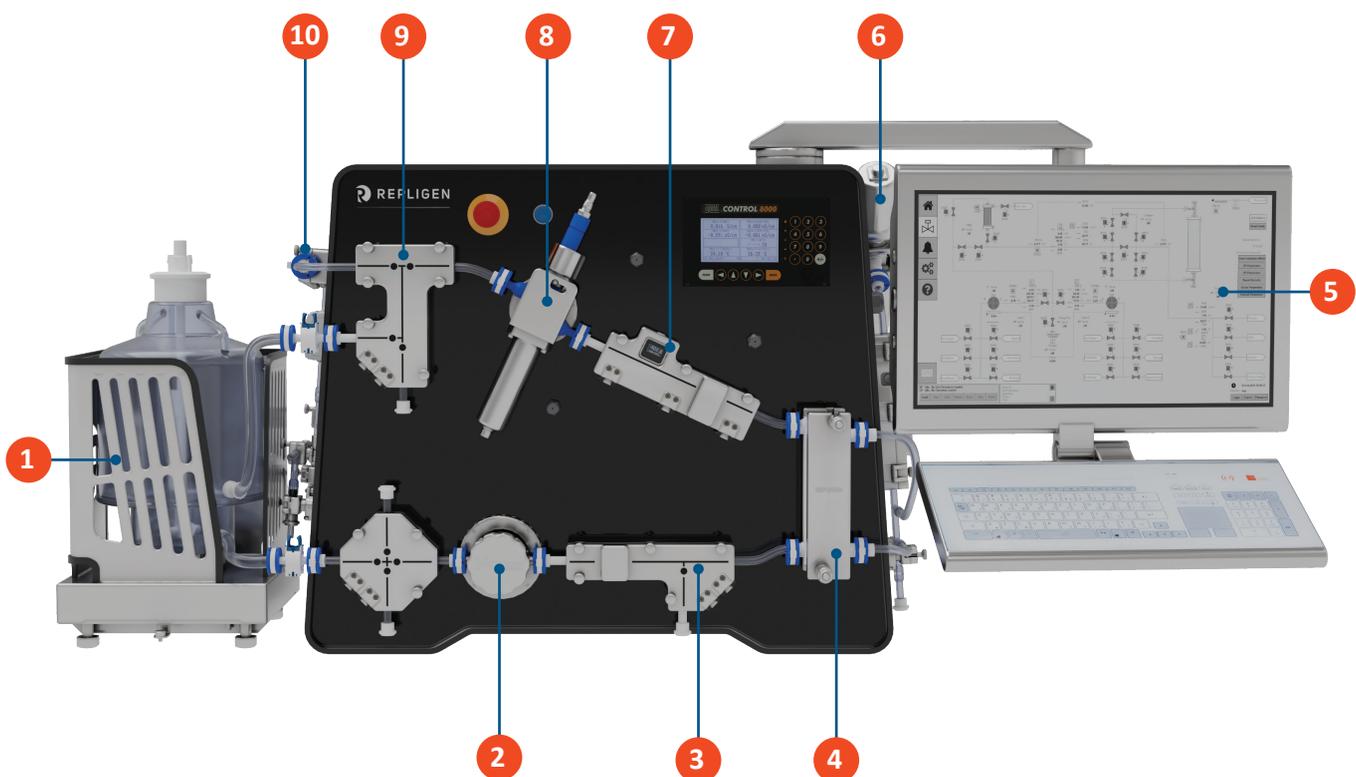


Fully automate processes

with a suite of integrated hardware components

¼" KrosFlo® Single-Use Tangential Flow Filtration (TFF) Systems integrate unique hardware to deliver significantly higher product yields and operational efficiency through increased automation capabilities.



Components

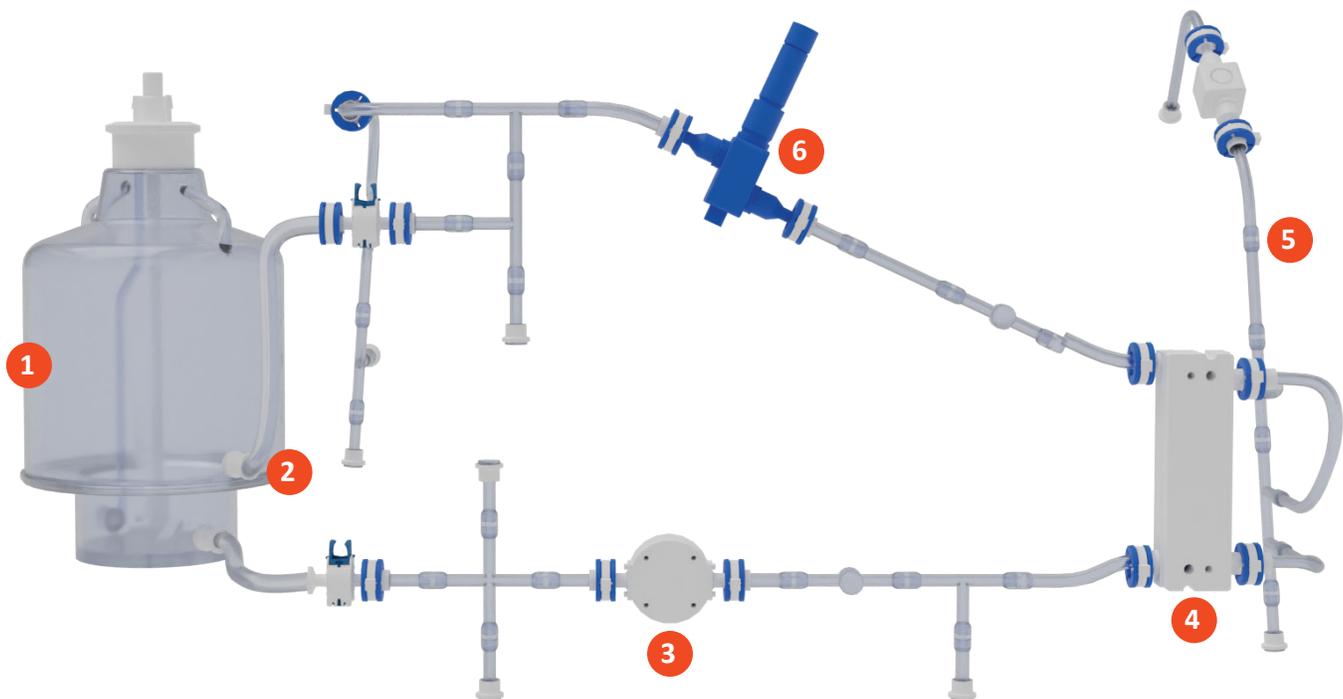
- | | |
|--|--|
| 1. 10 L Tulip recirculation vessel with weigh scale | 6. Permeate UV sensor (Optional) |
| 2. Diaphragm pump (feed and recirculation) | 7. Flow meters (Retentate and permeate) |
| 3. Pressure sensors
(Addition, recirculation, Retentate and permeate) | 8. Retentate Conductivity, Temperature and pH Sensor
(Optional) |
| 4. Cassette-holder | 9. TMP control valve |
| 5. 21" Touch screen and keyboard | 10. Peristaltic pump (Addition) |



Deliver high recovery and operational simplicity

with engineered flow paths

ProConnex® Flow Paths integrate advanced fluid management technologies, including over-molded connections, pump heads, tubing, filters, and sensors in a single-use device. Flow paths easily attach to the system to simplify operation and increase process efficiency.



Components

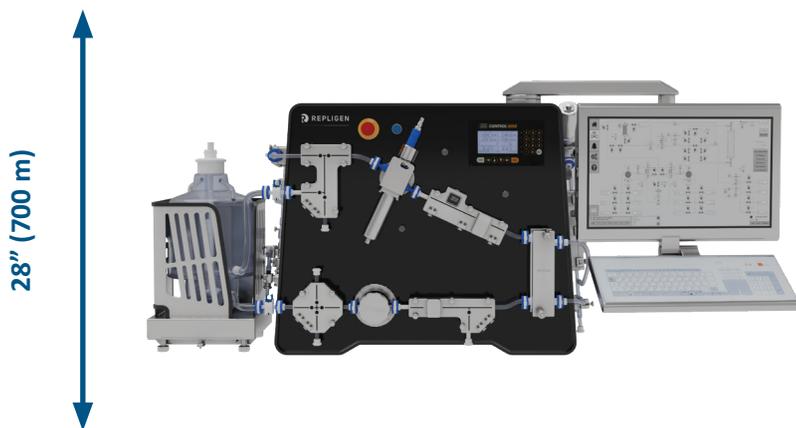
1. Tulip bottle
2. Recirculation loop inlet ports
3. Diaphragm pump head
4. Filter plate insert
5. Over-molded connections
6. Integrated sensors

Revised 08/11/2022

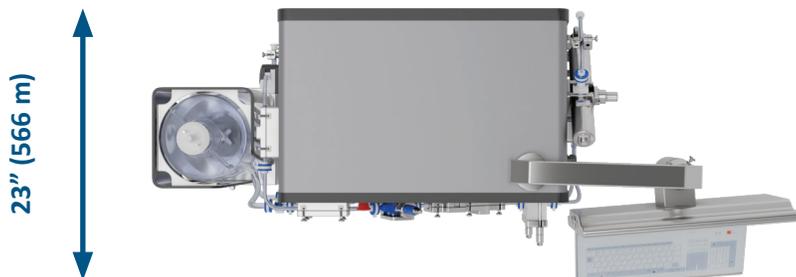
Signature features and advanced engineering

cGMP compliant, fully automated 1/4" KrosFlo® Single-Use Tangential Flow Filtration (TFF) System, with low hold-up volume, small footprint, and outstanding performance.

Dimensions



39" (999 m)



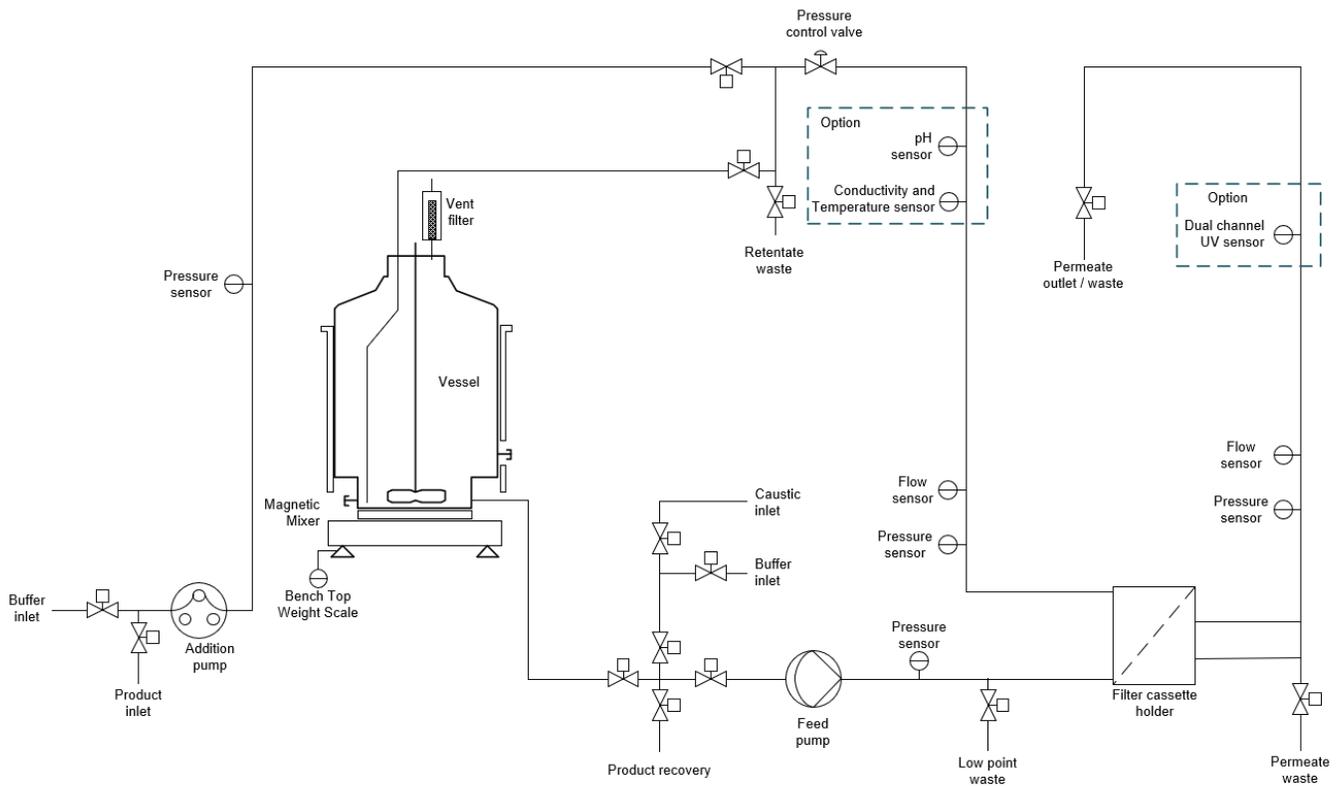
System process overview	
Membrane area	0.1 - 0.5 m ²
Addition flow rate	Maximum 0.8 LPM
Recirculation flow rate	Maximum 3 LPM
Recirculating loop volume without filter cassettes	≤ 50 mL
Minimum working volume	550 mL with 10 L tulip bottle

System mechanical overview	
System size	39" W x 23" D x 28" H
Power main	120 - 240 VAC (+/- 10%), 1 ph, 50/60 Hz, 15A
MoC	304 L SS #3A (System)



Expand filtration capabilities and automate more process sequences with additional valves

Single-use 1/4" Tangential Flow Filtration (TFF) System process flow diagram.



Revised 08/11/2017



Specifications

System specifications	
Membrane area	0.1 - 0.5 m ²
Recirculation pump	3 LPM Diaphragm
Feed/addition pump	0.8 LPM Peristaltic
Over pressure protection	Yes
Maximum flow-path pressure	4 bar
Recirculation loop volume	≤ 50 ml without cassette
Operating temperature range	4 - 40° (C)
Pneumatic supply	6 - 8 barg
System dimensions	39 m W x 23 m D x 28 m H
Power requirements	120 - 240 VAC, 1 ph, 50/60 Hz, main fuse 15A
Flow measurement locations	Retentate, permeate
Flow measurement range	0 - 10 LPM
Flow measurement accuracy	0 - 1 LPM: ±0.02 LPM, 1 - 10 LPM: ±2% of reading
Pressure measurement locations	Feed, retentate, permeate, addition
Pressure measurement range	0 - 4 bar
Pressure measurement accuracy	±0.3% of calibrated span
Temperature measurement location	Optional: retentate
Temperature measurement range	2 - 50° C
Temperature measurement accuracy	±1° C
Conductivity measurement locations	Optional: retentate
Conductivity measurement range	0.1 mS/cm to 150 mS/cm
Conductivity measurement accuracy	±2% of reading + 1% of full scale
UV measurement location	Optional: permeate
UV measurement range	0 - 1 AU
UV measurement accuracy	±1 % of reading +1% of full scale
UV sensor wavelength	Optional: 254/280 nm or 280/300 nm

Revised 08/11/2017



Specifications

System specifications	
pH measurement location	Optional: retentate
pH measurement range	3 - 10 pH
pH measurement accuracy	±0.3pH (0 - 2 bar, 4 - 50° C)
Enclosure ratings	IP54 minimum
PLC	Allen Bradley CompactLogix
HMI	21" Touch screen and glass keyboard with Industrial PC mounted in control cabinet
Software platform	Wonderware System Platform
Operating system	Windows 10
Network connection	Ethernet/IP, RJ45
Network connectivity	External monitoring and control ready. Dedicated network connections for both the PLC and the HMI. Ready for connection to Active Directory domain for consolidated logons.
Compliance and regulatory	UL61010-1, CE, RoHS, REACH, 21 CFR Part 11, EU Machinery Directive, ALCOA+
Weigh scale dimensions	305 mm L x 305 mm D
Weigh scale capacity	60 kg
Weight scale readability	0.002 kg
Magnetic stirrer power	Max 20 W

Vessel specifications	
Nominal volume	10 L
Minimum volume with agitation	0.5 L with impeller covered
Minimum volume with recirculation	0.5 L with lowest inlet covered
Impeller type	Rod mounted, magnetically coupled
Impeller blade count	2 per impeller
Impeller diameter	7.6 cm

