

# Celsius® Filling Station FS16-S3



## Description

The Celsius® FS 16-S3 allows for the proper filling and pressurization of Celsius-Paks prior to freezing in a Celsius® Freeze and Thaw Module (FT33, FT66, or FT100). It is equipped with a printer for printing bag labels.

## Product Information

The Celsius® Filling Station is designed for semi-automated filling and gas overlay of single-use 1 L, 2 L, 8.3 L and 16.6 L Celsius® Paks. Only the operations of “loading”, “unloading” and “opening” and “closing” of the bag's pinch-clamps have to be completed manually. A docking point at the base of the frame allows docking of the Freeze and Thaw Transfer Carts used for transferring Celsius® Paks to the Freeze and Thaw (FT) modules. The Celsius® Filling Station simulates the correct plate distance and air compression for the Celsius® Paks used in the Celsius® Freeze and Thaw Module.

# Automation System

The Celsius® Filling Station is equipped with a Siemens Controller. It consists of a Human Machine Interface for operating, the programmable controller and the analog and digital signal interfaces. The controller is programmed for semi automatic filling. The user can define the filling weight from 0.25 to 18.4 kg. The gas overlaying range is fixed at 42 mbar (0.61 psi) +/-7 mbar (0.1 psi). The accuracy of filling is +/-50 g (0.11 lb). Also the program allows semi automatic gas overlaying. The software has 3 authorization levels implemented for users, service and administrators. The printout design and data of the connected printer are customizable.

The Celsius® Filling Station is equipped with a Sartorius platform balance 150 kg, type CAPS4-150GF-LCE, Sartorius printer for printing labels and a peristaltic pump. The electrical power is 100-240 VAC 50-60 Hz. The peristaltic pump, type Watson Marlow 630UN/R is used for transferring the fluid from the reservoir into the Celsius® Paks. The implemented controller allows filling and gas overlaying.

Printout design (for example):



# Overview



- 1. Controller with Human-Machine Interface
- 2. Printer
- 3. Peristaltic Pump
- 4. Platform Balance
- 5. Docking Point
- 6. Bag Holding Plates



- 1. Mass Flow Controller MFC
- 2. Automatic Valve
- 3. Pressure Transmitter

# MFC information

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## Mass Flow controller MFC

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Manufacturer	Bronkhorst
Type	F-201CI-10K-AGD-TT-B
Material	Stainless steel 1.4404 (316L)
Connection	ISO DN 08   ISO DN 08 - TC

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## Automatic Valve

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Manufacturer	Buerkert
Type	O330
Material	Stainless steel
Pressure	0 - 5 bar

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## Pressure Transmitter

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Manufacturer	WIKA
Type	S-20
Connection	G 1/4" - screwed

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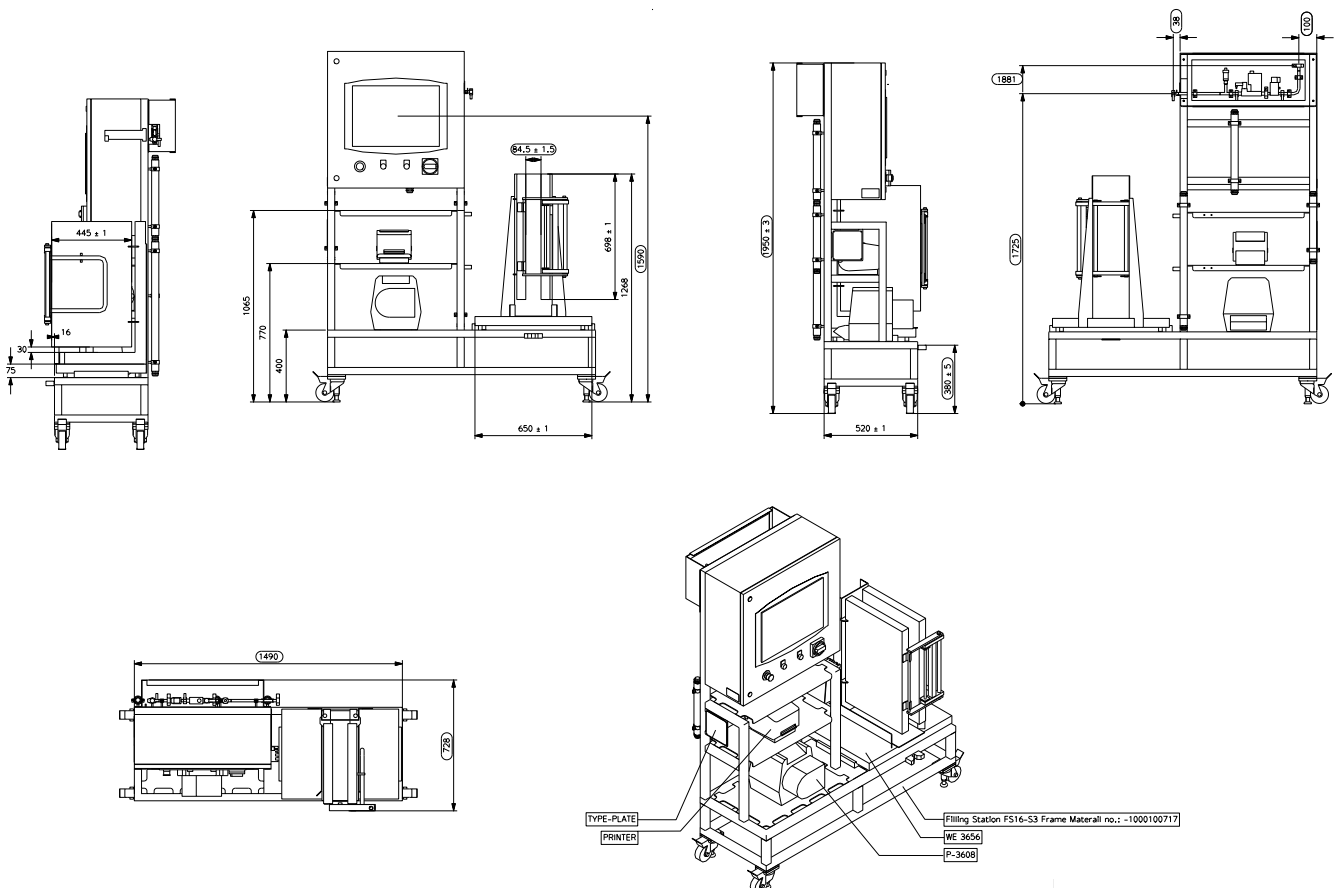


# Technical Data

## Specifications and Utilities

For system operation, the End-User has to provide the following utilities. All facility services must be pre-filtered (0.2 µm) and regulated. A specific system utility consumption list will be created during the project engineering phase. The following table gives a general overview about the system's requirements.

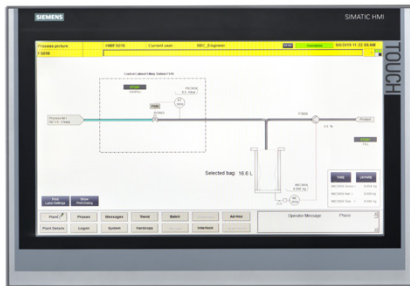
Fill Fixture   Frame	
Product Contact	N/A
Material	Stainless steel AISI304, grinded
Celsius Pak Contact Material	Surface roughness 0.8 µm
Approximate Dimensions (L x W x H)	1,490 x 725 x 1,981 mm (58.66 x 28.54 x 77.99 inch)
Approximate Weight	approx. 202 kg (445 lb)
Electrical Power	230VAC (+/-10%) 50Hz (+/-1%) 1 phase +N+PE (EU)  120VAC (+/-10%) 60Hz (+/-1%) 1 phase +N+GND (US)
Maximum Amperage	Maximum Fuse: 10 A (EU) 15 A (US)
Process Air/N2	2,5-3 barg Constant, oil free



All dimension are in mm

### Controller with Human-Machine Interface

Manufacturer	Siemens
Type	SIMATIC IPC 477E 19" Touch
Design	Hygienic Design, IP54 (Front Panel), AISI 304
Multi Connectivity	Profibus, Profinet, OPC UA, digital in- and output, USB port
Display	19" touch (1366 x 768)



### Printer

Manufacturer	Jacob Electronic GmbH
Type	Zebra GX420t
Paper width	19 to 108 mm (¾" to 4 ¼")
Print width	max. 104 mm (4 ⅜")
Print length	max. 991 mm (39 ⅛")
Electrical Power	100 - 240 V, 50 - 60 Hz
Interface	USB 1.1, Ethernet, Parallel, Serial
Resolution	203dpi



### Peristaltic Pump

Manufacturer	Watson Marlow
Type	Peristaltic Pump, 630 UN/R
Speed range	0.1 to 265 rpm
Remote Control	Run   stop, direction change, manual   auto mode
Options	Leak detector
Analog in- output	4 - 20 mA, 0 - 10 V
Rotor design	For different tubes with wall thickness 3.2 mm   8"
Speed range	0.1 to 265 rpm



### Platform Balance

Manufacturer	Minebea Intec
Type	CAAPS-150GF-BCE
Approximate dimensions (L x W x H)	650 x 500 x 92 mm (25 ⅞" x 19 ⅛" x 3 ⅝")
Material	AISI 304, stainless steel
Resolution	5   50 g (0.01 lb   0.11 lb)
Measurement range	150 kg (331 lb)




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