



FPC-8XX4X

SPECIFICATION SHEET

HydroSTART Pump Controllers

HARDWARE FEATURES

Enclosure:

- Powder coated mild steel enclosure with removable gland plate
- IP54 rated with single door, for indoor mounting (Single Door version), or:
- IP56 rated with inner door, for outdoor mounting (Inner Door version)

Protection:

- Padlockable mains power isolator switch
- Low voltage control and input circuitry
- Individual pump circuit breaker protection/isolation
- Contactors for pump switching (three phase panels)
- Electronic short and overload protection of alarms
- Din rail mounted terminal connections

Control & interface:

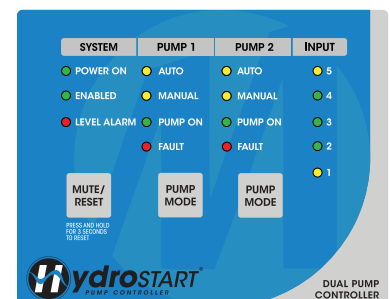
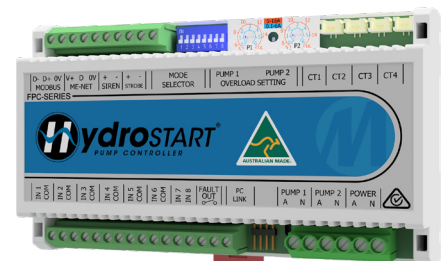
- HydroSTART single or dual pump capacitive touch keypad interface:
 - Indicator lights for system, pump and input status, level alarm
 - Buttons for alarm mute/reset and pump mode selection
- HydroSTART PCB control module with dipswitches for adjusting configuration
- Visual (strobe) and audible (buzzer) alarms
- Pump current sensing providing adjustable overload & other protections
- Soft starter per pump with adjustable soft start & stop (Soft Start versions)

Inputs:

- Single phase (230Vac) or three phase (400Vac) power supply
- 6x digital inputs for float or pressure switches, optional prime loss flow switch and system enable
- Standard terminal setup: Low level, duty stop, duty start, standby start, high level and system enable

Outputs:

- 1 or 2x pump supply outputs
- BMS volt free output for common fault
- Modbus RTU Serial RS485 connections for SCADA



COMMON APPLICATIONS

- Sewage pump out
- Stormwater pump out
- Water transfer
- Pressure boosting
- Hot water recirculation

MATElec Australia's HydroSTART Controller brings the features of the standard single and dual pump controllers into a new age with a redesigned capacitive touch keypad and control module with pump current sensing, providing wide range electronic overload protection which now functions with both single and three phase pumps. Additional control inputs and functionality has been incorporated into the new design to enhance the controller's flexibility and cover an even wider range of pumping applications. **The HydroSTART is the new standard for pump controls.**

FUNCTIONS

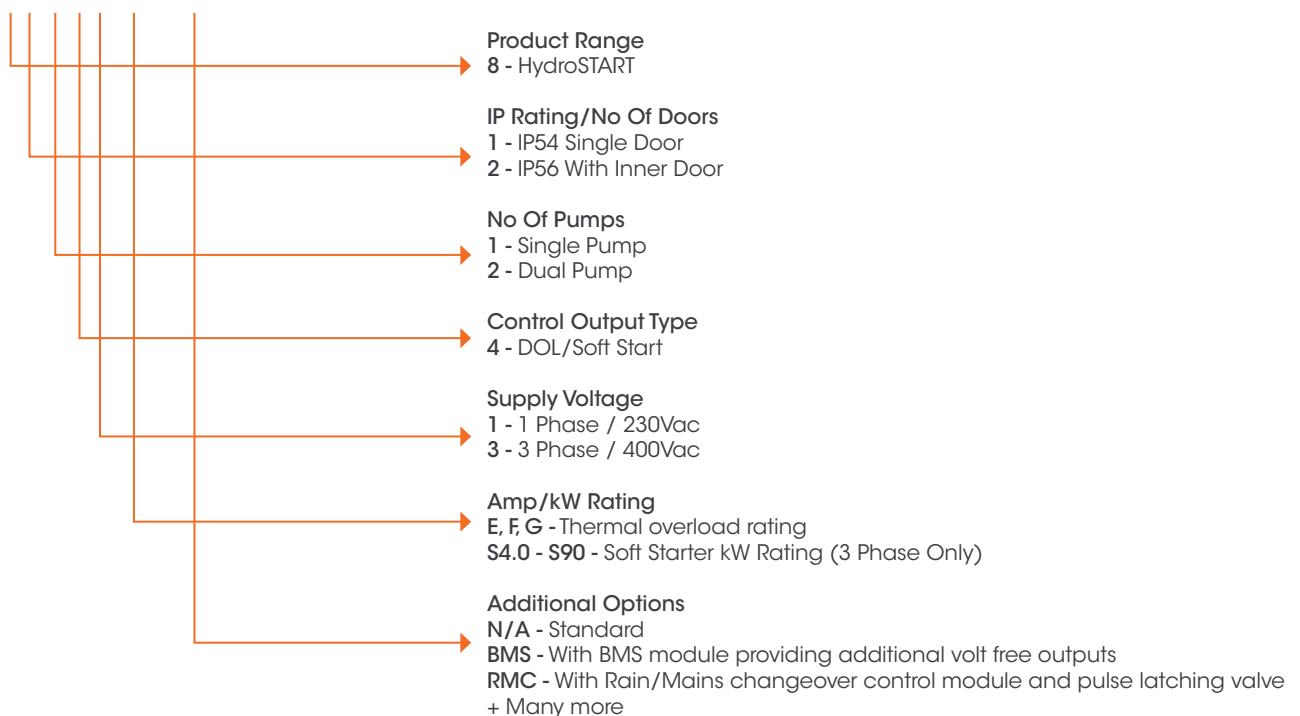
- **Level control mode** – Level empty operation controlled by up to 5 float switches: Low level, duty stop, duty start, standby start and high level
- **Pressure control mode** – Pressure boost operation controlled by up to 3 pressure switches: Duty start, standby start and low pressure
- **Duty sharing and alternation** – Duty pump alternates on pump start and after 30 minutes of continuous running in alternation mode, or 6 hours of accumulated running in recirculation mode
- **Staggered pump start** – Prevents excessive current draw and reduces water surge
- **Manual pump control** – Manual pump mode with optional 5 minute timeout to revert to auto mode
- **System enable input** – Enables and disables the system in auto mode
- **Static duty mode** – No duty alternation, for applications using smaller duty pump that always starts first
- **Smart chirp mode alarms** – Audible alarm automatically silences after 5 minutes if not muted, then chirps every 5 minutes

FAULT PROTECTION

- **High level alarm** – Alarms after 15 minute delay with auto reset in stormwater mode, or after 1 minute with manual reset only in sewage mode
- **Low level protection** – Alarms and shuts down pumps on low level, manual reset only
- **Low pressure protection** – Alarms and shuts down pumps if low pressure input is closed for 60 seconds
- **Prime loss protection** – Alarms and shuts down running pumps if there is no flow for 30 seconds
- **Pump anti-seize protection** – Runs pumps periodically during low use to prevent seizing
- **Pump current sensing** – Provides adjustable pump overload, undercurrent and zero current protection

HydroSTART CODE BREAKDOWN

FPC-82143-E/BMS



HydroSTART RANGE - SINGLE DOOR IP54

Code	No of Pumps	Phase / Voltage	Overload Rating Selectable Options	Enclosure Size
FPC-81141	1	1 Phase / 230Vac	LR, HR	400x300x150mm +
FPC-81143	1	3 Phase / 400Vac	LR, HR	400x300x150mm +
FPC-81241	2	1 Phase / 230Vac	LR, HR	400x300x150mm +
FPC-81243	2	3 Phase / 400Vac	LR, HR	400x400x250mm +

HydroSTART RANGE - WITH INNER DOOR IP56

Code	No of Pumps	Phase / Voltage	Overload Rating Selectable Options	Soft Starter Rating Options	Enclosure Size
FPC-82141	1	1 Phase / 230Vac	LR, HR	N/A	400x300x150mm +
FPC-82143	1	3 Phase / 400Vac	LR, HR	-S4.0 to -S90	400x300x150mm +
FPC-82241	2	1 Phase / 230Vac	LR, HR	N/A	400x300x150mm +
FPC-82243	2	3 Phase / 400Vac	LR, HR	-S4.0 to -S90	400x400x250mm +

Note: Enclosure sizes may increase for soft starters and additional options

CURRENT SENSING RATINGS

Selectable Range	Amp Rating
LR	0.1 - 6 Amp
HR	5 - 16 Amp

For FLCs above 16 Amps, external thermal overloads are required, see overload rating table below

THERMAL OVERLOAD RATINGS

Code Suffix	Amp Rating
-E	12 - 18 Amp

For FLCs greater than 18 Amps, soft starters are recommended, see soft starter rating table to the right

SOFT STARTER GUIDE

Code Suffix	kW Rating
-S4.0	4.0 kW
-S5.5	5.5 kW
-S7.5	7.5 kW
-S11	11 kW
-S15	15 kW
-S22	22 kW
-S30	30 kW
-S37	37 kW
-S45	45 kW
-S55	55 kW
-S75	75 kW
-S90	90 kW

Additional kW ratings up to 160kW available on request

ADDITIONAL OPTIONS

Additional options are added to the end of the code after the overload rating, eg: FPC-82143-LR/BMS. Most options can only be added to the inner door version

- /BMS – With BMS module providing volt free outputs for power on, low and high level, individual pump run and fault and common fault
- /SMS – With ME-Link module for SMS alarm/status messaging
- /RMC – With rain/mains changeover control module and 12Vdc pulse latching solenoid valve
- /GEN – With generator input socket and manual changeover switch
- /ATS – With automatic generator changeover switch
- /RCBO – With individual pump RCBO protection
- /CON – With conductivity module and up to 5 probe inputs
- /INT – With intrinsically safe input barrier relays
- /TF – With tank fill control mode enabled
- /MR – With max run protection enabled
- /PL – With pump limit function enabled
- /SRCAP – With start and run capacitors
- /RCAP – With run capacitors
- /BBHLS – With battery backup high level alarm
- /HWC – Configured for hot water circulation
- /TC – With time clock for time of day operation
- /SS – With 316 stainless steel enclosure