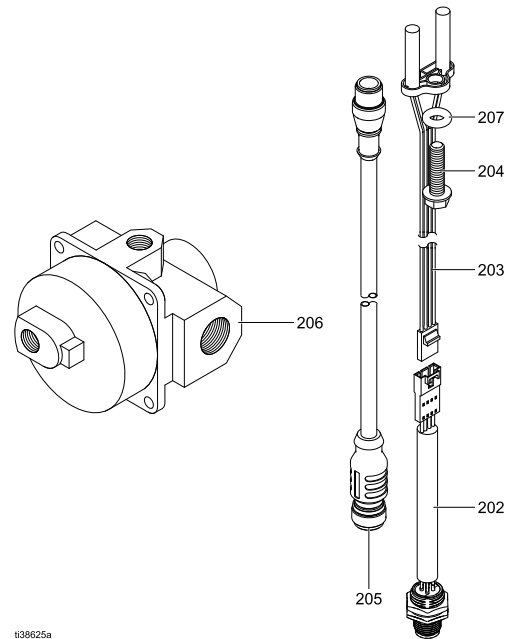



NXT Air Control Kit 19Y996

The air regulator (206) is used to control air into the Air Motor (G, see [Typical Installation, page 13](#)). The NXT reed switch assembly (203) monitors pump operation and provides control to the transducer I2P (201). The reed switch cable (205) connects the NXT reed switch assembly (203) to the 19Y486 Pump Control Module (A). The NXT reed switch conversion cable (202) allows the M12 reed switch cable (205) to connect to connect to the standard NXT air motor reed switch (203).

Ref	Part	Description	Qty
202	19Y997	SWITCH, reed, NXT, assembly	1
203	119700	SENSOR, reed switch	1
204	102730	SCREW, machine, hex washer head	1
205	19Y480	SWITCH, M12 harness connect	1
206	19Y479	REGULATOR, remote piloted, 3/4 in.	1
207	118605	O-RING	1



Technical Specifications for 19Y996

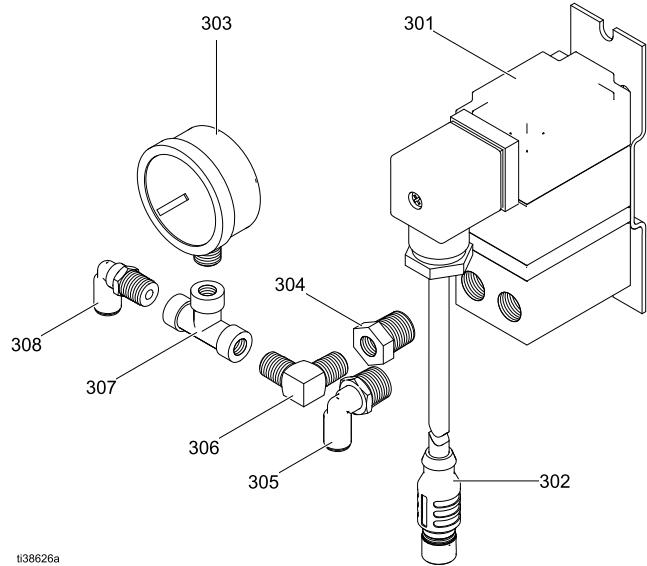
Reed Switch 119700	US	Metric
Electrical Ratings:		
Voltage	24 VDC	
Current	500 mA	
Power	10 W maximum	
Ambient Temperature	-40°F – 221°F	-40°C – 105°C
EX Ratings:		
Classification	"Simple Apparatus" in accordance with UL/EN/IEC 60079-11, clause 5.7 Class I, Div 1: Group D T4 	
Parameters	U _i = 17.9 V I _i = 500 mA P _i = 1.2 W C _i = 1.2 nF L _i = 6.0 μH L _i /R _i = 5.65 μH/Ω	

Transducer I/P Kit 24V001

Used for Air Motor air inlet control and Back Pressure Regulator control. For the Air Motor (G, see [Typical Installation, page 13](#)), the cable (302) connects to Port 8 on the 19Y486 Pump Control Module (A). For the Back Pressure Regulator (M), the cable (302) connects to Port 9 on the 19Y486 Pump Control Module (A).

Ref	Part	Description	Qty
301	---	TRANSDUCER, miniature	1
302	---	CABLE, F/C, I.S., 8 M	1
303	110436	GAUGE, pressure, air	1
304	100030	BUSHING	1
305	198178	ELBOW	1
306	110207	ELBOW	1
307	C19466	TEE	1
308	198171	ELBOW	1

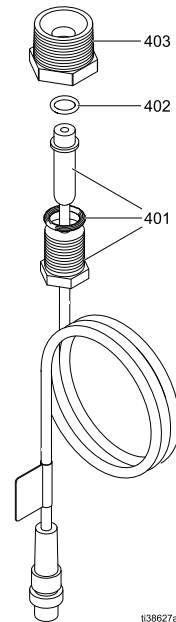
--- Parts not sold separately.



Pressure Transducer Kit for 4-ball Pumps 24R050 Pressure Transducer Kit for 2-ball Pumps 24Y245

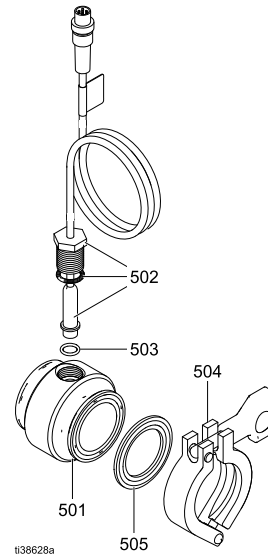
Pressure transducer kits are used to monitor the pump outlet pressure (R1, see [Typical Installation, page 13](#)) and pressure at the Back Pressure Regulator (R2, M). For monitoring pump outlet pressure (R1), the cable (403) connects to Port 7 on the 19Y486 Pump Control Module (A). For the pressure transducer (R2) at the Back Pressure Regulator (M), the cable (403) connects to Port 10 on the 19Y486 Pump Control Module (A).

Ref	Description	24R050 Part	24Y245 Part	Qty
401	ADAPTER, fitting, pressure sensor	16U440		1
402	PACKING, o-ring	119348		1
403	SENSOR, pressure, fluid outlet	16P289	15M669	1




Pressure Transducer Kit for Sanitary Pumps 24X089

Ref	Description	Part	Qty
501	MANIFOLD, 1.5 in. sanitary, transducer	17D233	1
502	SENSOR, pressure, fluid outlet	16P289	1
503	PACKING, o-ring	119348	1
504	CLAMP, sanitary, 1.5 in.	118598	1
505	GASKET, sanitary	120351	1



Technical Specifications for 24R050, 24Y245, and 24X089

Pressure Transducer Kits 24R050, 24Y245, and 24X089	US	Metric
Electrical Ratings:		
Voltage	5 VDC	
Full Scale sensitivity	20.00 mV/V	
Span At Max pressure	100 mV	
Ambient Temperature	32°F – 140°F	0°C – 60°C
EX Ratings:		
Classification	"Simple Apparatus" in accordance with UL/EN/IEC 60079-11, clause 5.7 Class I, Div 1: Group D T4 	
Parameters	U _i = 17.9 V I _i = 73 mA P _i = 1.3 W C _i = 900 pF L _i = 1.7 μH L _i /R _i = 6.6 μH/Ohm	

California Proposition 65

CALIFORNIA RESIDENTS

 **WARNING:** Cancer and reproductive harm — www.P65warnings.ca.gov.

Appendix A - Modbus Variable Map

To communicate through fiber optics with the E-Flo DC Control Module, reference the appropriate hardware as shown in manual 332356. That manual indicates various options for connecting fiber optic cables from the control module to the non-hazardous area. The following tables list Modbus registers available to a PC or PLC located in the non-hazardous area.

Table 3 shows the registers needed for basic operation, monitoring, and alarm control features. Tables 4 and 5 provide bit definitions as needed for certain registers. Table 6 shows the units and how to convert the register value to a unit value.

Table 3 Pump Configuration Registers

ADCM Modbus Register	Parameter Name	Range	Register Access
403100	timeHour_u8	0–23	Read
403101	timeMinute_u8	0–59	Read
403102	timeSecond_u8	0–59	Read
403103	dateYear_u8	0–99	Read
403104	dateMonth_u8	1–12	Read
403105	dateDay_u8	1–31	Read
403106	Active Alarms Upper	See Event Table	Read
403107	Active Alarms Lower	See Event Table	Read

403200	timeHour_u8	0–23	Read/Write
403201	timeMinute_u8	0–59	Read/Write
403202	timeSecond_u8	0–59	Read/Write
403203	dateYear_u8	0–99	Read/Write
403204	dateMonth_u8	1–12	Read/Write
403205	dateDay_u8	1–31	Read/Write
403206	displayPassword_u32	0-9999	Read/Write
403207	displayDateFormat_enum	0 = MMDDYY 1 = DDMMYY 2 = YYMMDD	Read/Write
403208	PressureUnits	0 = PSI 1 = BAR 2 = MPA	Read/Write
403209	VolumeUnits	0 = Gallons 1 = Liters	Read/Write
403210	FlowUnits	0 = Liter/min 1 = Gallons / min 2 = cc/min 3 = oz/min 4 = cycles/min	Read/Write
403211	ProfileLock	0 = unlocked 1 = locked	Read/Write

ADCM Modbus Register	Parameter Name	Range	Register Access
403212	Tranducer_1_type	0 = None 1 = 500 psi	Read/Write
403213	Reserved		
403214	Transducer_1_Scale Upper	0-65535	Read
403215	Transducer_1_Scale Lower	0-65535	Read
403216	Transducer_1_Offset Upper	0-65535	Read
403217	Transducer_1_Offset Lower	0-65535	Read
403218	Transducer_2_type	0 = None 1 = 500 psi	Read/Write
403219	Reserved		
403220	Transducer_2_Scale Upper	0-65535	Read
403221	Transducer_2_Scale Lower	0-65535	Read
403222	Transducer_2_Offset Upper	0-65535	Read
403223	Transducer_2_Offset Lower	0-65535	Read
403224	DisableRemoteStart_bool	0 = Remote Start Enabled 1 = Remote Start Disabled	Read/Write

Table 4 Pump Run Registers

ADCM Modbus Register	Parameter Name	Range	Register Access
404100	Pump Status Bits	bit 0 = Pump trying to move bit 1 = Pump actually moving bit 2 = Active Alarm bit 3 = Active Deviation bit 4 = Active Advisory bit 5 = Setup Modified (Registers 6141-6159) bit 6 = Pump Direction bit 7 = Run Status bit 8 = Profile 1 Modified bit 9 = Profile 2 Modified bit 10 = Profile 3 Modified bit 11 = Profile 4 Modified	Read
404101	Actual Pump Speed	10 = 1.0 cycle/min	Read
404102	Actual Pump Flow Rate	10 = 1.0 L/min 10 = 1.0 Gal/min 1 = 1 cc/min 1 = 1 oz/min 10 = 1.0 cycle/min	Read
404103	Estimated Pump Force or Pressure	0-100	Read
404104	Transducer 1 Pressure	1 = 1 psi 10 = 1.0 Bar 100 = 1.00 Mpa	Read

Appendix A - Modbus Variable Map

ADCM Modbus Register	Parameter Name	Range	Register Access
404105	Transducer 2 Pressure	1 = 1 psi 10 = 1.0 Bar 100 = 1.00 Mpa	Read
404106	Batch Total High Word	0 - 65535	Read
404107	Batch Total Low Word	0 - 65535	Read
404108	Grand Total High Word Pump 1	0 - 65535	Read
404109	Grand Total Low Word Pump 1	0 - 65535	Read
404110	Maintenance Total High Word	0 - 65535	Read
404111	Maintenance Total Low Word	0 - 65535	Read
404112	Pump Alarms High Word	See Event Table	Read
404113	Pump Alarms Low Word	See Event Table	Read
404114	Reserved		
404115	Reserved		
404116	Reserved		
404117	Reserved		
404118	Reserved		
404119	Reserved		
404120	Display Version Major	0-99	Read
404121	Display Version Minor	0-99	Read
404122	Display Version Build	0-99	Read

404150	Active Profile Pressure Minimum	0 to maximum pressure for pump type	Read
404151	Active Profile Pressure	0 to maximum pressure for pump type	Read
404152	Active Profile Pressure	0 to maximum pressure for pump type	Read
404153	Active Profile Flow	0 to maximum pressure for pump type	Read
404154	Active Profile Flow	0 to maximum pressure for pump type	Read
404155	Active Profile Flow	0 to maximum pressure for pump type	Read
404156	Active Profile Mode	0 = Pressure 1 = Flow 2 = Hybrid	Read
404157	Active BPR % Closed	0-100	Read
404158	Active Pressure Minimum Event Type	0 = Limit 1 = Deviation 2 = Alarm	Read

ADCM Modbus Register	Parameter Name	Range	Register Access
404159	Active Pressure Maximum Event Type	0 = Limit 1 = Deviation 2 = Alarm	Read
404160	Active Flow Rate Minimum Event Type	0 = Limit 1 = Deviation 2 = Alarm	Read
404161	Active Flow Rate Maximum Event Type	0 = Limit 1 = Deviation 2 = Alarm	Read
404200	Local/Remote Control	0 = Local 1 = Remote	Read/Write
404201	Active Profile	1-4	Read/Write
404202	Reset Event		Read/Write
404203	Maintenance Interval Upper	0 - 65535	Read/Write
404204	Maintenance Interval Lower	0 - 65535	Read/Write
404205	Reserved		
404206	Reserved		
404207	Reserved		
404208	Reserved		
404209	Reserved		
404210	Pump Lower Type		Read/Write
404211	Pump Lower Size		Read/Write
404212	Reserved		
404213	Reserved		
404214	Stop BPR %	1-100	Read/Write
404250	Password Enable	0 = Disabled 1 = Enabled	Read/Write
404251	ProfileLock	0 = unlocked 1 = locked	Read/Write

Table 5 Profile Registers

ADCM Modbus Register	Parameter Name	Range	Register Access
405x00	Profile x Min Pressure	0 to maximum pressure for pump type	Read/Write
405x01	Profile x Profile Target Pressure	0 to maximum pressure for pump type	Read/Write

Appendix A - Modbus Variable Map

ADCM Modbus Register	Parameter Name	Range	Register Access
405x02	Profile x Profile Max Pressure	0 to maximum pressure for pump type	Read/Write
405x03	Profile x Profile Min Flow	0 to maximum pressure for pump type	Read/Write
405x04	Profile x Profile Target Flow	0 to maximum pressure for pump type	Read/Write
405x05	Profile x Profile Max Flow	0 to maximum pressure for pump type	Read/Write
405x06	Profile x Profile Mode Select	0 = Pressure 1 = Flow 2 = Hybrid	Read/Write
405x07	Profile x Analog Output #1 BPR Cntrl (4 - 20 ma)	0-100	Read/Write
405x08	Profile x Profile Min Pressure Alarm Type	0 = Limit 1 = Deviation 2 = Alarm	Read/Write
405x09	Profile x Profile Max Alarm Type	0 = Limit 1 = Deviation 2 = Alarm	Read/Write
405x10	Profile x Profile Min Flow Alarm Type	0 = Limit 1 = Deviation 2 = Alarm	Read/Write
405x11	Profile x Profile Max Flow Alarm Type	0 = Limit 1 = Deviation 2 = Alarm	Read/Write
405x12 - 405x15	Reserved		

Table 6 IPK Registers

ADCM Modbus Register	Parameter Name	Range	Register Access
406100	Secs Counter	0 - 60	Read
406101	Pump Status Bits	bit 0 = Pump trying to move bit 1 = Pump actually moving bit 2 = Active Alarm bit 3 = Active Deviation bit 4 = Active Advisory bit 5 = Setup Modified (Registers 6141-6159) bit 6 = Pump Direction bit 7 = Run Status bit 8 = Profile 1 Modified bit 9 = Profile 2 Modified bit 10 = Profile 3 Modified bit 11 = Profile 4 Modified	Read
406102	Actual Pump Speed	10 = 1.0 cycle/min	Read

ADCM Modbus Register	Parameter Name	Range	Register Access
406103	Actual Pump Flow Rate	10 = 1.0 L/min 10 = 1.0 Gal/min 1 = 1 cc/min 1 = 1 oz/min 10 = 1.0 cycle/min	Read
406104	Estimated Pump Force or Pressure	0-100	Read
406105	Transducer 1 Pressure	1 = 1 psi 10 = 1.0 Bar 100 = 1.00 Mpa	Read
406106	Transducer 2 Pressure	1 = 1 psi 10 = 1.0 Bar 100 = 1.00 Mpa	Read
406107	Reserved		
406108	ADCM Output Bits	bit 0: Aux Output 0 = Off 1 = On	Read/Write
406109	Active Profile Number	0 - 4	Read/Write
406110	Reserved		
406111	Reserved		
406112	Reserved		
406113	Reserved		
406114	Batch Total High Word	0 - 65535	Read Only
406115	Batch Total Low Word	0 - 65535	Read Only
406116	Grand Total High Word Pump 1	0 - 65535	Read Only
406117	Grand Total Low Word Pump 1	0 - 65535	Read Only
406118	Reserved		
406119	Reserved		
406120	Reserved		
406121	Last Up Time	0-65535 ms	Read
406122	Last Down Time	0-65535 ms	Read
406123	BPR Target	0-100	Read/Write
406124	Reserved		
406125	Reserved		
406126	Reserved		
406127	Reserved		
406128	Reserved		
406129	Pump Alarms High Word		Read
406130	Pump Alarms Low Word		Read
406131	Reserved		

Appendix A - Modbus Variable Map

ADCM Modbus Register	Parameter Name	Range	Register Access
406132	Reserved		
406133	Reserved		
406134	Reserved		
406135	Reserved		
406136	Reserved		
406137	Reserved		
406138	Reserved		
406139	Pump Control Bitfield	bit 0 = Clear Alarm bit 1 = Reset Batch bit 2 = Reset Maint Counter	Read/Write
406140	Configuration	bit 0: 0 = Local 1 = Remote bit 1: Profile 4 Circ 0 = Standard 1 = Circ Profile bit 2: Transducer 1 0 = Disabled 1 = Enabled bit 3: Transducer 2 0 = Disabled 1 = Enabled bit 15: Remote Start 0 = Enable 1 = Disable	Read/Write
406141	Reserved		
406142	Pressure Units	0 = Psi 1 = bar 2 = Mpa	Read/Write
406143	Volume Units	0 = Liters 1 = Gallons	Read/Write
406144	Flow Units	0 = Liter/min 1 = Gallons/min 2 = cc/min 3 = oz/min 4 = Cycles / min	Read/Write
406145	Reserved		
406146	Stop Profile BPR % Setting	0-100	Read/Write
406147	Reserved		
406148	Reserved		
406149	Reserved		
406150	Reserved		
406151	Reserved		
406152	Reserved		

ADCM Modbus Register	Parameter Name	Range	Register Access
406153	Reserved		
406154	Reserved		
406155	Pump Ratio	0–65353	Read/Write
406156	Pump Lower Size	0-65535 cc	Read/Write

NOTE: See [Error Code Troubleshooting, page 35](#), for a description of each alarm.

Table 7 Alarm Bits

404112 - Pump Events — High Word			
Bit	Event Type	Event Code	Event Name
0		DD91	Pump Diving Down
1		DD92	Pump Diving Up
2		CAGX	Modbus Communication Deviation
3		C4GX	Modbus Communication Alarm
4		MND1	Maintenance Interval Expired
5		WSC1	Invalid Pressure Target
6		WSC2	Invalid Flow Rate Target
7		WSD1	Invalid Lower Size
8		WSD2	Invalid Pump Ratio
9	Reserved		
10	Reserved		
11	Reserved		
12	Reserved		
13	Reserved		
14	Reserved		
15	Reserved		
404113 - Pump Events — Low Word			
Bit	Event Type	Event Code	Event Name
0	Alarm	K1D0	Minimum Flow Rate Alarm
1	Deviation	K2D0	Minimum Flow Rate Deviation
2	Deviation	K3D0	Maximum Flow Rate Deviation
3	Alarm	K4D0	Maximum Flow Rate Alarm
4	Alarm	P1I0	Minimum Pump Outlet Fluid Pressure Alarm
5	Deviation	P2I0	Minimum Pump Outlet Fluid Pressure Deviation
6	Deviation	P3I0	Maximum Pump Outlet Fluid Pressure Deviation
7	Alarm	P4I0	Maximum Pump Outlet Fluid Pressure Alarm

Appendix A - Modbus Variable Map

8	Alarm	P6I0	Pump Outlet Pressure Sensor Failure
9	Alarm	P1CB	Minimum BPR Pressure Alarm
10	Deviation	P2CB	Minimum BPR Pressure Deviation
11	Deviation	P3CB	Maximum BPR Pressure Deviation
12	Alarm	P4CB	Maximum BPR Pressure Alarm
13	Alarm	P6CB	BPR Pressure Sensor Failure
14	Deviation	DK61	Reed Switch 1 Not Detected
15	Deviation	DK62	Reed Switch 2 Not Detected

Table 8 404100 - Pump Status Bits

404100 - Pump Status Bits	
Bit	Meaning
0	Reads 1 if the pump is trying to move
1	Reads 1 if the pump is actually moving
2	Reads 1 if there are any active alarms
3	Reads 1 if there are any active deviations
4	Reads 1 if there are any active advisories
5	Setup changed
6	Reserved
7	Run/Stop switch closed
8	Profile 1 changed
9	Profile 2 changed
10	Profile 3 changed
11	Profile 4 changed

Table 9 404202 - Pump Control Bits

404202 - Pump Control Bits	
Bit	Meaning
0	Reads 0 for an active alarm or deviation. Reset to 1 to clear.
1	Set to 1 to reset the batch total
2	Set to 1 to reset the maintenance counter
others	Reserved for future use - only write 0

Table 10 406140 - Pump Status and Configuration Bits

406140 - Pump Status Bits	
Bit	Meaning
0	Pump is trying to moved 0 = Pump is off 1 = Pump is on

1	Pump is moving 0 = Pump is stalled (CPM is less than 1) 1 = Pump is moving at more than 1 CPM
2	Active Alarm 0 = No active alarm 1 = Active alarm
3	Active Deviation 0 = No active deviation 1 = Active deviation
4	Active Advisory 0 = No active advisory 1 = Active advisory
5	Setup Changed
6	Reserved
7	Reserved
8	Profile 1 Changed 0 = Profile not modified 1 = Profile modified (bit is cleared automatically upon reading profile 1)
9	Profile 2 Changed 0 = Profile not modified 1 = Profile modified (bit is cleared automatically upon reading profile 2)
10	Profile 3 Changed 0 = Profile not modified 1 = Profile modified (bit is cleared automatically upon reading profile 3)
11	Profile 4 Changed 0 = Profile not modified 1 = Profile modified (bit is cleared automatically upon reading profile 4)
12	Reserved
13	Reserved
14	Reserved
15	Reserved
404202 - Pump Control Bits	
Bit	Meaning
0	Control Mode 0 = Local (only accept commands from local display) 1 = Remote
1	Enable Off Production Profile - Profile 4 is now used as the off production profile 0 = Disable 1 = Enable
2	Enable Pressure Transducer 1 0 = Disable 1 = Enable
3	Enable Pressure Transducer 2 0 = Disable 1 = Enable
4	Reserved
5	Reserved

Appendix A - Modbus Variable Map

6	Reserved
7	Reserved
8	Reserved
9	Reserved
10	Reserved
11	Reserved
12	Reserved
13	Reserved
14	Reserved
15	Remote Start - System can be turned on by PLC or remote source 0 = Enabled 1 = Disabled



Table 11 Units

Unit Type	Selectable Units	Units Register	Converting registers to unit values	Register value for 1 unit
Pressure	Percent	n/a	Pressure = Register	1 = 1% Pressure
Pressure	psi	403208 = 0	Pressure = Register	1 = 1 psi
	Bar	403208 = 1	Pressure = Register/10	10 = 1.0 Bar
	MPa	403208 = 2	Pressure = Register/100	100 = 1.00 Mpa
Speed	Cycles/min	n/a	Speed = Register/10	10 = 1.0 cycle/min
Flow	Liters/min	403210 = 0	Flow = Register/10	10 = 1.0 L/min
	Gallons/min	403210 = 1	Flow = Register/10	10 = 1.0 Gal/min
	cc/min	403210 = 2	Flow = Register	1 = 1 cc/min
	oz/min	403210 = 3	Flow = Register	1 = 1 oz/min
	Cycles/min	403210 = 4	Flow = Register/10	10 = 1.0 cycle/min
Volume	Liters	403209 = 0	Volume = 1000*High + Low/10	0 (High) / 10 (Low) = 1.0 L
	Gallons	403209 = 1	Volume = 1000*High + Low/10	0 (High) / 10 (Low) = 1.0 Gal
Cycles	Pump Cycles	n/a	Cycles = 10000*High + Low	0 (High) / 1 (Low) = 1 cycle

= Example of converting volume register reading to units: If the reading for register 404106 (volume high word) is 12, and the reading for register 404107 (volume low word) is 34, the volume is 12003.4 liters. $12 * 1000 + 34/10 = 12003.4$.

== Example of converting cycles register reading to units: If the reading for register 404108 (cycles high word) is 75, and the reading for register 404109 (cycles low word) is 8000, the volume is 758,000 cycles. $75 * 10000 + 8000 = 758000$.

Appendix B - Control Module Programming

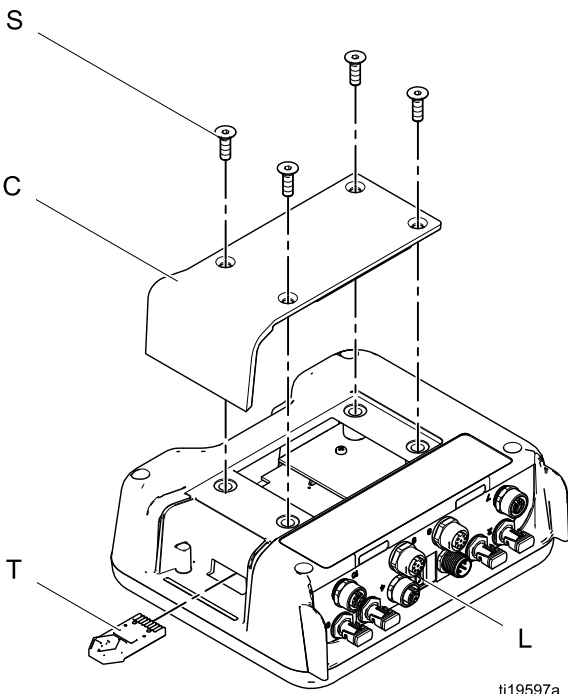
				
<p>To help prevent fire and explosion, do not connect, download, or remove the token unless the unit is removed from the hazardous (explosive atmosphere) location.</p>				

- **All data in the module may be reset to factory default settings.** Record all settings and user preferences before the upgrade, for ease of restoring them following the upgrade.
- The latest software version for each system can be found at www.graco.com.

Software Upgrade Instructions

NOTE: If the software on the token is the same version that is already programmed on the module, nothing will happen (including flashing red light). No harm can be done by attempting to program the module multiple times.

1. Remove power from the Pump Control Module by turning off system power and move the Pump Control Module to a non-hazardous location.
2. Remove access cover (C).



ti19597a

3. Insert and press the token (T) firmly into the slot.
NOTE: Token has no preferred orientation.
4. Return the unit to the hazardous location.
5. Supply electrical power to the Graco Control Module.
6. The red indicator light (L) will flash while the software is being loaded on the display. When the software is completely loaded, the red light will turn off.

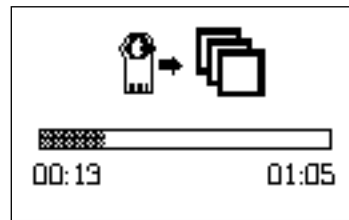
NOTICE
<p>To prevent corrupting the software, do not remove the token, turn off the system power, or disconnect any modules until the status screen indicates that updates are complete.</p>

7. The following screen will be shown when the display turns on.

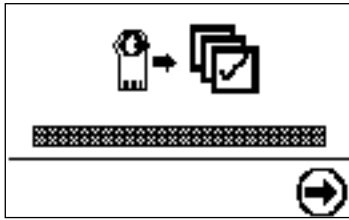


Communications with motors established.

8. Wait for update to complete.
NOTE: The approximate time until completion is shown along bottom of progress bar.



9. Updates are complete. Icon indicates update success or failure.



Icon	Description
	Update successful
	Update unsuccessful
	Update complete; no change necessary

10. Remove power from the Pump Control Module by turning off the system power and move the Pump Control Module to a non-hazardous location.
11. Remove the access cover (C).
12. Remove the token (T) from its slot.
13. Reinstall the access cover (C) and secure with screws (S).
14. Return the Pump Control Module to the hazardous location and apply power.

Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

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In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

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