



# PRODUCT CATALOGUE

Open Plant Cleaning (OPC+) Products & Accessories for Pharmaceutical  
and Medical Device Industries

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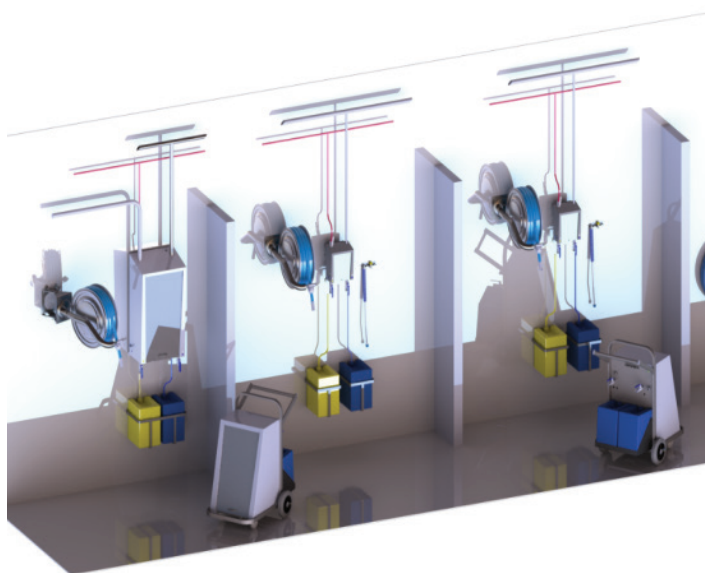
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## Open Plant Cleaning (OPC+)

The Open Plant Cleaning (OPC+) equipment is specifically designed for cleaning and sanitization of open manufacturing equipment (i.e. equipment that cannot be cleaned in-situ) within the pharmaceutical oral (solid/liquid) dosage forms, chemical API, and OLC (ointment, liquids, creams) industry segments.

The Open Plant Cleaning (OPC+) equipment represents an upgrade of your manual cleaning operations that secures a more efficient cleaning, while increasing control and operator safety.

The Open Plant Cleaning (OPC+) equipment is tank- and heater-less relying on the facility systems to delivery water at the specified flow rate and temperature.



The OPC+ equipment consists of a main station (or booster station) with a single or multiple (point-of-use) satellites that facilitate boosted pressure (adjustable up to 390 psi) water and/or wash solutions to the wash gun/wash lance that the operator uses to clean the equipment.

Each OPC+ Satellite features a 3-in-1 chemical block – enabling injection of up to 3 chemicals in one and the same block with just one outlet.

The OPC+ equipment ensures control of pressure (flow), chemical addition & concentration and can be upgraded to include additional process technical features (storage vessel for water with or without heating of water, purge, monitoring and collection of critical process parameters and cycle reporting)

The OPC+ equipment can be configured for decentralized or centralized (plant wide) installations.

The OPC+ equipment is suited for manual cleaning of various open manufacturing equipment, such as:

- Packaging lines
- Filling (bottling) equipment
- Conveyors
- Exterior equipment surfaces
- Facility ceilings, walls and floors and more...



# Main Station OPC-PH 227



One handle operation!

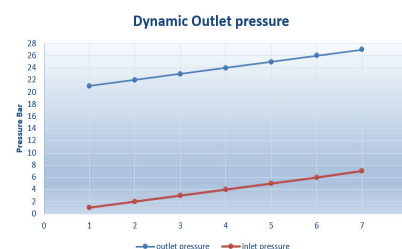
- For 2 users
- Frequency controlled with newest Grundfos technology and high performance EI5 standard motor
- Dynamic outlet pressure! Up to 390 psi, according to inlet pressure
- OPC technology. Only one handle operation
- 3 chemicals in one block. One outlet!
- A bright and colorful digital display is integrated in the pump
- Read out on display
  - Discharge pressure
  - Resulting set point
  - Inlet pressure
  - Liquid temperature
- Automatic air vent valve for extra protection of the pump

Technical Data	Unit	PM.OPC-PH 227
<b>Water</b>		
Pump pressure at 100 PSI inlet pressure	PSI	390
Min./max. inlet pressure	PSI	30/130
Max. water consumption	GPM	16
Max. temperature	°F	160
Pipe dimension inlet (w/ tri clamp)	Inch	1.5"
Pipe dimension outlet (w/ tri clamp)	Inch	1"

Power Supply		
Standard voltage	V	380-500
Frequency	Hz	50-60
Max. power consumption	kW (HP)	3.0 (4.0)

Size		
Dimensions (WxHxD)	Inch	20"x37.5"x16"
Weight	Lbs	152

Item Number	Description	Accessories
P9801	PM.OPC-PH 227 4.0 HP	Starting on page 20



# Main Station OPC-PH 427



One handle operation!

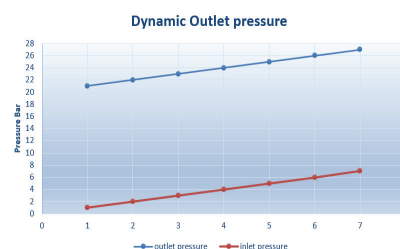
- For 4 users
- Frequency controlled with newest Grundfos technology and high performance EI5 standard motor
- Dynamic outlet pressure! Up to 390 psi, according to inlet pressure
- OPC technology. Only one handle operation
- 3 chemicals in one block. One outlet!
- A bright and colorful digital display is integrated in the pump
- Read out on display
  - Discharge pressure
  - Resulting set point
  - Inlet pressure
  - Liquid temperature
- Automatic air vent valve for extra protection of the pump

Technical Data	Unit	PM.OPC-PH 427
<b>Water</b>		
Pump pressure at 100 PSI inlet pressure	PSI	390
Min./max. inlet pressure	PSI	30/130
Max. water consumption	GPM	32
Max. temperature	°F	160
Pipe dimension inlet (w/ tri clamp)	Inch	1.5"
Pipe dimension outlet (w/ tri clamp)	Inch	1"

Power Supply		
Standard voltage	V	380-500
Frequency	Hz	50-60
Max. power consumption	kW (HP)	6.0 (8.0)

Size		
Dimensions (WxHxD)	Inch	20"x37.5"x16"
Weight	Lbs	180

Item Number	Description	Accessories
P9802	PM.OPC-PH 427 8.0 HP	Starting on page 20



## Satellite OPC-PH 0127



- For 1 user
- Satellite will be connected to OPC main station or booster, which will provide the satellite with boosted pressure water
- Satellite has no separate handle to switch on/off air. All functions are operated by just one handle on the side of the unit, making it extremely simple to operate
- 3 chemicals in one block. One outlet!
- Satellite is prepared for max 390 psi pressure



One handle operation!

Technical Data	Unit	M.OPC-PH 0127
<b>Water</b>		
Min./max. inlet pressure	PSI	140/390
Max. water consumption	GPM	25
Max. temperature	°F	160
Pipe dimension inlet (w/ tri clamp)	Inch	1"

<b>Air</b>		
Pipe dimensions inlet	Inch	1/4"
Min/max air inlet pressure	PSI	75/140
Air consumption	CFM	5-7

<b>Size</b>		
Dimensions (WxHxD)	Inch	10"x13"x7.5"
Weight	Lbs	15

Item Number	Description	Accessories
P9804	M.OPC-PH 0127	Starting on page 20



### Optional accessories:

Standard water hose  
Low pressure valve/low pressure  
gun Hose holder

# Automatic Pharma Satellite

## AUT.OPC-PH 0127X



- For 1 user
- Satellite will be connected to OPC main station or booster, which will control satellite and provide it with boosted pressure water.
- Satellite has no separate handle to switch on/off air. All functions are operated by from the push button panel, making it extremely simple to operate
- 3 chemicals in one block. One outlet!
- Satellite is prepared for max 390 psi pressure



Technical Data	Unit	M.OPC-PH 0127X
<b>Water</b>		
Min./max. inlet pressure	PSI	140/390
Max. water consumption	GPM	25
Max. temperature	°F	160
Pipe dimension inlet (w/ tri clamp)	Inch	1"

<b>Air</b>		
Pipe dimensions inlet	Inch	1/4"
Min/max air inlet pressure	PSI	75/140
Air consumption	CFM	7-5

<b>Size</b>		
Dimensions (WxHxD)	Inch	21.5"x22"x12"
Weight	Lbs	50

Item Number	Description	Accessories
P9804	M.OPC-PH 0127X	Starting on page 20

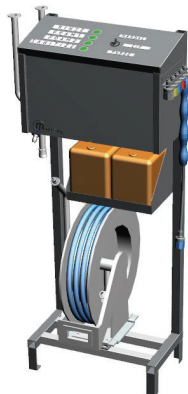


### Optional accessories:

Standard water hose  
Low pressure valve/low pressure  
gunt Hose holder

# Stand-alone Automatic Pharma Satellite

## AUT.OPC-PH 0127X.SA



- For 1 user
- Satellite will be connected to OPC main station or booster, which will provide the satellite with boosted pressure water and control satellite
- Satellite has no separate handle to switch on/off air. All functions are operated from the push button panel, making it extremely simple to operate
- 3 chemicals in one block. One outlet!
- Satellite is prepared for max 390 psi pressure
- Satellite is designed for being installed on the floor of a facility
- With rotating stainless steel hose reel for 90' hose
- Prepared for full purge of line after usage and for internal CIP of pipes and hoses

Technical Data	Unit	M.OPC-PH 0127X.SA
<b>Water</b>		
Min./max. inlet pressure	PSI	140/390
Max. water consumption	GPM	25
Max. temperature	°F	160
Pipe dimension inlet (w/ tri clamp)	Inch	1"
Pipe dimension outlet (w/ tri clamp)	Inch	¾"

<b>Air</b>		
Pipe dimensions inlet	Inch	¼"
Min/max air inlet pressure	PSI	75/140
Air consumption	CFM	5-7

<b>Size</b>		
Dimensions (WxHxD)	Inch	22"x56"x12"
Weight	Lbs	150

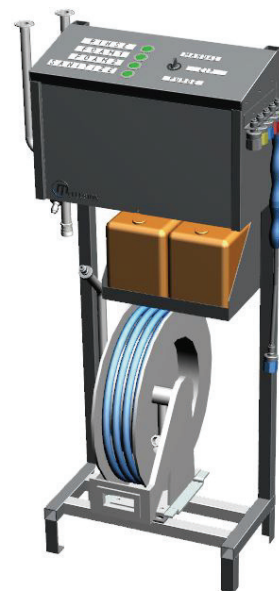
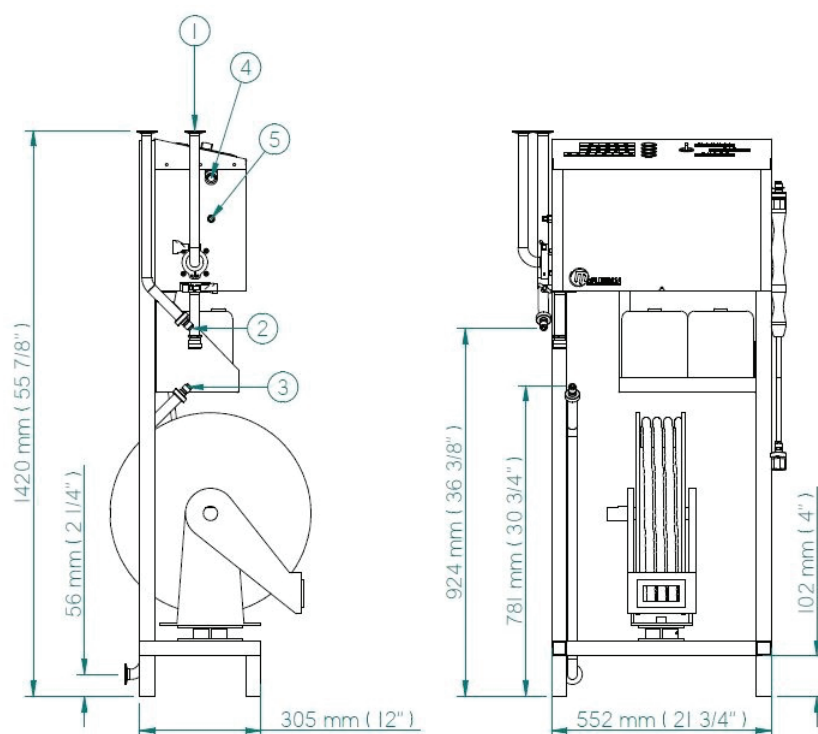
Item Number	Description	Accessories
P9804	M.OPC-PH 0127X.SA	Starting on page 20



### Optional accessories:

Standard water hose  
Low pressure valve/low pressure  
gunt Hose holder

## General layout & tie-in schematic



#	Designation	Connection	Pipe Size	Expected setup
1	Supply Water	1.5"Tri Clamp	1.0"/25 mm sanitary tube	< 40 gpm / up to 350 psi
2	Return to Buffer Tank	0.5"Male Quick Connect	1.0"/25 mm sanitary tube	< 40 gpm / < 75 psi
3	Purge Drain	0.5"Male Quick Connect	1.0"/25 mm sanitary tube	up to 45 psi
4	Electrical	1x24V Multicable (25)	From Main station	N/A
5	Instrument Air	Quick Connect	0.5/12 mm sanitary tube	< 10 cfm @ 90 psi

## OPC+ Mobile Units

McFlusion mobile OPC+ units for pharmaceutical facilities are designed for single and independent use with an output of up to 390 psi boosted water pressure.

The mobile units are very ergonomic and easy to maneuver. They have a robust, full stainless steel enclosure and stainless steel water in- and outlet. They are designed in such a way that service is very easy to carry out.

The mobile units are equipped with the best energy-optimized motor technology available from Grundfos – Grundfos blueflux®.

OPC+ is the latest generation in our high quality product range. The technology features a block, which contains 3 injectors - enabling injection of up to 3 chemicals in one and same block with just one outlet. OPC+ have no separate start/stop and no handle to switch on/off air. All functions are operated by just one handle, which makes the units extremely simple to operate.



# Portable OPC+ unit MP-OPC-PH 0127 and PH 0127 XA



One handle operation!

- For 1 user
- The unit is a single and independent portable unit for one user.
- The unit has the option for integrated compressor, or an external air connection
- The pump is frequency controlled, providing you with the latest technology from Grundfos.
- Dynamic outlet pressure! Up to 390 psi,
- Energy consumption is minimized by controlling the pressure through the build-in PI regulator.
- Unit is only available with our OPC block technology enabling injection of up to 3 chemicals in one and same block with just one outlet
- Automatic air vent valve for extra protection of the pump

Technical Data	Unit	OPC-PH 0127	OPC-PH 0127 XA
<b>Water</b>			
Pump pressure at 45 PSI inlet pressure	PSI	390	390
Min./max. inlet pressure	PSI	30/130	30/130
Max. water consumption	GPM	13	13
Max. temperature	°F	160	160
Pipe dimension inlet w/ tri clamp	Inch	1"	1"
Pipe dimension outlet w/ tri clamp	Inch	½"	½"

<b>Power Supply</b>			
Standard voltage	V	380-500	380-500
Frequency	Hz	50-60	50-60
Max. power consumption	KW (HP)	2.2 + 1.0 (4.5)	2.2 (3.0)

<b>Size</b>			
Dimensions (WxHxD)	Mm (Inch)	725x1100x985 (28.5"x43"x39")	725x1100x985 (28.5"x43"x39")
Weight	Lbs	250	250

Item Number	Description	Accessories
P9807	MO OPC-PH 0127 and MO OPC-PH 0127 XA	Starting on page 20

# Portable OPC+ unit MP-OPC-PH 0227 and PH 0227 XA



One handle operation!

- For 2 user
- The unit is a single and independent portable unit for up to 2 users.
- The unit has the option for integrated compressor, or and external air connection
- The pump is frequency controlled, providing you with the latest technology from Grundfos.
- Dynamic outlet pressure! Up to 390 psi,
- Energy consumption is minimized by controlling the pressure through the build-in PI regulator.
- Unit is only available with our OPC block technology enabling injection of up to 3 chemicals in one and same block with just one outlet
- Automatic air vent valve for extra protection of the pump

Technical Data	Unit	OPC-PH 0227	OPC-PH 0227 XA
<b>Water</b>			
Pump pressure at 45 PSI inlet pressure	PSI	390	390
Min./max. inlet pressure	PSI	30/130	30/130
Max. water consumption	GPM	26	26
Max. temperature	°F	160	160
Pipe dimension inlet w/ tri clamp	Inch	1"	1"
Pipe dimension outlet w/ tri clamp	Inch	3/4"	3/4"

<b>Power Supply</b>			
Standard voltage	V	380-500	380-500
Frequency	Hz	50-60	50-60
Max. power consumption	KW (HP)	4.0 + 1.0 (7.5)	4.0 (5.5)

<b>Size</b>			
Dimensions (WxHxD)	Mm (Inch)	725x1100x985 (28.5"x43"x39")	725x1100x985 (28.5"x43"x39")
Weight	Lbs	275	275

Item Number	Description	Accessories
P9808	MO OPC-PH 0227" and MO OPC-PH 0227 XA	Starting on page 20

# Single Pump Booster Station

## OPC-PB 065 C



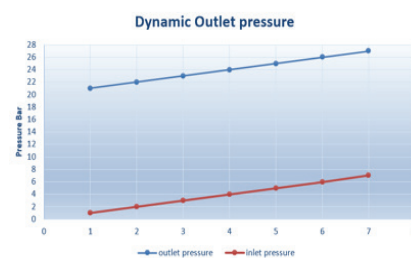
- For 2 users
- Frequency controlled with newest Grundfos technology and high performance IE5 standard motor
- Dynamic outlet pressure! Up to 390 psi,
- A bright and colorful digital display is integrated in the pump
- Read out on display
  - Discharge pressure
  - Resulting set point
  - Inlet pressure
  - Liquid temperature
- Automatic air vent valve for extra protection of the pump

Technical Data	Unit	OPC-PB 065 C
<b>Water</b>		
Pump pressure at 100 PSI inlet pressure	PSI	390
Min./max. inlet pressure	PSI	30/130
Max. water consumption	GPM	20
Max. temperature	°F	160
Pipe dimension inlet w/ tri clamp	Inch	1"
Pipe dimension outlet w/ tri clamp	Inch	1"

<b>Power Supply</b>		
Standard voltage	V	380-500
Frequency	HZ	50-60
Max. power consumption	KW (HP)	3.0 (4.0)

<b>Size</b>		
Dimensions (WxHxD)	Inch	20"x38"x15"
Weight	Lbs	160

Item Number	Description	Accessories
P9809	OPC-PB 065 C 4.0 HP	Starting on page 20



# Single Pump Booster Station

## OPC-PB 120 C



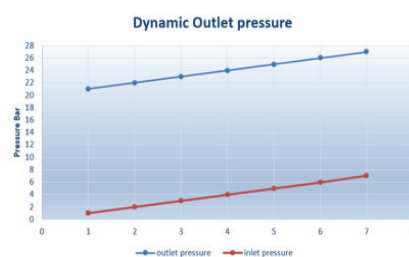
- For 4 users
- Frequency controlled with newest Grundfos technology and high performance E15 standard motor
- Dynamic outlet pressure! Up to 390 psi,
- A bright and colorful digital display is integrated in the pump
- Read out on display
  - Discharge pressure
  - Resulting set point
  - Inlet pressure
  - Liquid temperature
- Automatic air vent valve for extra protection of the pump

Technical Data	Unit	OPC-PB 120 C
<b>Water</b>		
Pump pressure at 100 PSI inlet pressure	PSI	390
Min./max. inlet pressure	PSI	30/130
Max. water consumption	GPM	30
Max. temperature	°F	160
Pipe dimension inlet w/ tri clamp	Inch	1.5"
Pipe dimension outlet w/ tri clamp	Inch	1.5"

Power Supply		
Standard voltage	V	380-500
Frequency	Hz	50-60
Max. power consumption	KW (HP)	6.0 (8.0)

Size		
Dimensions (WxHxD)	Inch	20"x38"x15"
Weight	Lbs	190

Item Number	Description	Accessories
P9810	OPC-PB 120 C 8.0 HP	Starting on page 20



# Single Pump Booster Station

## OPC-PB 200 C



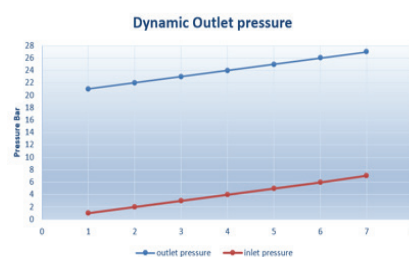
- For 4 users
- Frequency controlled with newest Grundfos technology and high performance E15 standard motor
- Dynamic outlet pressure! Up to 390 psi,
- A bright and colorful digital display is integrated in the pump
- Read out on display
  - Discharge pressure
  - Resulting set point
  - Inlet pressure
  - Liquid temperature
- Automatic air vent valve for extra protection of the pump

Technical Data	Unit	OPC-PB 200 C
<b>Water</b>		
Pump pressure at 100 PSI inlet pressure	PSI	390
Min./max. inlet pressure	PSI	30/130
Max. water consumption	GPM	50
Max. temperature	°F	160
Pipe dimension inlet w/ tri clamp	Inch	1½"
Pipe dimension outlet w/ tri clamp	Inch	1½"

<b>Power Supply</b>		
Standard voltage	V	380-500
Frequency	Hz	50-60
Max. power consumption	KW (HP)	7.5 (10.0)

<b>Size</b>		
Dimensions (WxHxD)	Inch	24"x46"x16"
Weight	Lbs	275

Item Number	Description	Accessories
P9811	OPC-PB 200 C 10 HP	Starting on page 20



# Booster & Storage Tank System

## OPC-PB 120 PH System



- For 4 users (satellites)
- Compact platform in AISI 304 stainless steel with six (6) adjustable feet
- 50 gallon buffer vessel with electric heating elements
- Wetted parts and components in AISI316L SS, diaphragm & butterfly valves, etc.
- Full TACCT cleaning performance and flexibility w/purge
- Full instrumentation package, including level, pressure, flow, temperature and conductivity (low and high)
- Integrated electrical panel with AB Compact Logix PLC w/HMI station
  - Full recipe editor, alarm handling and cycle reporting to PDF
  - Prepared for internal cleaning and hot water & ozone sanitization

Technical Data	Unit	OPC-PB 120 PH System
Buffer tank	Gallon	50
Supply pressure	PSI	<390
Supply flow	GPM	<32
Temperature, Electric	°F	<200
Chemistry (2)	mS/cm	<200

Controls	
Allen Bradley compact Logix PLC	Yes
12" PC touch screen HMI	Yes
Data collection system	Optional
Purge functionality	Optional
Internal sanitization	Optional

Size		
Dimensions (LxWxH)	Inch	80 x 32.5 x 70.5
Weight, dry	Lbs	800

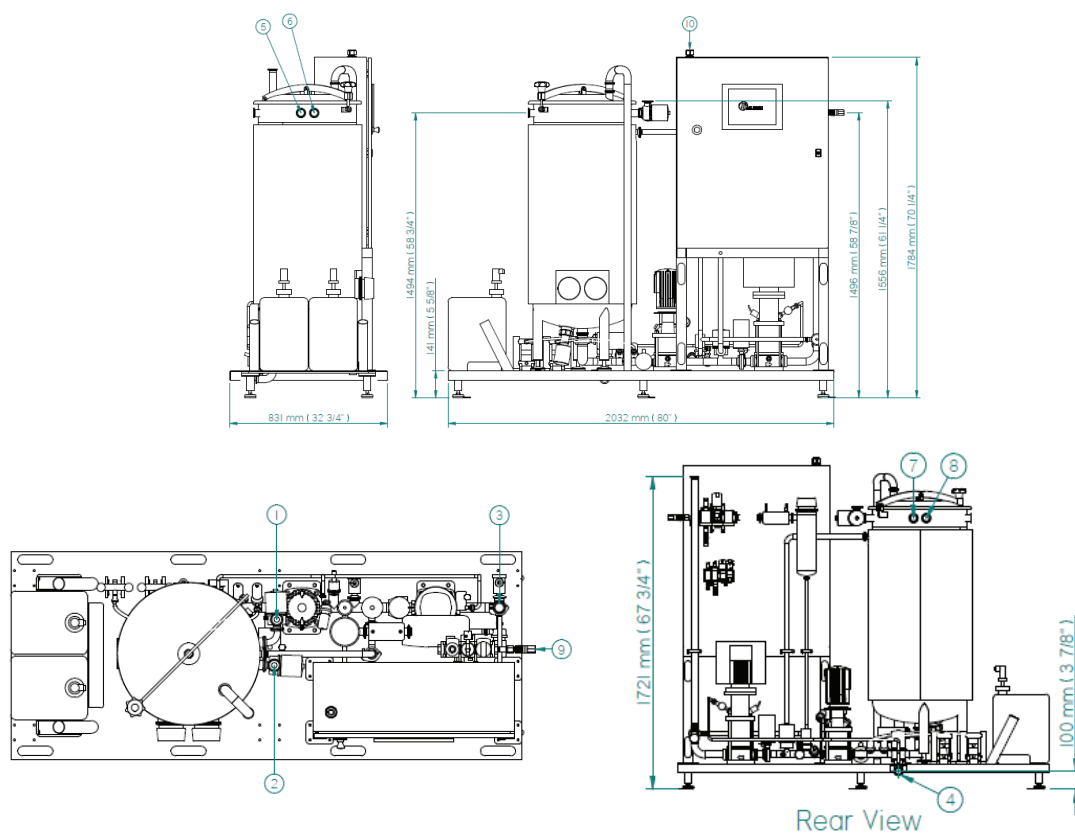
Item Number	Description	Accessories
P9814	OPC-PB 120 PH System	Starting on page 20



### User point / Satellite

- Manual rinse, foam, rinse, sanitize of open process equipment
- Adjustable parameters
- Local dosing of chemicals
- Retractable hose reel
- Efficient wash gun

## General layout & tie-in schematic



#	Designation	Connection	Pipe Size	Expected setup
1	Water (USP/PW), hot	1.5 Tri clamp	1" (25 mm)	< 40 gpm @ < 20 psi
2	Water (USP/PW), cold	1.5 Tri clamp	1" (25 mm)	< 40 gpm @ < 20 psi
3	CIP supply to satellites	1.5 Tri clamp	1.5" (38 mm)	<40 gpm @ < 350 psi
4	Vessel drain	1.5 Tri clamp	1.5" (38 mm)	<45 gpm @ < 35 psi
5	CIP return 1 (from Satellite A)	1.5 Tri clamp	1.5" (38 mm)	< 40 gpm @ < 45 psi
6	CIP return 2 (from Satellite B)	1.5 Tri clamp	1.5" (38 mm)	< 40 gpm @ < 45 psi
7	CIP return 3 (not used)	1.5 Tri clamp	1.5" (38 mm)	< 40 gpm @ < 45 psi
8	CIP return 4 (not used)	1.5 Tri clamp	1.5" (38 mm)	< 40 gpm @ < 45 psi
9	Compressed air	½" NPT	N/A	>25 CFM @ 90 psi
10	Electrical	Plug	40 rated amps	3x480V, ground, 60 Hz, 40 Amps

# Booster & Storage Tank System

## OPC-PB 270 PH System



- For 8 users (satellites)
- Compact platform in AISI 304 stainless steel with six (6) adjustable feet
- 100 gallon buffer vessel with electric heating elements
- Wetted parts and components in AISI316L SS, diaphragm & butterfly valves, etc.
- Full TACCT cleaning performance and flexibility w/purge
- Full instrumentation package, including level, pressure, flow, temperature and conductivity (low and high)
- Integrated electrical panel with AB Compact Logix PLC w/HMI station
  - Full recipe editor, alarm handling and cycle reporting to PDF
  - Prepared for internal cleaning and hot water & ozone sanitization

Technical Data	Unit	OPC-PB 270 PH System
Buffer tank	Gallon	100
Supply pressure	PSI	<390
Supply flow	GPM	<60
Temperature, Electric	°F	<200
Chemistry (2)	mS/cm	<200

Controls	
Allen Bradley compact Logix PLC	Yes
12" PC touch screen HMI	Yes
Allen Bradley software	Yes
Data collection system	Optional
Purge functionality	Optional
Internal sanitization	Optional

Size		
Dimensions (LxWxH)	Inch	80 x 32.5 x 70.5
Weight, dry	Lbs	1000

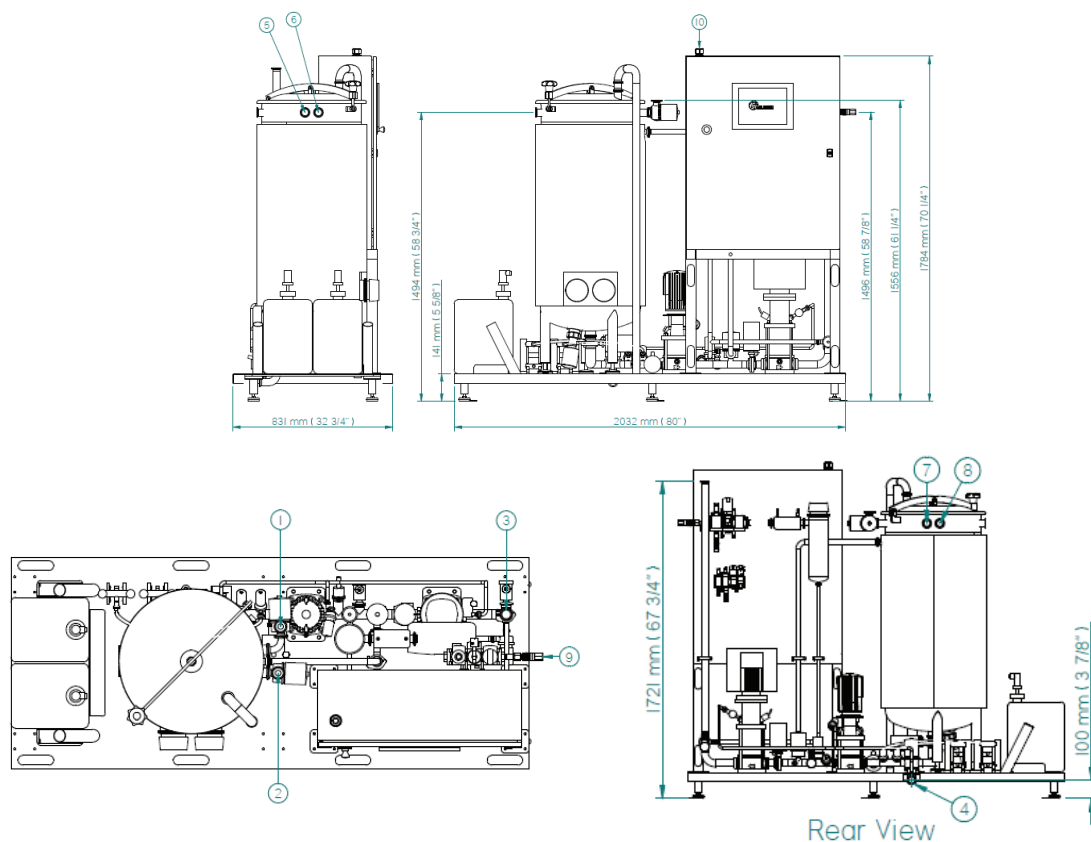
Item Number	Description	Accessories
P9815	OPC-PB 270 PH system	Starting on page 20



### User point / Satellite

- Manual rinse, foam, rinse, sanitize of open process equipment
- Adjustable parameters
- Local dosing of chemicals
- Retractable hose reel
- Efficient wash gun

## General layout & tie-in schematic



#	Designation	Connection	Pipe Size	Expected setup
1	Water (USP/PW), hot	1.5 Tri clamp	1.5" (38 mm)	< 40 gpm @ < 20 psi
2	Water (USP/PW), cold	1.5 Tri clamp	1.5" (38 mm)	< 40 gpm @ < 20 psi
3	CIP supply to satellites	1.5 Tri clamp	1.5" (38 mm)	<60 gpm @ < 350 psi
4	Vessel drain	1.5 Tri clamp	1.5" (38 mm)	<45 gpm @ < 35 psi
5	CIP return 1 (from Satellite A)	1.5 Tri clamp	1.5" (38 mm)	< 40 gpm @ < 45 psi
6	CIP return 2 (from Satellite B)	1.5 Tri clamp	1.5" (38 mm)	< 40 gpm @ < 45 psi
7	CIP return 3 (not used)	1.5 Tri clamp	1.5" (38 mm)	< 40 gpm @ < 45 psi
8	CIP return 4 (not used)	1.5 Tri clamp	1.5" (38 mm)	< 40 gpm @ < 45 psi
9	Compressed air	½" NPT	N/A	>25 CFM @ 90 psi
10	Electrical	Plug	40 rated amps	3x480V, ground, 60 Hz, 40 Amps

## OPC+ Accessories

We carry a wide range of accessories for Open Plant Cleaning (OPC+) units including hoses, hose holders, retractable hose reels, spray guns, low pressure valves and various nozzles.

We supply only high quality accessories for longer product life cycle.

All standard nozzles, which are included with the main stations and satellites, are all in stainless steel.

	<b>Nederman Hose Reel</b>		<b>Ramex Hose Reel</b>		<b>Stainless Steel Hose Holder</b>
	<b>Rinsing Nozzle</b>		<b>Disinfection Nozzle</b>		<b>Foam Nozzle</b>
	<b>Rinsing Lance</b>		<b>Foam Lance</b>		<b>Hoses</b>
	<b>Low Pressure Valves</b>		<b>Low Pressure Gun</b>		<b>Can Holders</b>

# **OPC+ Accessories**

## **Hoses, Hose Reels and Holders**

### **Hoses**

All standard hoses are mounted with stainless steel press couplings with ½" outer thread. Temperature range: 0 degrees to + 160 degrees fahrenheit. Max pressure: 1000 psi at 70 degrees.



#### **Standard Hoses**

M8101	30 ft CLEANPH standard
M8102	50 ft CLEANPH standard
M8104	80 ft CLEANPH standard



#### **Inlet Hose for Portable OPC+ Units**

M8110	30 ft inlet hose for mobile, 1"
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#### **Filter for Chemical hoses**

M8115	Filter for chemical hose
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#### **Standard Chemical Hoses with Filter**

M8116	6 ft Chemical hose, blue, with filter
M8117	6 ft Chemical hose, yellow, with filter
M8118	6 ft Chemical hose, red, with filter



#### **Hose Reels**

M8150	80 ft Hose Reel Automatic, Stainless steel
M8151	Swiveling bracket for 80 ft hose reel



#### **Hose Holder**

M8155	Hose holder, SS, for wall mount
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# OPC+ Accessories

## Can Holders, Valves and Wash Guns

### Can Holders

All can holders (chemical cans by your chemical provider) are in stainless steel



### Can Holders

Stainless steel can holders for 5 gallon cans

M8181 Double Can holder  
21.2" x 12.7"



M8182 Triple Can holder  
31.8" x 12.7"



### Valves

M8200 Boosted pressure valve, SS, with vulcanized coupling



M8201 Rubber boosted pressure valve with vulcanized coupling



### Guns

M8202 Foam Gun ST-2725 With ST-3100  
Vulcanized Rubber Coupling And With Swivel



M8203 Foam Gun 12-80 With Coupling and swivel  
Up to 750 PSI Pressure

# OPC+ Accessories

## Chemical Limiting Nozzles

### Chemical Limiting Nozzles

Chemical limiting nozzles in high resistant plastic. The set contains 0.1 mm – 0.3 mm – 0.5 mm – 0.6 mm – 0.7 mm – 0.8 mm – 0.9 mm – 1.1 mm – 1.3 mm – 1.5 mm.

The many different limiting nozzles allows you to make just the right chemical concentration.



### Chemical limiting nozzles

M8500

Chemical limiting nozzles 0.1 mm – 1.5 mm

### Couplings and Ball Valves

Below you will find a selection of couplings and ball valves.



#### Item number

M8550

#### Description

Quick Connect Coupling ½" Male thread, SS



#### Item number

M8551

#### Description

Quick Connect Coupling ½" male thread  
With Vulcanized Coupling SS



#### Item number

M8552

#### Description

Male coupling ¼" female thread, SS



#### Item number

M8553

#### Description

Male coupling ½" female thread, SS



#### Item number

M8554

#### Description

Press coupling ½" outer thread, SS



#### Item number

M8555

#### Description

Quick Connect Coupling 3/8" male thread  
With Vulcanized Coupling SS



#### Item number

M8556

#### Description

Ball valve with T-Piece ½" female thread, SS  
Incl. 1000037 Quick Coupling ½"



#### Item number

M8557

#### Description

Ball valve for L-grip ½" female thread, SS  
Incl. 1000037 Quick Coupling ½"

# OPC+ Accessories

## Rinsing, Foam & Disinfection Nozzles

### Nozzles

All rinse nozzles are in stainless steel.

Our standard nozzle program is shown below.



#### Rinse Nozzles

The first two digits is the spraying angle, while the last two digits is the water consumption in gallon per minute

M8250	Rinsing nozzle 00/8.0
M8251	Rinsing nozzle 15/6.5 High Impact
M8252	Rinsing nozzle 15/8.0 High Impact
M8253	Rinsing nozzle 15/10.5 High Impact
M8254	Rinsing nozzle 25/6.5 High Impact
M8255	Rinsing nozzle 25/8.0 High Impact
M8256	Rinsing nozzle 25/10.5 High Impact



#### Foam Nozzles

The first two digits is the spraying angle, while the last two is the air consumption in gallon per minute

M8280	Foam nozzle 65/40
M8280	Foam nozzle 50/55



#### Disinfection Nozzles

The first two digits is the spraying angle, while the last two is the water consumption in gallon per minute.

M8282	Disinfection
M8283	Disinfection nozzle 50/8.0

# OPC+ Accessories

## Nozzle Holders & Protectors

### Nozzle Holder

Our nozzle Holder is available in stainless steel only. The nozzle holder can hold up to 5 nozzles.



Item number	Description
M8300	Nozzle Holder 5 pc.

### Nozzle Protectors

Our nozzle protectors are available in 7 different colors. White and grey for foam nozzles.

Red, green, yellow, light blue and dark blue for disinfection nozzles



Item number	Description
M8301	Nozzle Protector White
M8302	Nozzle Protector Grey
M8303	Nozzle Protector Red
M8304	Nozzle Protector Green
M8305	Nozzle Protector Yellow
M8306	Nozzle Protector Light Blue
M8307	Nozzle Protector Dark Blue

### Rinsing and Foam Lances

Our rinsing lances are in stainless steel . The available lances are listed below:  
The first two digits is the spraying angle, while the last two is the water consumption in gallon per minute.

#### Stainless steel



Item number	Description
M8350	Rinsing lance 15/6.5 High Impact
M8351	Rinsing lance 15/8.0 High Impact
M8352	Rinsing lance 15/10.5 High Impact
M8253	Rinsing lance 25/6.5 High Impact
M8354	Rinsing lance 25/8.0 High Impact
M8355	Rinsing lance 25/10.5 High Impact



Item number	Description
M8356	Foam lance 10" 65/40
M8357	Foam lance 10" 50/55

# Quality System

## McFlusion (Project) Quality System

McFlusion uses a Quality Manual, which is based upon cGMP requirements, to define quality activities – thereby that all our deliverables meet our internal quality standards and requirements as well as the specific requirements stipulated by our clients.

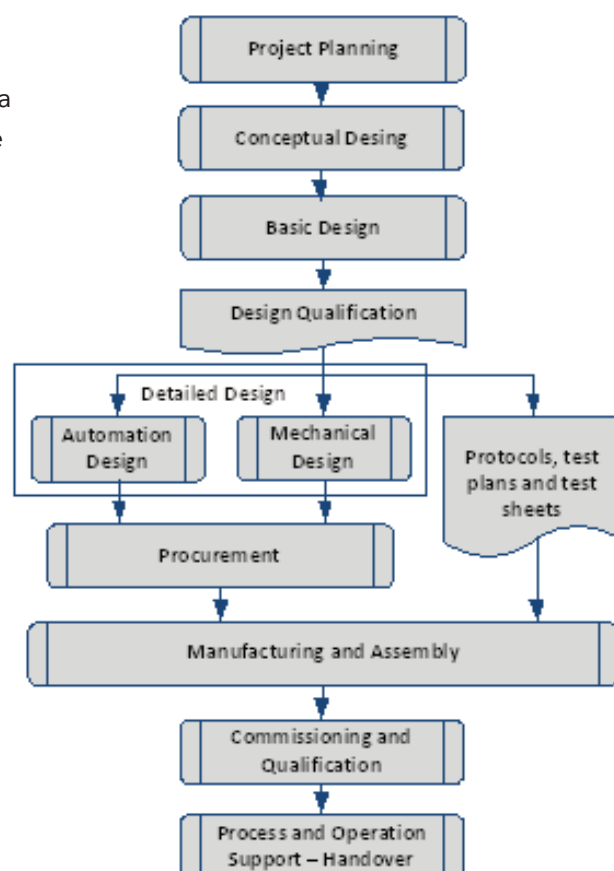
Our Quality Manual is structured in sections, which are divided into subsections. This structure allows the selection of activities that are relevant for the specific project.

After receipt of the PO, we will prepare a basic design package – comprising of P&ID, Layout drawing, component list, Software and Hardware Design Specification (SHDS) and a Project (Quality) Milestone Plan – that will be submitted to the client for review and approval.

The Project (Quality) Milestone Plan typically follows the sections (project phases), as listed below:

- Project and project planning in general
- Conceptual design (not required for standard equipment)
- Basic design
- DQ (design qualification and approval)
- Detailed design
- Protocols, test plans and sheets
- Procurement
- Manufacturing
- Assembly
- Commissioning and qualification
- Process and operation support - handover

Detailed information about McFlusion's Quality Manual will be provided upon request.



# Documentation

## **System documentation package:**

- P&ID
- Layout drawing
- Lead sheet
- Component list
- Software & Hardware Design Specification (SHDS) including attachments:
  - Electrical design (key diagrams)
  - PLC I/O list;
  - Report;
  - Alarm list;
  - User Interfaces;
  - Process Builder Design;
  - Instrument & Device settings;
- User manual;
- Service and maintenance lists;
- Spare parts lists;
- CD with technical literature (e.g. manuals for pumps, valves, and instruments);

## **GMP/QA documentation:**

- General manufacturing certificate for welding, materials used & surface roughness;
- Cleaning and passivation certificate;
- Test and performance certificate;
- Factory calibration documentation;
- McFlusion FAT protocol – based on PQS404 (Installation) and PQS405 (Operation and Performance) instructions and test scripts;
- FAT execution (2-3 days) - including full installation, operational and performance testing.

# Materials of Construction and Manufacturing

McFlusion is providing process equipment – exclusively – for the pharmaceutical and medical device industry segments. As such, our workshops and quality systems are designed for the highly regulated cGMP industry.

- All Non-Wetted (exterior) Surfaces:
  - T304 Stainless Steel, mechanical polish with all weld discoloration removed, unless otherwise specified.
- Wetted Sanitary Surfaces and tubing:
  - T316L Stainless Steel, mechanical polish with nominal surface finish of 25 Ra (tank, pipes & fittings, valve bodies, etc.);
- Sanitary tube welding:
  - All sanitary tube welding will be completed manually – or with an orbital welder. The welding is performed in an argon gas purged atmosphere.

The manual welds necessary on the equipment to minimize dead-leg distances will be performed by highly skilled welders, who perform the welds without the need for extra ground flush or interior polishing.

- Any weld – manual or orbital – not easily accessible will be inspected by a video boroscope. 100% of welds are inspected by McFlusion QA to determine, if the weld is acceptable or not.

Acceptance of welds is based on the ASME BPE 2012 color atlas and the FORCE institute standards.

- Elastomers:
  - FDA approved EPDM are applied for gaskets, seals and diaphragms.

## About McFlusion

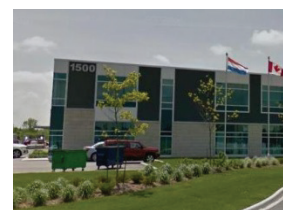
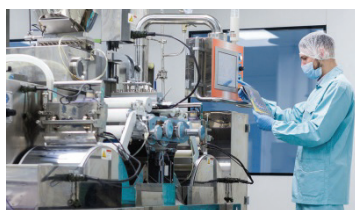
### Cleaning, Sanitization and Sterilization are at the core of what we do

We are subject matter experts within process cleaning, sanitization and sterilization and are renowned for our targeted problem-solving approach that provides our clients with the best possible process and equipment solution by using our process, technology and regulatory expertise to ensure that they can manufacture quality products.

McFlusion process cleaning (CIP/COP), sanitization and sterilization (SIP) equipment is designed for efficiency, lean operation and compliance - using all available TACCT parameters.

Our process cleaning (CIP/COP), sanitization and sterilization (SIP) products are perfectly suited for hard-to-remove product residuals as well as hard-to-clean applications, such as Oral (Solid and liquid) Dosage Form and OLC (ointment, liquid, creams) manufacturing facilities.

In all of the industries that we service our products outperform traditional cleaning and sterilization equipment.



### The McFlusion Group

The McFlusion Group consists of **McFlusion, Clean 3X and MorrFlo**.

**McFlusion** provides complete process and equipment solutions for cleaning (CIP/COP), sanitization and sterilization (SIP) to the highly regulated life science, pharmaceutical and medical device industries.

**Clean3X** provides cleaning and sanitization products for cleaning (CIP) and sanitization to cosmetic/topical, medical marijuana, and nutritional industries.

**MorrFlo** provides complete fluid handling and chemical dosing systems for industrial applications, such as oil and gas.



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