

EXCEL[®] XR[™]

Metering Pump

Manual, Enhanced, and Communications Models

The EXCEL[®] XR metering pump is a mechanically actuated diaphragm pump driven by advanced variable speed technology to provide the most accurate and reliable performance in the industry. This proven technology is easy to maintain and will provide years of maximum up-time service. Available in three control configurations, Manual, Enhanced, and Communications Models, the EXCEL XR pump fits seamlessly into the process control requirements of every application. The Manual model includes the ideal level of standard features, the Enhanced model provides a full range of capabilities, and the Communications model offers Profibus DP or Modbus RTU communication protocols for 2-way communication. All models come standard with a four-color backlit display, multilanguage options and remote operation options, all in a design platform that can adapt as technology evolves. The EXCEL XR metering pump provides everything you need for complete control of your process.



Applications

Whatever your application, the EXCEL XR metering pump can provide the performance you need. Designed for the specific requirements of municipal and industrial water and waste treatment, the EXCEL XR pump is suitable for a wide range of applications.

- Water treatment
- Waste water treatment
- General industry
- Agricultural
- Chemical
- Oil & gas
- Power generation
- Pulp & paper
- Textiles
- Other (contact your local authorized representative)



Certified to
NSF/ANSI 61 & 372

Performance Specifications

Turndown Ratio:	Up to 1000:1
Steady State Accuracy:	+/- 1.0%
Repetitive Accuracy:	+/- 3.0%
Linearity:	+/- 3.0%
Duty Rating:	Continuous

Features and Benefits

- Advanced easy-to-use operation interface with backlit color display and enhanced settings enable maximum application customization.
- Remote connectivity enables control and feedback in real time.
- Universal power supply providing maximum flexibility to power your pump: 100-240V, 50/60 Hz
- Multi-language navigation (English, French, Spanish, Portuguese and Chinese) for convenient operation anywhere in the field.
- Innovative drive system creates superior +/- 1% steady state accuracy over 1000:1 turndown ratio for greater flexibility of handling difficult chemicals.
- Optional liquid-end materials to maximize the life of the pump in challenging environments: polypropylene, PVDF, and 316L Stainless Steel.
- Mechanically actuated diaphragms for easy maintenance with years of field experience.
- Rugged construction with NEMA 4X/IP 65 housing and protective cover for the harshest environments.

OUTPUT CODE 2
5.6 GPH (21.2 LPH); 175 psi (12 bar)

Drive End	Note: Cordsets from the accessories table may be required for the customer to connect to desired input/output.								
Control	Description	Cordset Included		Part Number					
XRD12	Manual Control	-		-				See Note	
XRD92	Enhanced Control	4 Pin Cordset		54711					
XRDP2	Enhanced Control with ProfiBus	4 Pin, 5 Pin, 6 Pin Cordset		54711, 49035, 55199					
XRDM2	Enhanced Control with ModBus	4 Pin, 5 Pin, 6 Pin Cordset		54711, 49035, 55199					
Power Code	Voltage	Plug							
1	110/240V	110 - 120 VAC 1 Phase US Plug							
2	220/240V	220 - 240 VAC 1 Phase US Plug							
3	220/240V	220 - 240 VAC 1 Phase DIN Plug							
5	220/240V	220 - 240 VAC 1 Phase UK Plug							
6	220/240V	220 - 240 VAC 1 Phase Australia / New Zealand Plug							
Liquid End	Head	Seat	Balls	Check Valve Body	Max Turndown Ratio	Standard	RPM Kit	DN15 Conn.	
Standard Plastic									
A44AC	PP	TFE/P	Ceramic	PVDF	1000:1	RPM54771		RPM54772	
A44A1	PP	TFE/P	316L	PVDF	1000:1	RPM54778		RPM54779	
A44AT	PP	TFE/P	PTFE	PVDF	1000:1	RPM56409		RPM56410	
A74TC	PVDF	Ceramic	Ceramic	PVDF	200:1	RPM54773		RPM54774	
A74AT	PVDF	TFE/P	PTFE	PVDF	1000:1	RPM56409		RPM56410	
Standard Metallic									
A1411	316L	316L	316L	316L	1000:1			see below	
Slurry									
S1414	316L	316L	440C	316L	1000:1			RPM54776	
High Viscosity									
PE Tubing limited to 150 psi (10.3) Bar									
V44T1	PP	PTFE	316L	PP	1000:1			RPM54777	
Standard Plastic	Diaphragm	O-Rings	Fittings	Connections	Tubing Kit	RPM Kit			
A7T1	PTFE/PVDF	TFE/P	PVDF	Imperial Tube	1	-			
A7PN	PTFE/PVDF	TFE/P	PVDF	1/2" NPT/BSP	-	-			
A7M2	PTFE/PVDF	TFE/P	PVDF	Metric Tube	2	-			
A2FN	PTFE/PVDF	TFE/P	PVDF/PVC	DN 15 Female	-	see above			
A7DN (PVDF heads only)	PTFE/PVDF	TFE/P	PVDF	DN 15 Male	-	see above			
Standard Metallic									
A1PN	PTFE/316L	TFE/P	316L	1/2" NPT/BSP	-	RPM56407			
V1PN	PTFE/316L	FKM	316L	1/2" NPT/BSP	-	RPM54775			
Slurry									
V1PN	PTFE/316L	FKM	316L	1/2" NPT/BSP	-	-			
High Viscosity									
N4T3	PTFE/PVDF	-	PP	Imperial Tube	3	-			
XRD12	1	A44AC	A7T1						

OUTPUT CODE 3
14.0 GPH (53.0 LPH); 75 psi (5 bar)

Drive End	Note: Cordsets from the accessories table may be required for the customer to connect to desired input/output.								
Control	Description	Cordset Included		Part Number					
XRD13	Manual Control	-		-				See Note	
XRD93	Enhanced Control	4 Pin Cordset		54711					
XRDP3	Enhanced Control with ProfiBus	4 Pin, 5 Pin, 6 Pin Cordset		54711, 49035, 55199					
XRDM3	Enhanced Control with ModBus	4 Pin, 5 Pin, 6 Pin Cordset		54711, 49035, 55199					
Power Code	Voltage	Plug							
1	110/240V	110 - 120 VAC 1 Phase US Plug							
2	220/240V	220 - 240 VAC 1 Phase US Plug							
3	220/240V	220 - 240 VAC 1 Phase DIN Plug							
5	220/240V	220 - 240 VAC 1 Phase UK Plug							
6	220/240V	220 - 240 VAC 1 Phase Australia / New Zealand Plug							
Liquid End	Head	Seat	Balls	Check Valve Body	Max Turndown Ratio	Standard	RPM Kit	DN15 Conn.	
Standard Plastic									
A44AC	PP	TFE/P	Ceramic	PVDF	1000:1	RPM54771		RPM54772	
A44A1	PP	TFE/P	316L	PVDF	1000:1	RPM54778		RPM54779	
A44AT	PP	TFE/P	PTFE	PVDF	1000:1	RPM56409		RPM56410	
A74TC	PVDF	PTFE	Ceramic	PVDF	200:1	RPM54773		RPM54774	
A74AT	PVDF	TFE/P	PTFE	PVDF	1000:1	RPM56409		RPM56410	
Standard Metallic									
A1411	316L	316L	316L	316L	1000:1			see below	
Slurry									
S1414	316L	316L	440C	316L	1000:1			RPM54776	
High Viscosity									
V44T1	PP	PTFE	316L	PP	1000:1			RPM54777	
Standard Plastic	Diaphragm	O-Rings	Fittings	Connections	Tubing Kit	RPM Kit			
A7T1	PTFE/PVDF	TFE/P	PVDF	Imperial Tube	1	-			
A7PN	PTFE/PVDF	TFE/P	PVDF	1/2" NPT/BSP	-	-			
A7M2	PTFE/PVDF	TFE/P	PVDF	Metric Tube	2	-			
A2FN	PTFE/PVDF	TFE/P	PVDF/PVC	DN15 Female	-	see above			
A7DN PVDF heads only	PTFE/PVDF	TFE/P	PVDF	DN15 Male	-	see above			
Standard Metallic									
A1PN	PTFE/316L	TFE/P	316L	1/2" NPT/BSP	-	RPM56407			
V1PN	PTFE/316L	FKM	316L	1/2" NPT/BSP	-	RPM54775			
Slurry									
V1PN	PTFE/316L	FKM	316L	1/2" NPT/BSP	-	-			
High Viscosity									
N4T3	PTFE/PVDF	-	PP	Imperial Tube	3	-			
XRD13	1	A44AC	A7T1						

Note: Cordsets from the accessories table may be required for the customer to connect to desired input/output.

Drive End	Control	Description	Cordset Included	Part Number			
	XRD14	Manual Control	-	- See Note			
	XRD94	Enhanced Control	4 Pin Cordset	54711			
	XRDP4	Enhanced Control with ProfiBus	4 Pin, 5 Pin, 6 Pin Cordset	54711, 49035, 55199			
	XRDM4	Enhanced Control with ModBus	4 Pin, 5 Pin, 6 Pin Cordset	54711, 49035, 55199			
Power Code	Voltage	Plug					
1	110/240V	110 - 120 VAC 1 Phase US Plug					
2	220/240V	220 - 240 VAC 1 Phase US Plug					
3	220/240V	220 - 240 VAC 1 Phase DIN Plug					
5	220/240V	220 - 240 VAC 1 Phase UK Plug					
6	220/240V	220 - 240 VAC 1 Phase Australia / New Zealand Plug					
Liquid End	Head	Seat	Balls	Check Valve Body	Diaphragm	Max Turndown Ratio	RPM Kit
Standard PP							
A46VC	PP	FKM	Ceramic	PP	PTFE	500:1	RPM54780
A46V1	PP	FKM	PTFE	PP	PTFE	500:1	RPM54784
A46AC	PP	TFE/P	Ceramic	PP	PTFE	500:1	RPM56405
A46A1	PP	TFE/P	316L	PP	PTFE	500:1	RPM56406
Standard PVDF							
A76VC	PVDF	FKM	Ceramic	PVDF	PTFE	500:1	RPM54780
A76AT	PVDF	TFE/P	PTFE	PVDF	PTFE	500:1	RPM56411
A76AC	PVDF	TFE/P	Ceramic	PVDF	PTFE	500:1	RPM56405
Standard Metallic							
A1611	316L	316L	316L	316L	PTFE	1000:1	see below
Slurry							
S1614	316L	316L	440C	316L	PTFE	1000:1	RPM54783
High Viscosity							
V46T1	PVC	PTFE	PTFE	PP	PTFE	1000:1	RPM54782
Standard PP	O-Rings	Fittings	Connections	Tubing Kit	RPM Kit		
N4PN	-	PP	1/2" NPT/BSP	-	-		
N4TN	-	PP	Imperial Tube	-	-		
N2FN	-	PP/PVC	DN15 Female	-	-		
Standard PVDF							
N2FN	-	PVDF/PVC	DN15 Female	-	-		
N7PN	-	PVDF	1/2" NPT/BSP	-	-		
N7TN	-	PVDF	Imperial Tube	-	-		
Standard Metallic							
A1PN	TFE/P	316L	1/2" NPT/BSP	-	RPM56408		
V1PN	FKM	316L	1/2" NPT/BSP	-	RPM54781		
Slurry							
V1PN	FKM	316L	1/2" NPT/BSP	-	-		
High Viscosity							
N4P4	-	PP	1/2" NPT/BSP	4	-		
N4T4	-	PP	Imperial Tube	4	-		

Tubing Kit 1

- Injection Valve
- Foot Valve
- 1 Weight (Suction Tubing)
- 16' PE Tube 3/8"
- 20" Reinforced PVC Hose 1/4" x 1/2"

Tubing Kit 2

- Injection Valve
- Foot Valve
- 1 Weight (Suction Tubing)
- Metric Ferrules 6x12mm
- 6m Reinforced PVC Hose 6x12mm

Tubing Kit 3

- Injection Valve
- 2m Reinforced PVC hose 15x23mm (Suction)
- 3m PE Tube 1/2" (Discharge)
- 1 Suction hose fitting (1/2" FNPT x 15x23 hose) & 2 hose clamps

Tubing Kit 4

- 2m Reinforced PVC hose 15x23mm (Suction)
- 1 Suction hose fitting (1/2" FNPT x 15x23 hose) & 2 hose clamps

ACCESSORY KITS - OUTPUT CODE 2 & 3

Imperial Connections		Metric Connections	
Part Number	Description	Part Number	Description
PP Head, 316 SS Balls			
58982	Injection Valve, PTFE	58982	Injection Valve, PTFE
58987	Foot Valve, Mixed	58987	Foot Valve, Mixed
59008	Connection Kit, 0.375 and 0.25x0.5 Tubing Kit, includes:	59009	Connection Kit, 6x12 Tubing Kit, includes:
10342-10	3/8" TUBE X 10 FT	36181-6M	8mm TUBE X 6m
54342-20	1/4" x 1/2" HOSE X 20 FT	70121-6M	6x12mm HOSE X 6m
PP Head, Ceramic Balls			
58983	Injection Valve, Mixed	58983	Injection Valve, Mixed
58985	Foot Valve, Aflas	58985	Foot Valve, Aflas
59008	Connection Kit, 0.375 and 0.25x0.5 Tubing Kit, includes:	59009	Connection Kit, 6x12 Tubing Kit, includes:
10342-10	3/8" TUBE X 10 FT	36181-6M	8mm TUBE X 6m
54342-20	1/4" x 1/2" HOSE x 20 FT	70121-6M	6x12mm HOSE X 6m
PVDF Head, Ceramic Balls			
58983	Injection Valve, Mixed	58983	Injection Valve, Mixed
58986	Foot Valve, PTFE	58986	Foot Valve, PTFE
59008	Connection Kit, 0.375 and 0.25x0.5 Tubing Kit, includes:	59009	Connection Kit, 6x12 Tubing Kit, includes:
10342-10	3/8" TUBE X 10 FT	36181-6M	8mm TUBE X 6m
54342-20	1/4" x 1/2" HOSE x 20 FT	70121-6M	6x12mm HOSE X 6m
High Viscosity			
		58984	Injection Valve, HV
		59010	Connection Kit, Hose Clamp
		59013	Tubing Kit, HV

ACCESSORY KITS - OUTPUT CODE 4

Imperial Connections		Metric Connections	
Part No	Description	Part No	Description
PP Head			
26758	Injection Valve, 0.5" Tube, PP, PTFE, Cer	26710	Injection Valve, NPT, PP, PTFE, Cer
25154	Foot Valve, 0.5" Tube, PP, PTFE, Cer	26015	Foot Valve, NPT, PP, PTFE, Cer
77384	Connection Kit, 0.5" Tubing		
PVDF Head			
33481	Injec. Valve, 0.5" Tube, PVDF, PTFE, Cer	38270	Injec. Valve, NPT, PVDF, PTFE, Cer
33480	Foot Valve, 0.5" Tube, PVDF, PTFE, Cer	38271	Foot Valve, NPT, PVDF, PTFE, Cer
77384	Connection Kit, 0.5" Tubing		
Input/Output Cordsets			
Part No.	Description	Application Notes	
48414	CORDSET, 5 PIN, 2 M / 6.6 FT	(J2) Digital output	
49035	CORDSET, 6 PIN, 2 M / 6.6 FT	(J1 & J4) Digital input & Analog output	
54711	CORDSET, 4 PIN, 2 M / 6.6 FT	(J3) Analog input	
55199	CORDSET, 5 PIN, 2 M / 6.6 FT	(C) ProfiBus/ModBus Communicaton	
Extension Cable Assemblies - 5 Pin			
Part No.	Description		
50503-3	Extension Cable, 3 M / 9.8 Ft		
50503-6	Extension Cable, 6 M / 19.7 Ft		
50503-15	Extension Cable, 15 M / 49.2 Ft		
50503-30	Extension Cable, 30 M / 98.4 Ft		
Extension Cable Assemblies - 6 Pin			
Part No.	Description		
50684-3	Extension Cable, 3 M / 9.8 Ft		
50684-6	Extension Cable, 6 M / 19.7 Ft		
50684-15	Extension Cable, 15 M / 49.2 Ft		
50684-30	Extension Cable, 30 M / 98.4 Ft		

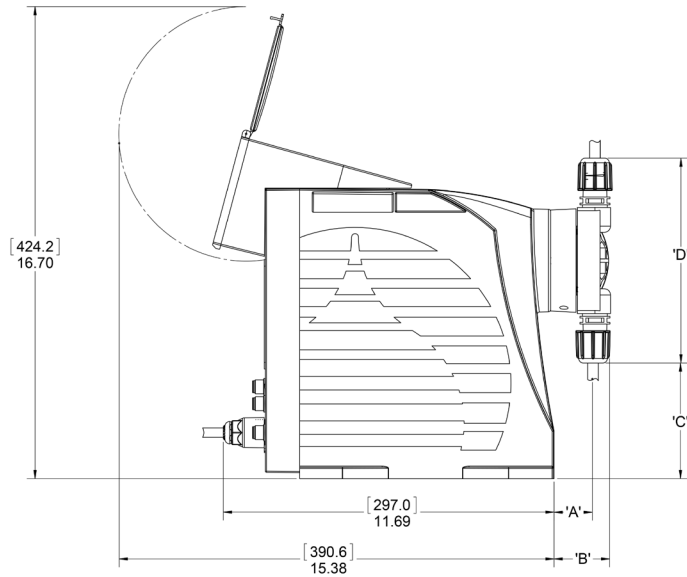
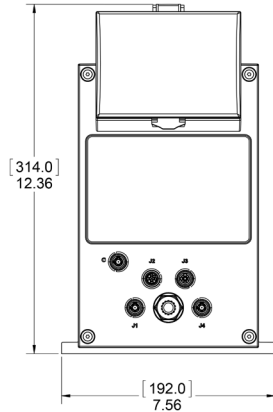
Electronic control by model

	Control Version		
	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
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*			●

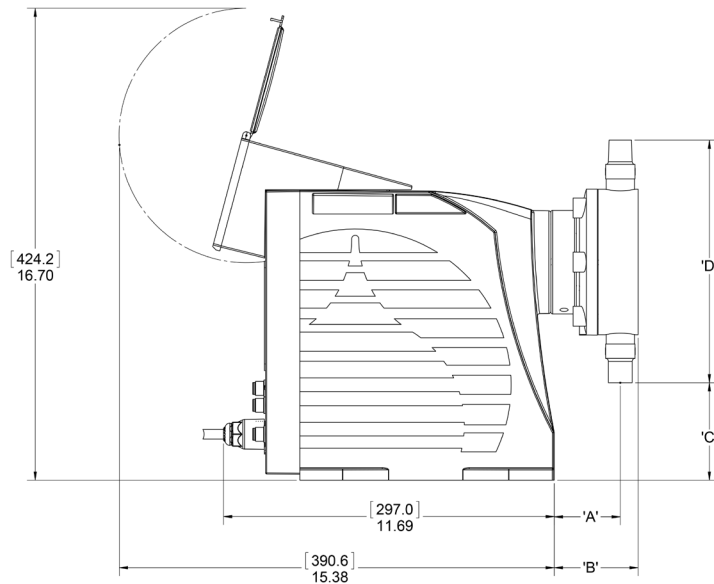
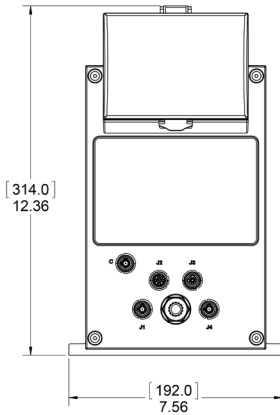
* Must order pump configured for your control protocol (See section table).

	Control Version		
	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		●	●
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			●

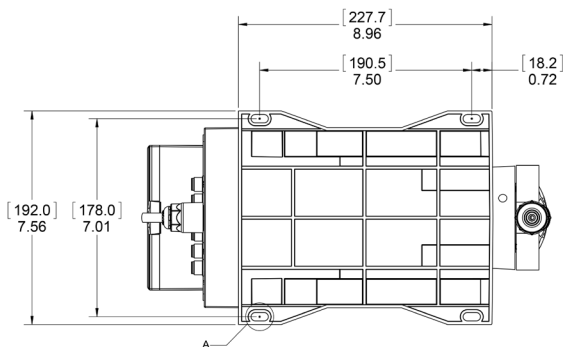
Drive Sizes: XRDx2x, XRDx3x



Drive Size: XRDx4x



Mounting Information (All drive sizes)



DRIVE	LIQUID END	A		B		C		D	
		INCH	[mm]	INCH	[mm]	INCH	[mm]	INCH	[mm]
XRDx2x XRDx3x	*TUBE CONNECTIONS: CODE A44, A74"	1.44	36.7	2.03	51.7	4.09	103.9	7.25	184.2
	*DN PIPE CONNECTIONS: CODE A44, A74"	1.44	36.7	2.00	50.7	2.45	62.2	10.54	267.7
	*STAINLESS HEAD AND SLURRY HEAD: CODE A14, S14"	1.38	35.0	2.01	51.0	3.70	94.0	8.03	204.0
	*HIGH VISCOSITY HEAD: CODE V44"	1.61	40.8	2.30	58.3	4.32	109.8	7.63	193.7
XRDx4x	*NPT CONNECTIONS: CODE A46, A76"	2.33	59.3	2.96	75.3	3.45	87.6	8.58	218.0
	*TUBE CONNECTIONS: CODE A46, A76"	2.33	59.3	2.96	75.3	2.82	71.6	9.84	250.0
	*DN PIPE CONNECTIONS: CODE A46, A76"	2.33	59.3	3.13	79.5	2.05	52.1	11.38	289.0
	*STAINLESS HEAD AND SLURRY HEAD: CODE A16, S16"	2.42	61.4	3.28	83.4	2.98	75.6	9.49	241.0
	*HIGH VISCOSITY HEAD (NPT DISCHARGE): CODE V46"	2.33	59.3	2.95	74.9	3.73	94.8	8.30	210.8
*HIGH VISCOSITY HEAD (TUBE DISCHARGE): CODE V46"	2.33	59.3	2.95	74.9	3.73	94.8	8.93	226.8	

We are a proud member of Accudyne Industries, a leading global provider of precision-engineered, process-critical and technologically advanced flow control systems and industrial compressors. Delivering consistently high levels of performance, we enable customers in the most important industries and harshest environments around the world to accomplish their missions.



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

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Literature #59261.02