

CIP Unit “INTE-FLUSH”- *Modular*

Versatile Automated CIP Unit

Application

Cleaning - In - Place (CIP) allows hygienic cleaning between process runs, by the circulation of liquid cleaning solutions, without dismantling the system and its component parts.

Reliable cleaning of process equipment is a necessity for maintaining high product quality and maximizing plant output. The cleaning program flexibility is required for multiple cleaning applications.

The CIP unit type *INTE-FLUSH - Modular* is a pre-assembled skid mounted unit, pre-piped, pre-wired and ready for hookup of steam, water, air, electricity, concentrate chemical and sanitary piping.

All parameters that affect cleaning, such as flow rate, temperature, concentration of detergent and time, are automatically controlled.

The Integra CIP units are suitable for all applications within the food, dairy, beverage, pharmaceutical, biotechnological, cosmetic and fine chemical industries. Typical applications are the cleaning of storage tanks and process vessels, pipelines, filling and packaging machines, heat exchangers and all kinds of other in-line process equipment.



- *compact design, little space required*
- *simple installation, maintenance and commissioning*
- *sanitary design*
- *modular design, easy for expansion*
- *ease of operation with GUI*
- *individual object's parameters*
- *delivered as a pre-mounted plug-in unit*
- *many options to suit specific process*

Working Principle

The CIP unit functions automatically during the entire cleaning cycle.

The CIP upgrading program monitors filling of the CIP tanks, heating up of tank content and dosing detergent to obtain the right concentration before starting a cleaning cycle.

The cleaning program, depending on the concept, may consist of a combination of following cleaning step :

- First Pre-rinse
- Hot alkali cleaning / Cold alkali cleaning
- Intermediate rinse
- Hot acid cleaning / Cold acid cleaning
- Final rinse
- Chemical cold disinfection
- Hot water sterilization

Cleaning timers are only started when the desired cleaning temperature and detergent concentration are obtained into the return line.

A conductivity sensor controls the concentration of detergent and detects the phase transition water/detergent. The flow detection indicates when an object is empty and offers a control on the return of cleaning liquid from the object in cleaning.

All relevant parameters are displayed and can be adjusted from the operator panel for example:

- Temperatures
- Flow rate and volume
- Cleaning timers
- Detergent concentration
- Ratio of recovered detergent
- PID controller parameters
- Cleaning mode

The *INTE-FLUSH - Modular* unit can operate independently. They depend on the detergent tanks only for solution supply, the circulation is established over the unit's circulation tank. They combine the benefits of centralized control with the advantages of decentralized operation.



CIP Monitor and Control

Flow rate, temperature, concentration, time, . . . it takes a sophisticated method of control to keep your CIP system operating at peak efficiency. Integra offers the latest in control system hardware and software, featuring simplified CIP operation, data logging and messages generation as well as color graphics displays.

The control panel contains a PLC and a touch screen operator interface which can control maximum 32 cleaning routes with 16 different cleaning programs.

System Information

Sizes and capacity

Capacity range:

- up to 8 m³/h DN 40
- up to 16 m³/h DN 50
- up to 24 m³/h DN 65
- up to 50 m³/h DN 80

CIP pressure : max 4 bar

Temperature difference : approx. 15 - 20 °C

Steam pressure : max 6 bar 300 kg up to 1500 kg/h

Compressed air : min 5 bar

Water : depending on capacity

Technical data of equipment in circuit unit (Basic type)

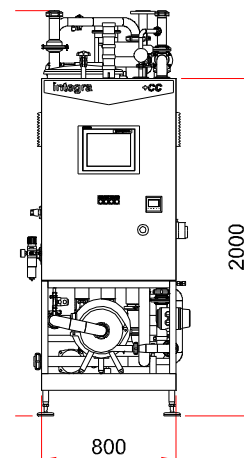
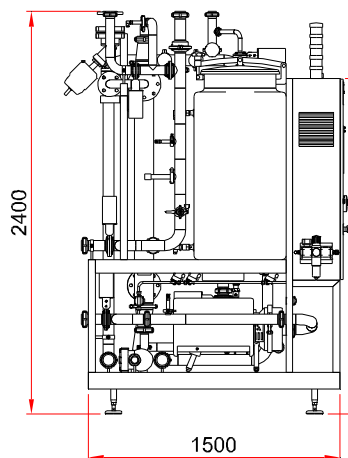
- circulation tank
- supply pump with frequency inverter
- tubular heat exchanger
- instrument
- set of actuated butterfly valves
- set of service valves
- complete internal piping ready for connection
- stainless steel frame
- control module
- material in contact with liquids : 316L
- dimension : 800 x 1500 x 2400 mm (W x L x H)

Optional Equipment

- level switches for supply tanks
- chart recorder recording temperature, conductivity and flow rate
- feed back of remote valve
- dosing pumps
- I/O communication to CIP objects
- shell and tube heat exchanger
- air condition for control panel
- air blow function
- printer
- SCADA
- remote control panel
- high supply pressure

Control Module

- stainless steel panel
- protection class IP65
- control voltage 24 VDC
- 15" TFT touch screen, 16K colors SIEMENS IPC with Windows OS
- CPU SIEMENS 315-2DP
- digital and analog inputs / outputs
- STEP 7 programming language
- USB printer interface
- Ethernet TCP/IP
- MPI and Profibus DP available
- dimension : 800 x 1200 x 300 mm (W x H x D)



Dimension in millimeter



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Specifications are subjected to change without notice.