

iQpump®605 Multiplex Quick Start Procedure

Read and follow the safety and installation procedures in the Installation & Primary Operation (TOEPYAIWM6501) manual packaged with the drive.

⚠ DANGER

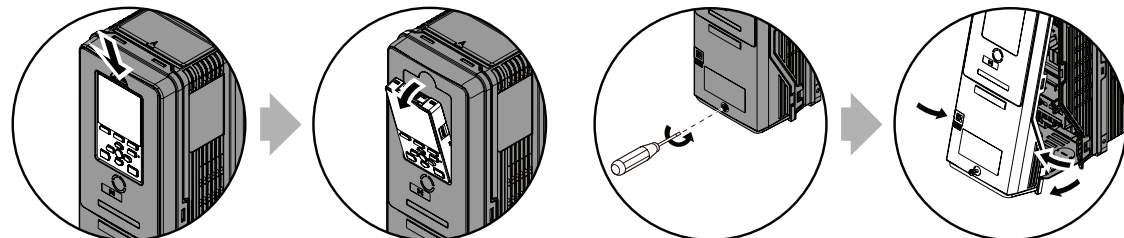
Electrical Shock Hazard

Do not examine, connect, or disconnect wiring on an energized drive. Before servicing, disconnect all power to the equipment and wait for the time specified on the warning label at a minimum. The internal capacitor stays charged after the drive is de-energized. The charge indicator LED extinguishes when the DC bus voltage decreases below 50 Vdc. When all indicators are OFF, remove the covers before measuring for dangerous voltages to make sure that the drive is safe. If you do work on the drive when it is energized, it will cause serious injury or death from electrical shock.

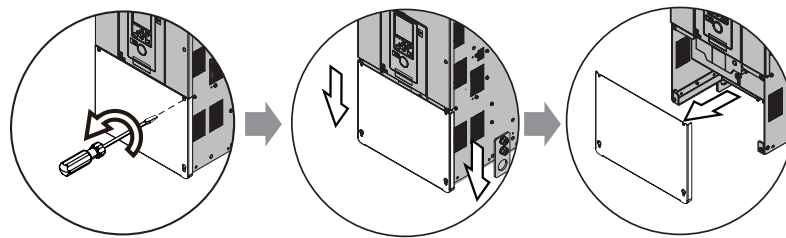
Wire and Set Up a Duplex or Triplex System Using Transducers

1 Disconnect Power and Access the Control Circuit Terminals

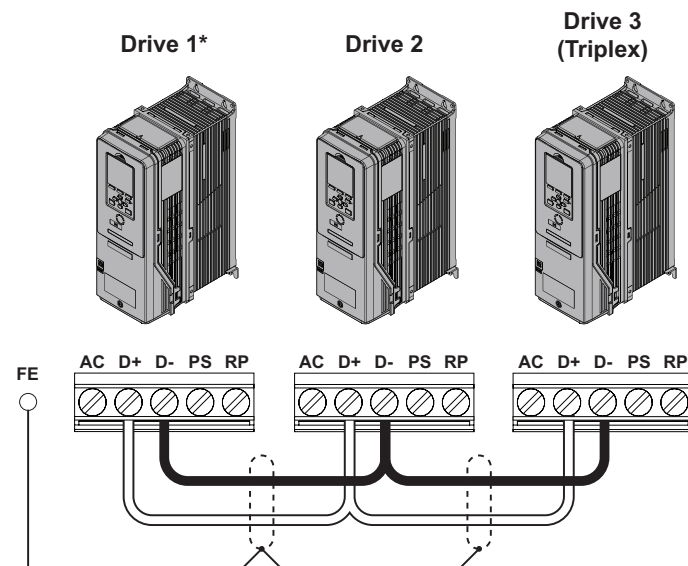
Models 2011 to 2014 and 4005 to 4124



Models 2143 to 2396 and 4156 to 4720

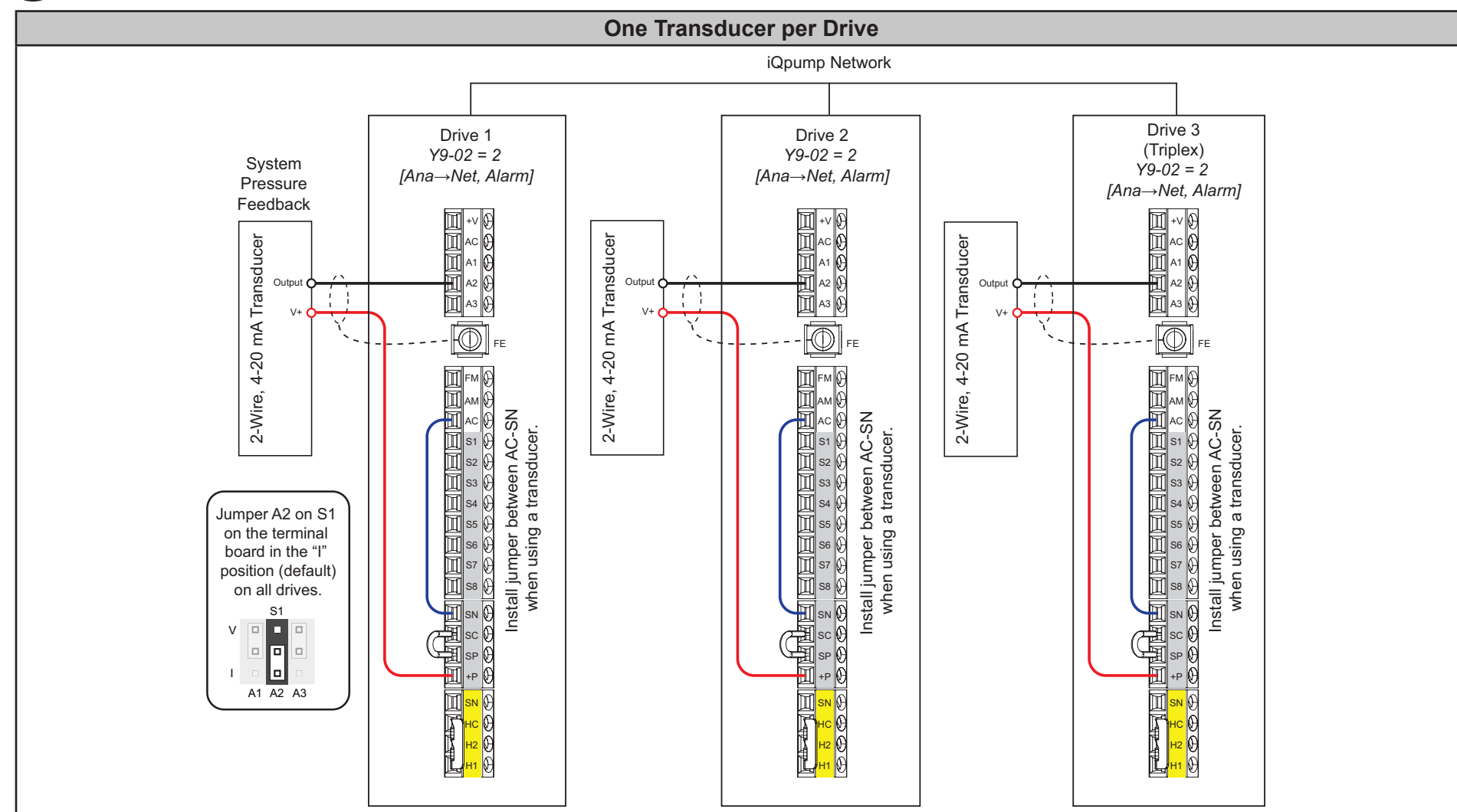


2 Use Shielded Communication Cable to Connect the D+ and D- Terminals between each Drive

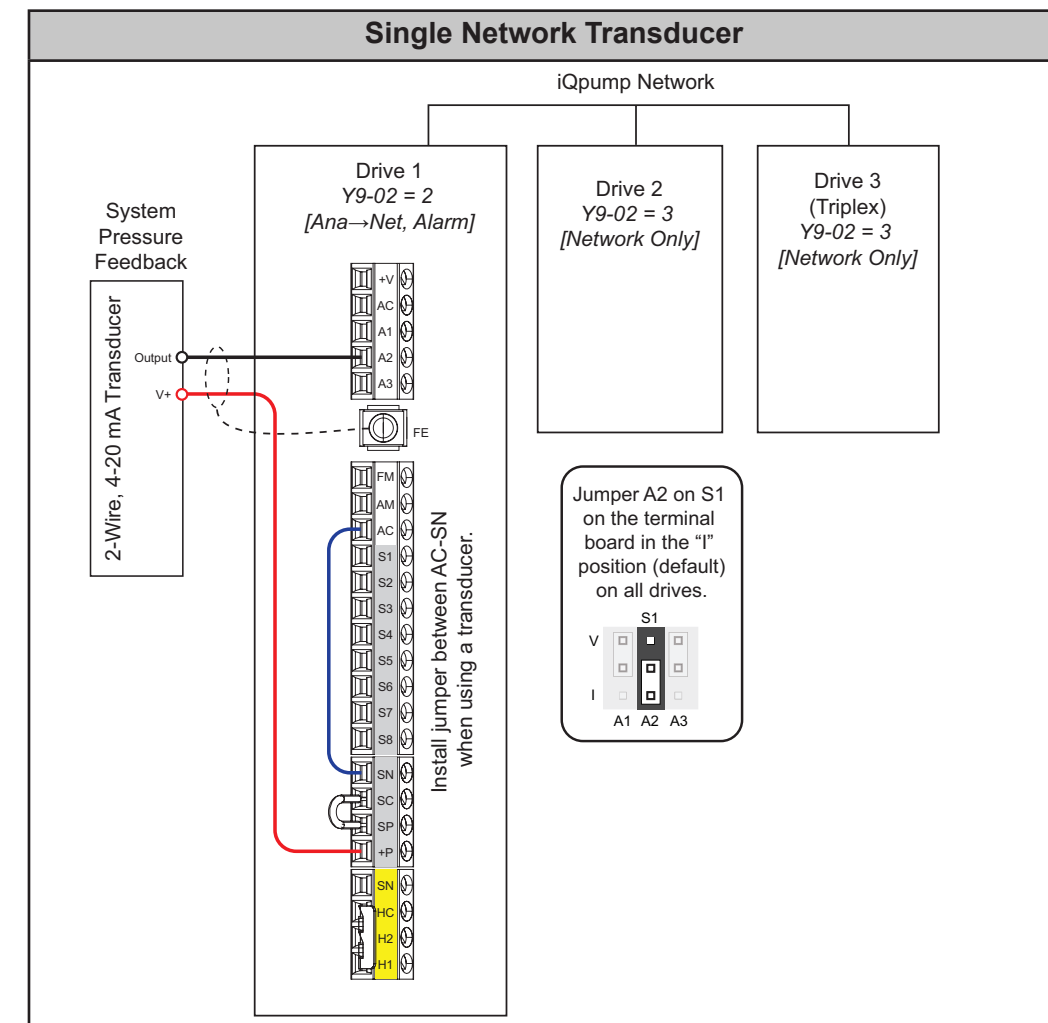


*Wire the shield to the ground terminal on Drive 1 **ONLY**.
20-24 AWG shielded twisted pair (STP) wiring recommended.

3a Wire the Transducer (One Transducer per Drive)

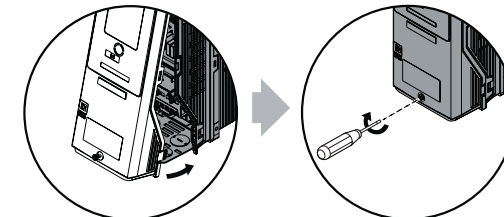


3b Wire the Transducer (Single Network Transducer)

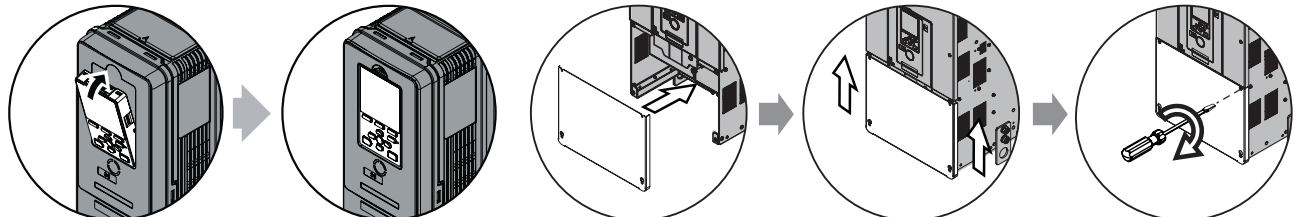


4 Install the Front Cover, Keypad, and Terminal Cover

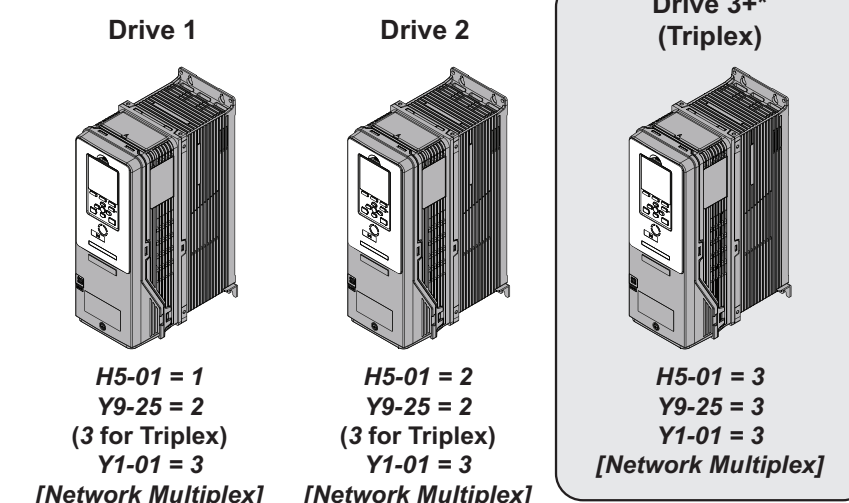
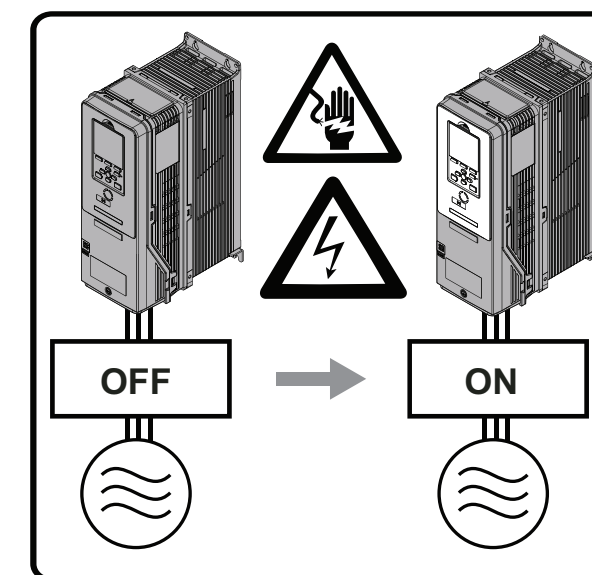
Models 2011 to 2014 and 4005 to 4124



Models 2143 to 2396 and 4156 to 4720



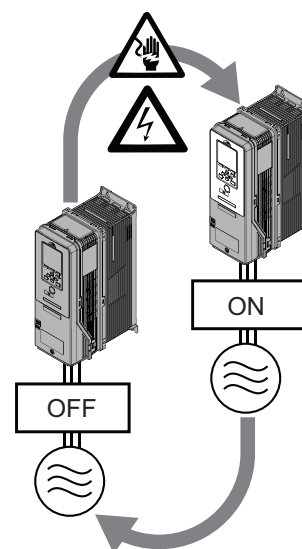
5 Apply Power and Set Drive Parameters for Multiplexing



Make sure at least one drive has Y9-27 = 0 = [Automatic]

*It is possible to connect up to 8 drives

6 Cycle Power to All Drives on the Network and Check Monitor UA-02



10:00 am	FWD	Rdy	Monitor
Network Activity	UA-02	% <=>	0.0
Time to Alternation	UA-03	min	1440
Running Queue No	UA-04		0
Back	Home		

Make sure that:

- No drives show UA-02 = <=> 0.0
- All drives receive valid data and UA-02 changes regularly
- At least one drive has the unit <M> to identify the master, while the rest have the unit <+> to identify nodes.

If there is a drive that shows UA-02 = <=> 0.0:

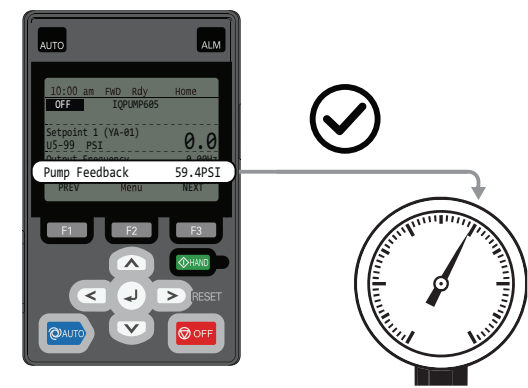
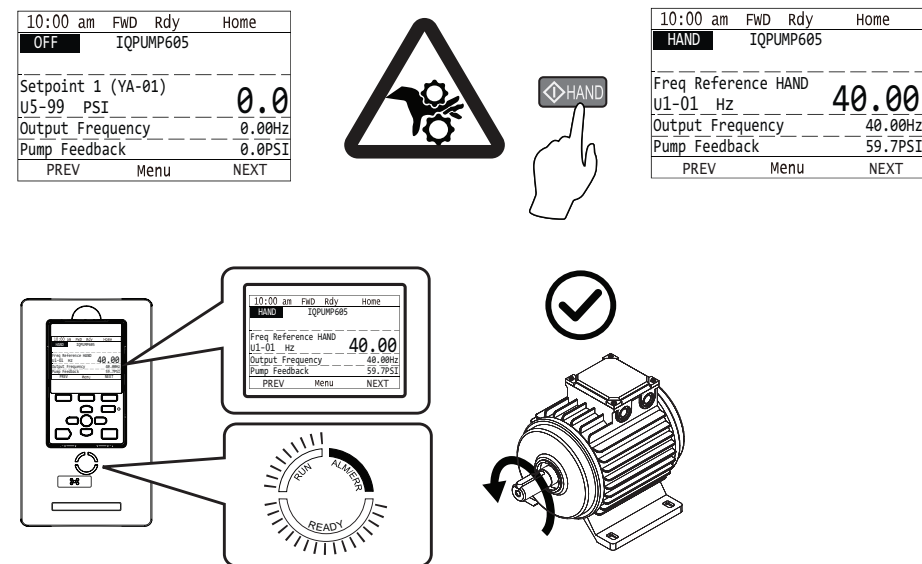
1. Check communication wiring
2. Verify the serial communication address in H5-01
3. Confirm Y9-25 and Y9-27 settings on all drives. Y9-25 should be set to the highest H5-01 address and at least one drive has Y9-27 = 0 [Automatic].
4. Cycle power to all drives.

10:00 am	FWD	Rdy	Monitor
Network Activity	UA-02	% <M>	95.4
Time to Alternation	UA-03	min	1440
Running Queue No	UA-04		0
Back	Home		

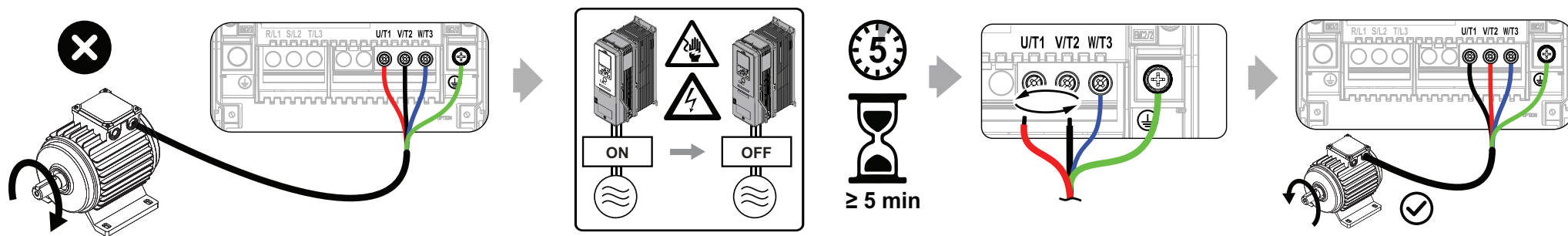
10:00 am	FWD	Rdy	Monitor
Network Activity	UA-02	% <+>	32.7
Time to Alternation	UA-03	min	1440
Running Queue No	UA-04		0
Back	Home		

7

Use HAND Operation to Check the Motor Rotation Direction and Check the Feedback Signal

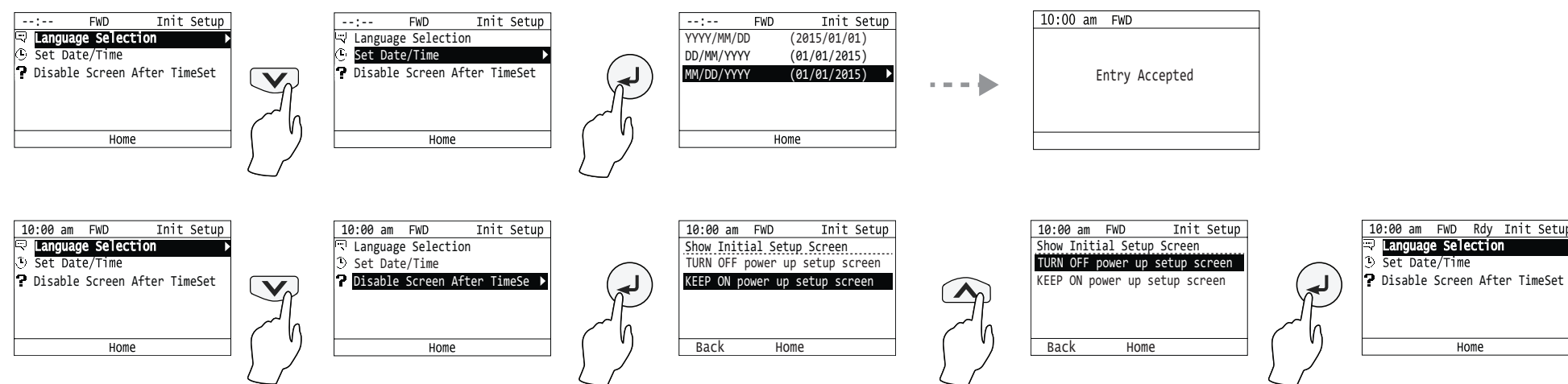


Check Y1-02 and Y1-03 if the System Units or Feedback Device Scaling are incorrect.



8

Set the Real-Time Clock and Disable the Initial Setup Screen



9

Set Drive Parameters for Application

Generic parameter setup for system with two or three pumps as boosters, with or without a pressure tank. Pumps will lead-lag with 24 hour alternation. Start / Stop from the keypad. Each drive has its own transducer.

Parameter	Name	Drive 1 Setting	Drive 2+ Setting	Comments
H5-01	Drive Node Address	1	Drive 2 = 2, Drive 3 = 3	-
Y1-01	Multiplex Mode	3 [Network Multiplex]	3 [Network Multiplex]	Set up drive software for MEMOBUS Multiplexing.
Y9-02	System Feedback Source	2 [Ana→Net, Alarm]	2 [Ana→Net, Alarm]	System programmed for redundant transducer feedback. Each drive has its own transducer wired to A2.
Y9-06	Lag Fixed Speed	59.5 Hz	59.5 Hz	-
Y9-08	Staging Mode	2 [Feedback + Output Frequency]	2 [Feedback + Output Frequency]	Sets the conditions for the lead pump drive so that the delta between setpoint - feedback must be more than Y9-10 before the drive will stage.
Y9-09	Staging Frequency Level	59.5 Hz	59.5 Hz	Sets the system to stage on lag pump when lead pump is more than 59.5 Hz and the system is 5 PSI below the Auto setpoint.
Y9-10	Staging Delta Feedback Level	5.0 PSI	5.0 PSI	
Y9-11	Staging Delay Time	14 s	14 s	Sets the time when the lag pump will stage on. Adjust as needed for system operation.
Y9-13	De-staging Frequency Level	45.0 Hz	45.0 Hz	Sets the lag pump output frequency when it de-stages and goes back to a single lead pump. Adjustment might be necessary based on pump system curve.
Y9-15	De-staging Delay Time	5 s	5 s	Sets the time when the lag pump will de-stage when the speed is less than Y9-13.
Y9-18	High Feedback De-stage Level	98.0%	98.0%	Set this value when using High Pressure as a fault.
Y9-25	Highest Node Address	Duplex = 2, Triplex = 3	Duplex = 2, Triplex = 3	Sets the maximum number of pumps in the multiplex system.

Additional Resources



Mobile App



DriveWizard® Mobile
Commissioning
Smartphone App

<https://www.yaskawa.com/dwm>



Product Manuals



PDFs

<https://www.yaskawa.com/qpump605manuals>

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