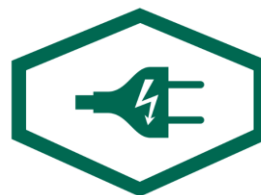


This product feature comes from over 25 years of experience working with digital water sensing technology with 19 years applying this technology inside condensate pumps. Years ago REFCO and its subsidiaries realized the inherent disadvantages of a simple float switch using a Hall-effect magnetic sensor. Simply put they get stuck, are limited to on/off operation, they must be level, and it is easy to install the float ring upside-down rendering them useless. Digital sensor technology has many advantages. Although the digital sensor technology is nothing new to REFCO, the propriety software driving the new pumps performance is completely new to take full advantage of our digital performance possibilities.

- Digital sensors cannot not get stuck, because they have no moving parts.
- Digital sensors are considerably more accurate in sensing water level than a Hall –effect magnetic sensor.
- Digital sensor technology senses water level 50 times per second for smooth pump operation.
- Using software with digital sensors allows for variable power and variable water flow.
- Digital sensors are completely programmable to customize exact pump response and alarm activation.
- Installers have more choices for sensor orientation and they do not need to be level.
- Allows for pump to always start softly and slowly to avoid customer sound complaints.

The benefit of using digital water sensor technology is digital sensors are more reliable, more accurate and much less fussy about how they are installed inside an air conditioning unit. This allows installers to make easier condensate pump installations with fewer call backs from the end user.

The driving force behind this innovation is to rapidly and precisely monitor the condensate water exiting a system evaporator coil and proportionally power the pump according to the increasing and decreasing condensate water. Further, using digital sensors greatly assists to avoid installation errors in the field and are inherently more efficient than old fashioned on/off operated pumps commonly found in our industry.



Universal Application:

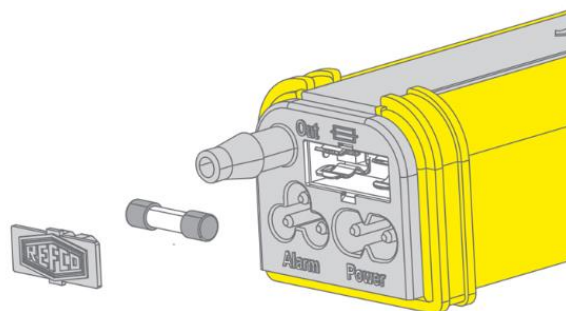
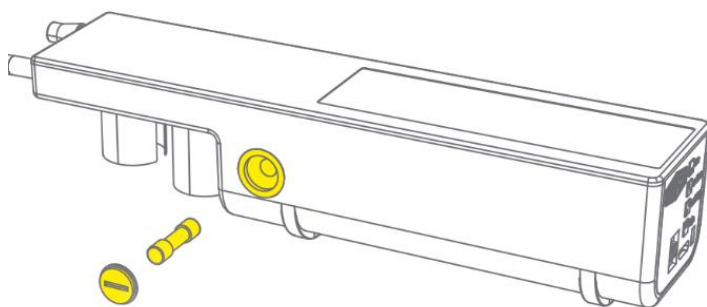
The title of this feature says it all. By developing a condensate pump that has universal power input (100-240VAC) and a water flow range exceeding 42L/Hr. (11Gal./Hr.) OEM manufacturers, HVAC/R distributors and installers can now purchase and stock a single pump that will meet more than 90% of the various system requirements. There is no longer a need to stock four different condensate pumps one for maximum flow and another for minimum flow both pumps in either 110v or 220v to appropriately match system requirements found in the field. The new REFCO pumps now have everything your various jobs require all combined into a single product.

The benefit is very easy to understand, parts warehouses, service vehicles and distributors only need to stock a single product. This saves time, space and money across the entire supply chain.

The desire to develop these features originates with the OEM air conditioning manufacturers. By necessity there are dozens of different A/C capacity sizes to correctly match different installed applications. These different A/C capacities produce different amounts of condensate water. Additionally, to make things more challenging, air conditioning manufacturers have different indoor evaporator voltage requirements. Manufacturing a universal voltage pump that has an exceptionally wide flow rate resolves both of these application and supply chain challenges.



Integrated Replaceable Fuse:



REFCO introduces the first condensate pumps with built-in 10Amp fuses. We understand how tight the space is inside duct free evaporators to land the electrical wiring connections. In the past condensate pump manufacturers gave you two choices; they either supplied a, "field installed" fuse holder and asked you to somehow fit it into the already crowded control box, or they built-in a fuse that was not accessible nor replaceable. Now those problems are over.



Integrating a replaceable fuse into our new pumps ensures that they are installed within the alarm circuit with no extra labor or space required from the installer. This not only protects the pump from potential electrical problems originating from the indoor evaporator, it also protects the pump and fancoil against installations where the wires are wrongly landed to the screw terminals. Instead of possibly destroying a new pump by mis-wiring it, now you only need to replace an inexpensive fuse and you are ready to continue the installation.

The need to design this feature comes from actual system installations in the field. Duct free evaporator electrical components, for example large indoor fan motors require more power than a small condensate pump. If there is a large electrical draw from these components and the pump alarm relay is in-circuit powering the indoor unit, then very often that alarm relay is the weakest link in the chain. An electrical fault from an indoor evaporator component can damage or destroy low Amp rated alarm relays found inside condensate pumps. To further aggravate the problem, more often than not, "field supplied" fuses do not get installed at all.

To avoid this issue not only did Refco install a full 10Amp rated alarm relay but we also installed a 10A replaceable fuse to make our pumps the most robust and reliable on the market today.

These new condensate pumps also come with multiple accessories like our new patented *Star-tube* and more features like the, *Wet Start* and built in *Sediment traps* to further ease installation challenges, increase the product reliability, and make them exceptionally quiet.

***Pentru informatii suplimentare si cereri de oferta va rugam contactati
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