

EXCEL[®] XR

Metering Pump



EXCEL[®] XR Series

You can rely on LMI



EXCEL® XR METERING PUMP

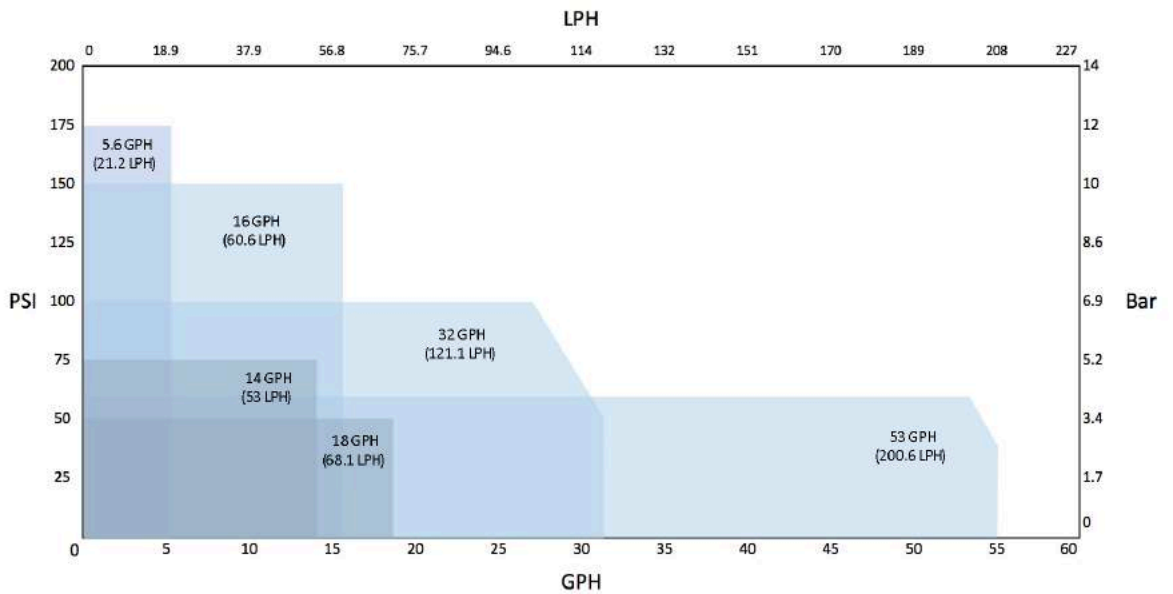
Introducing the expanded functionality of the EXCEL® XR chemical metering pump: Engineered to meet today's most demanding standards for accuracy, reliability, and process control flexibility. EXCEL XR is not just another metering pump, but one built using the latest technology for the most demanding applications.

LMI designed the EXCEL XR series from the ground up based on valuable feedback received from our customers as well as treatment plant maintenance, operators, and industry experts.

The EXCEL XR metering pump features a variable speed drive allowing full control of the stroke profile for maximum control of the chemical going into your process. In addition, it also features a wide variety of control options that are easily configured using the intuitive user interface.

Whatever your application, the EXCEL XR metering pump is ready to be your go-to solution for your most demanding applications.

EXCEL XR Performance Chart



Expanded Features:

- **Increased flow range** from 16 - 53 GPH (60-200 LPH) available for added control over your process
- **StayPrime™ Degassing Technology** mitigates the risk of losing prime by automating a priming cycle after a preset amount of pump IDLE time. Now standard on all models
- **Alarm Log** to keep track of the date and time when any alarms occur.
- **Digital Input Configuration** now more flexible thanks to user defined options for any accessory.



Valued reputation

At LMI, we take pride in the relationships we've built and the partnerships we've formed. We work hard every day to earn the trust and confidence of our customers. We believe it's this reputation that sets us apart from the competition. Our goal is to manufacture world-class pumps and accessories and to respond to our customers' needs with a sense of urgency and mutual respect. Year after year, we continue to build more than just great pumps!

Culture of reliability

With 40 years of industry excellence, LMI continues to build superior products to meet our customers' toughest metering pump applications. LMI consistently delivers the most reliable, competitive range of metering pumps on the market today. Our professional and experienced research and development team continues to make huge strides in innovation for tomorrow.

Our global network

With strategically located manufacturing sites and channel partner experts to support you globally, LMI is with you wherever you are. Visit us online at lmpumps.com to find your local authorized representative.

Our commitment to quality

LMI is committed to delivering products of the highest quality standards to our customers. This commitment begins with a culture to continually improve our products and processes by implementing a quality management program based on best practices. Because of this commitment, LMI's pumps are the most reliable and well regarded pumps on the market.

Easy model selection

Selecting the right pump just got easier. No complicated configurations are necessary to find the right pump. With the Manual, Enhanced, and Communications models offered, simply pick the features that fit your needs (see page 6 for a complete list). Our models offer a wide range of functionality including backlit display, multilanguage, and 2-way communication to name only a few.



Pictured: Communications model

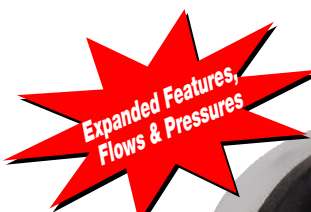
Features and Benefits

LMI is setting the standard for accuracy and reliability

LMI continues its commitment to innovation and technological advances with the expansion of the EXCEL XR Metering Pump. Designed to meet the most challenging application needs, the EXCEL XR metering pump brings a new level of accessibility and performance to the field.

A valued product offering:

- EXCEL XR series flow rates extend from 0.006 to 53 GPH (0.023 to 200.6 l/hr)
- Mechanically actuated diaphragm for years of reliable service
- +/- 1% steady state accuracy over 1000:1 turndown ratio



Efficient mechanically actuated diaphragms

Maximum evacuation on every stroke regardless of capacity setting

Universal technology platform

Able to adapt as technology evolves

Upgraded easy-to-use operation interface

Backlit color display and enhanced settings enable maximum application customization

Rugged construction

Upgraded NEMA 4X/IP 65 housing and protective cover for the harshest environments

Input/Output

- Manual model - Ideal level of standard features
- Enhanced model - Full range of features

Remote connectivity

Control and feedback in real time

- Enhanced model - Multiple methods of connection to process control signals whether analog or digital

Universal power supply

Providing maximum flexibility

Modbus RTU and Profibus DP enabled

For 2-way communication

Programmable Outputs

Dedicated communication

Programmable Input(s)

Dedicated communication



Pictured: Communications model

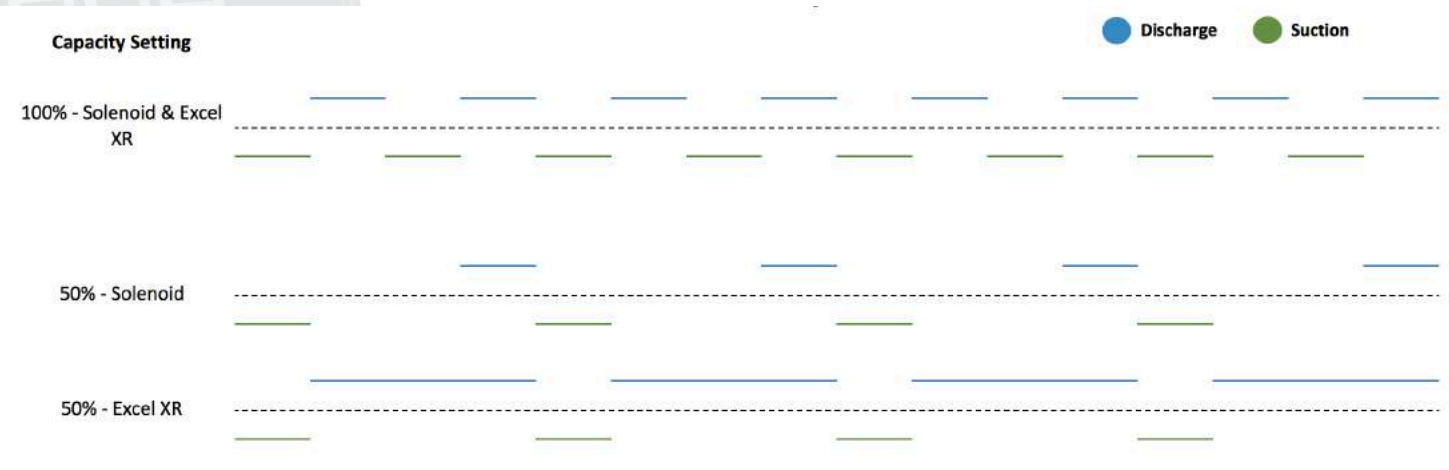
Multilanguage, user-friendly navigation

EXCEL XR's backlit color display allows for convenient navigation in five languages: English, French, Portuguese, Spanish, and Chinese. The enhanced control version is ready for digital or analog control interface and an extensive variety of inputs and outputs for various digital and analog devices. The EXCEL XR Communications model offers Profibus DP and Modbus RTU communications protocols to enable communication with many devices connected to the same network. EXCEL XR provides everything you need to assure you have complete control of your process.

Innovative Drive System

By using a variable speed drive, the EXCEL XR pump is able to achieve $\pm 1\%$ steady state accuracy over 1000:1 turndown ratio by controlling the stroke profile. As a result, the EXCEL XR provides consistent operation and greater flexibility for handling difficult chemicals such as polymers and other viscous fluids. When the EXCEL XR is activated it is always discharging chemical except during the brief suction stroke. There is no idle time like you see with traditional solenoid pumps at lower capacity settings.

Traditional Solenoid Pump vs EXCEL XR



In applications where chemicals, such as peracetic acid, are sensitive to suction stroke-speed due to high viscosity or degassing characteristics, EXCEL XR features "Slow Mode". Slow Mode allows the user to slow the suction stroke of the pump. This provides better high viscosity fluid handling for applications where a quick suction stroke isn't ideal. Engaging Slow Mode reduces the overall output capacity of the pump due to elongating the suction stroke duration.



Features and Benefits

Electronic control by model

Control Version

Manual model
Enhanced model
Communications model

	Manual model	Enhanced model	Communications model
User Interface			
Four Color Backlit graphical display	●	●	●
Flow rate or volume display (GPH, L/hr)	●	●	●
Capacity setting display	●	●	●
Start/Stop button	●	●	●
Mode/Select button	●	●	●
Full capacity (100%) button	●	●	●
Prime button	●	●	●
Active operation mode indication on display	●	●	●
Active alarm indication on display	●	●	●
Calibration status indication on display	●	●	●
Operation Modes			
Manual (Internal)	●	●	●
Analog [0/4-20 mA] (External)		●	●
Pulse [volume/pulse] (External)		●	●
Batch (External)		●	●
Cycle Timer (Internal)		●	●
Timed event (Internal)		●	●
Control Input			
Programmable digital contacts	1	4	4
User 1		●	●
User 2		●	●
User 3		●	●
Single level float switch	●	●	●
Dual low level float switch		●	●
Pulse control		●	●
Remote start/stop	●	●	●
Remote internal/external mode selection		●	●
Programmable analog inputs	0	2	2
Pacing		●	●
Tank level		●	●
Control Protocol			
Modbus RTU*			●
Profibus DP*			●

Control Version

Manual model
Enhanced model
Communications model

	Manual model	Enhanced model	Communications model
Control Output			
Programmable digital contacts	0	2	2
Pump running		●	●
Pump standby/stopped [not pumping but ready]		●	●
Alarm status		●	●
User alarm status		●	●
Internal/External mode indication		●	●
Pump stopped		●	●
Stroke pulse		●	●
Timed event running		●	●
Programmable analog output	0	1	1
Flow rate [4-20 mA correlates to 0 - max capacity]		●	●
Mirror analog input 1		●	●
Mirror analog input 2		●	●
Power supply for remote device [24V] (eg. Flow sensor)	0	1	1
Operation functions			
Capacity control by motor speed variation	●	●	●
Variable stroke profile (variable discharge speed/constant suction speed)	●	●	●
Slow suction mode for viscous or degassing media	●	●	●
Calibration function (single point)	●	●	●
Prime feature (max capacity) button, timer	●	●	●
Totalizer (strokes, volume, hours motor operation, number of power cycles)	●	●	●
Keypad lock (software driven with password)	●	●	●
Clock feature (date and 12 hour time)	●	●	●
Diaphragm replacement mode (sets stroke to extended position)	●	●	●
Display firmware revision	●	●	●
Load factory defaults	●	●	●
Battery to maintain date and time settings when main power is removed	●	●	●
EEPROM nonvolatile memory (configurations saved/powers up in last used mode)	●	●	●
Internal/External input control mode configuration	●	●	●
Alarm output mask configuration (configure which events trigger alarm output relay)	●	●	●
Analog input response curve customization		●	●
Input pulse width setting		●	●
Start/Stop via remote signal	●	●	●
Pump switch off on tank empty	●	●	●
Modbus RTU / Profibus DP protocol			●
StayPrime Degassing Technology	●	●	●
Alarm Log	●	●	●

* Must order pump configured for your control protocol

Making EXCEL XR pumps work for you

For integrators

Specifying EXCEL XR metering pumps for critical systems gives process systems integrators the best guarantee of reliability, accuracy, and performance in challenging environments.



For operators

Consider the value of installing an EXCEL XR metering pump when making updates to your equipment. The EXCEL XR pump series offers field-proven dosing technology, a state-of-the-art technology platform, and an easy-to-use navigation system all backed by authorized industry experts to support you long after the installation.

Options and accessories

A wide range of options and accessories are available to customize the EXCEL XR metering pump to your application.

Mechanically actuated diaphragm liquid end materials:

- Polypropylene
- PVDF
- 316L stainless steel

EXCEL® XR accessories include:

- Backpressure valves
- Safety valves
- Pulsation dampeners
- Calibration columns



Ingersoll Rand (NYSE:IR) advances the quality of life by creating comfortable, sustainable and efficient environments. Our people and our family of brands—including Club Car®, Ingersoll Rand®, Thermo King® and Trane®—work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; and increase industrial productivity and efficiency. We are committed to a world of sustainable progress and enduring results.



Contact your local representative to find out more about EXCEL® XR the intelligent pump that's making a name for itself.

www.lmipumps.com
www.excelxrpumps.com
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Literature #IR-59260.02 Rev 2019

7/2018