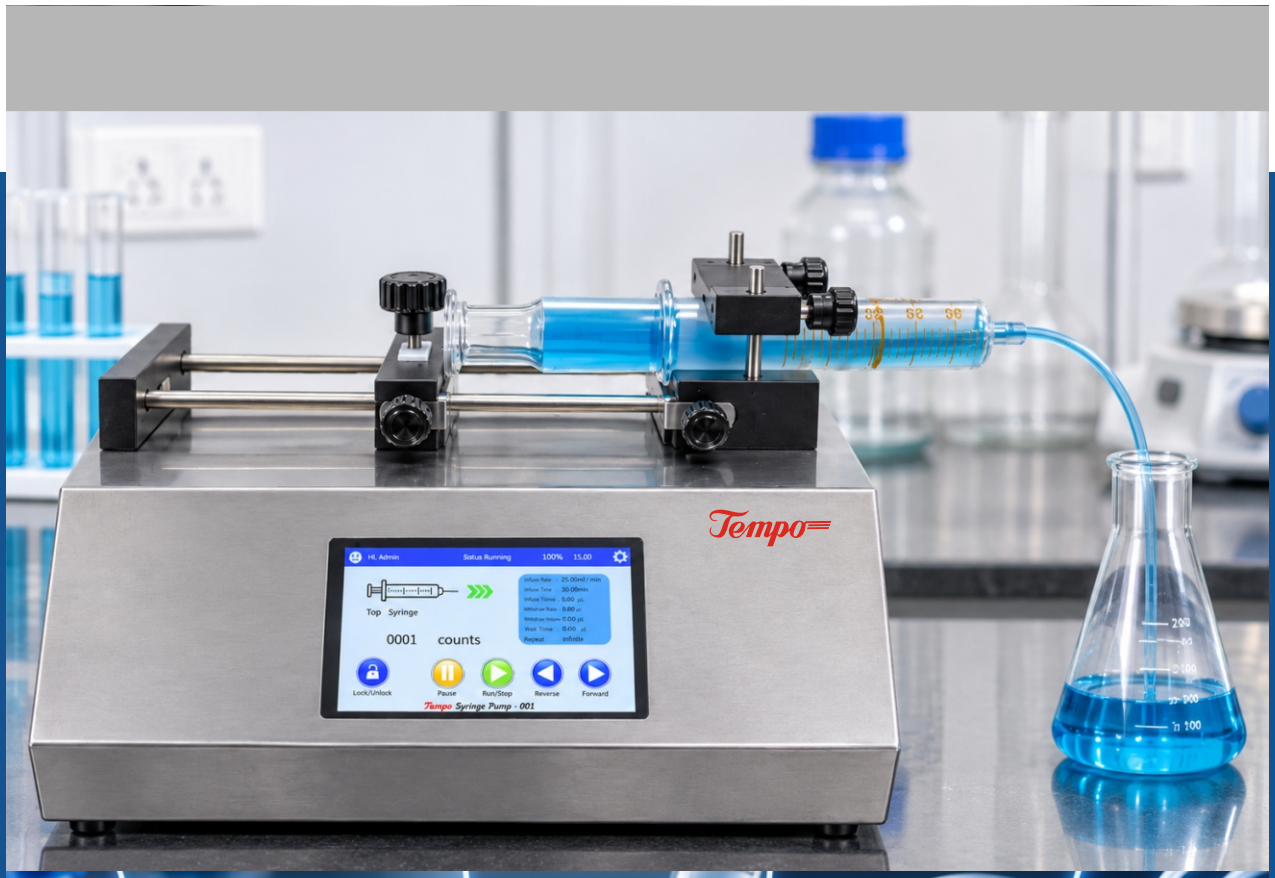
Tempo

Controlled Temperature Solution

SYRI FLOW

SYRINGE PUMP





PRODUCT BROCHURE

tempoinstruments.com

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About

The Tempo Syringe Pump Series is a precision liquid-handling platform designed to deliver smooth, accurate, and repeatable fluid flow for laboratory research, analytical instrumentation, chemical processing, and R&D applications.

The platform combines a precision stepper-motor drive, lead-screw mechanism, secure syringe mounting, and an intuitive touchscreen interface to provide controlled liquid delivery across a broad range of flow rates and syringe sizes.

From basic infusion to programmable infusion/withdrawal and multi-syringe applications, the Tempo platform can be configured to match the requirements of different laboratory processes.

Applications

The Tempo Syringe Pump can be used across a wide range of laboratory and R&D applications.

LABORATORY RESEARCH

- Reagent addition
- Sample preparation
- Controlled dosing
- Fluid transfer
- Dilution
- Dispensing
- Titration
- Mixing
- Slow infusion
- Timed delivery

CHEMICAL RESEARCH

- Chemical synthesis
- Organic synthesis
- Reactor dosing
- Catalyst addition
- Flow chemistry
- Polymer research
- Viscosity studies
- Emulsion preparation

BIOLOGICAL & LIFE SCIENCES

- Cell research
- Perfusion
- Microdialysis
- Drug-development research
- Reagent delivery
- Biological sample preparation

ANALYTICAL APPLICATIONS

- HPLC related applications
- Mass spectrometry
- Calibration
- Electrospray applications
- Chromatography
- Analytical sample preparation
- Microfluidics

Features & Advantages

INFUSION & WITHDRAWAL MODES : Flexible for a wide range of applications

TOUCHSCREEN HMI : Capacitive display with intuitive, easy to-use interface

HIGH ACCURACY : ±1% accuracy across supported syringe sizes

WIDE SYRINGE COMPATIBILITY : 1 ml to 50 ml syringes

LOGIN SECURITY : Controlled access for multiple users

INTERNAL DATA LOGGING : Store syringe profiles and experimental data

REAL-TIME CLOCK : Accurate time-stamped records

CONNECTIVITY OPTIONS : USB Type-C, RS232/485, and 4–20 mA interface

MOTOR RUNNING STATE SENSOR : Ensures safe and reliable operation

USER CALIBRATION : Simple in-field calibration for customized accuracy

LIVE MONITORING : Real-time display of dispensed or withdrawn volume

Technical Specifications

SYRINGE SIZE RANGE
1 ml to 50 ml

FLOW RATE RANGE (depends on syringe size)
0.25 µl/min to 200 ml/min

ACCURACY
±1%

OPERATION MODES
Infusion & Withdrawal

POWER SUPPLY
230V AC

DRIVE SYSTEM
Stepper Motor with precision lead screw

CONTROL INTERFACE
Capacitive Touchscreen HMI

COMMUNICATION PORTS
USB Type-C

MEMORY
Internal storage for profiles and logs

Why Choose Tempo Syringe Pump ?

- Precise and repeatable liquid delivery
- Infusion and withdrawal capabilities
- Wide range of syringe sizes
- Built-in syringe library
- High-torque precision motor drive
- Precision lead-screw mechanism
- Intuitive capacitive touchscreen HMI
- Compatible with plastic, glass, and stainless-steel syringes
- Custom syringe configuration
- User calibration
- Live volume and flow monitoring
- Programmable operating profiles
- Login security for controlled access
- Real-Time Clock for time-stamped operation
- Suitable for laboratory automation and R&D applications

Package Includes

Syringe Pump Unit

User Manual

Warranty Card

Syringe Pump Models



TEMPO SYRIFLOW ONE INFUSE SYRINGE PUMP

SINGLE-SYRINGE INFUSION PUMP

The Tempo Infusion ONE is a dedicated infusion pump designed for applications requiring precise and continuous delivery of a single liquid. The pump provides user-defined flow rates with selectable target volume or operating time, making it suitable for both simple and long-duration infusion applications.

APPLICATIONS

- Controlled reagent addition
- Chemical and biological research
- Precision dosing
- Analytical instrumentation
- Microfluidic systems
- Flow chemistry
- Long-duration infusion
- Laboratory automation
- R&D applications

KEY FEATURES

- Single syringe
- Infusion-only operation
- Programmable flow rate
- Target volume or time
- Live volume monitoring
- Syringe library
- Custom syringe
- User calibration
- Touchscreen interface



TEMPO SYRIFLOW ONE WITHDRAW SYRINGE PUMP

SINGLE-SYRINGE WITHDRAWAL PUMP

The Tempo Withdrawal ONE is designed for controlled withdrawal and aspiration of liquids. It provides precise reverse syringe movement for applications requiring controlled sample collection, liquid transfer, or extraction.

APPLICATIONS

- Sample collection
- Controlled aspiration
- Chemical extraction
- Laboratory sampling
- Analytical instrumentation
- Sample preparation
- Liquid recovery
- Automated laboratory processes



TEMPO
SYRI FLOW ONE INFUSION & WITHDRAWAL SYRINGE PUMP

The Tempo Infusion ONE I/W combines infusion and withdrawal functionality in a single syringe pump. The bidirectional drive allows users to switch between forward and reverse liquid movement according to the requirements of the application.

APPLICATIONS

- Sample transfer
- Reagent addition and recovery
- Re-circulation systems
- Automated liquid handling
- Chemical research
- Biological research
- Flow chemistry
- Analytical instrumentation
- Precision dosing
- Laboratory automation

OPERATING MODES

- Infuse Only
- Withdraw Only
- Repeating Infuse/Withdraw



TEMPO
SYRI FLOW DUO INFUSE / WITHDRAW SYRINGE PUMP

DUAL-SYRINGE PRECISION PUMP

The Tempo Infusion DUO provides independent control of two syringes in a single instrument. The dual-channel architecture allows two liquids to be delivered independently or according to a synchronized program.

APPLICATIONS

- Two-component reagent delivery
- Chemical synthesis
- Gradient generation
- Dual-liquid infusion
- Dilution
- Mixing
- Flow chemistry
- Laboratory automation

KEY FEATURES

- Two syringe drives
- Infusion and withdrawal capability
- Programmable operation
- Live monitoring of both channels



Tempo SYRI FLOW Quad Syringe Pump

FOUR SYRINGE MULTI CHANNEL PUMP

The Tempo Infusion QUAD is designed for applications requiring multiple independently controlled liquid channels. Four syringe drives allow multiple reagents or fluids to be delivered simultaneously or according to programmed sequences.

APPLICATIONS

- Multi-reagent dispensing
- Chemical formulation
- Gradient generation
- Multi-component reactions
- Automated experiments
- Flow chemistry
- Laboratory automation



Tempo SYRI FLOW High Pressure / High Pressure Duo Syringe Pump

PRECISION LIQUID DELIVERY UNDER PRESSURE

The Tempo High-Pressure Syringe Pump is designed for applications where liquid must be delivered against elevated system pressure. A rigid mechanical structure, high-torque motor and precision lead-screw drive provide controlled syringe movement for demanding applications.

APPLICATIONS

- High-pressure chemical research
- Flow chemistry
- Reactor injection
- High-pressure fluid delivery
- Material research
- Analytical systems
- Specialized laboratory processes

KEY FEATURES

- Two syringe drives
- Infusion and withdrawal capability
- Programmable operation
- Live monitoring of both channels

Intuitive Touchscreen Interface

The Tempo touchscreen interface is designed to display the important operating parameters simultaneously.

On Run-Screen, the operator can view:

- Selected operating mode
- Syringe size
- Flow rate
- Target volume
- Dispensed/withdrawn volume
- Elapsed time
- Remaining time
- Operating status
- Direction of flow

EASY 4-STEP SETUP

The Tempo interface can be organized around four simple steps:

Step 01



SELECT MODE

Infusion /
Withdrawal

Step 02



SELECT SYRINGE

Choose from the built-in syringe library or create a custom syringe.

Step 03



SET FLOW RATE

Enter the required flow rate and select the appropriate engineering unit.

Step 04



SET TARGET

Set:
- Target volume
- Operating time
- Number of cycles
- Program sequence

Programmable Operations

The Tempo Syringe Pump can support programmable multi-step operation for applications requiring changes in flow rate, direction, volume, or timing.

Programmable Functions

- Time delay
- Repeating cycles
- Infusion
- Withdrawal
- Start/stop events

Frequently used programs can be stored and recalled directly from the HMI.

Syringes for Syringe Pump

SYRINGE COMPATIBILITY

Tempo syringe pump supports multiple syringe materials to accommodate different laboratory requirements.

PLASTIC SYRINGES

Suitable for general laboratory applications and routine liquid handling.

GLASS SYRINGES

Glass syringes provide precise liquid handling and chemical compatibility for
demanding laboratory applications.
Tempo Syringe Pump supports LOR glass syringes equipped with stainless-steel
lower locks, providing a robust and durable syringe connection.

STAINLESS-STEEL SYRINGES

Stainless-steel syringes are available for applications requiring:
- High durability
- Chemical resistance
- Repeated operation
- High-pressure liquid handling
- Demanding laboratory environments

SYRINGE LIBRARY

The built-in syringe library allows the operator to select a predefined syringe from the touchscreen interface.
Once selected, the system can use the corresponding syringe parameters for calculating:
- Plunger displacement
- Dispensed volume
- Flow rate
- Motor movement
- Operating limits

CUSTOM SYRINGE
For syringes outside the standard library, the operator can create a Custom Syringe profile by entering the required syringe dimensions.
This allows compatibility with syringes from different manufacturers and makes the system easier to adapt to specialized laboratory applications.

CALIBRATION

The Tempo Syringe Pump provides user-accessible calibration to optimize dispensing performance for a particular application.

Calibration can account for variations associated with:
- Syringe type
- Syringe dimensions
- Liquid characteristics
- Tubing configuration
- Application requirements

The calibrated parameters can then be stored for subsequent operation.

USER ACCESS AND DATA MANAGEMENT

Login Security
User login provides controlled access to the system and its operating functions.
This can help laboratories maintain controlled operation when multiple users share the same instrument.

Real-Time Clock
The integrated Real-Time Clock allows operations and records to be associated with accurate time information.

Profile Storage
Frequently used syringe configurations and operating parameters can be saved and recalled to simplify repetitive workflows.

PRODUCT FAMILY

MODEL	SYRINGES	OPERATION	PRIMARY APPLICATION
Tempo SYRI flow ONE Infuse	1	Infusion	Precision liquid delivery
Tempo SYRI flow ONE Withdraw	1	Withdrawal	Precision liquid aspiration
Tempo SYRI flow ONE Infuse / Withdraw	1	Infusion + Withdrawal	Bidirectional liquid handlings
Tempo SYRI flow DUO Infuse	2	Infusion	Precision liquid delivery
Tempo SYRI flow DUO Withdraw	2	Withdrawal	Precision liquid aspiration
Tempo SYRI flow DUO Infuse / Withdraw	2	Infusion + Withdrawal	Bidirectional liquid handlings
Tempo SYRI flow QUAD	4	Infusion / Withdrawal	Multi-liquid automation
Tempo SYRI flow HP	1	Infusion	High-pressure liquid delivery
Tempo SYRI flow HP DUO	2	Infusion	Multi-channel high pressure applications

TECHNICAL SPECIFICATIONS

- Syringe configuration- 1/2/4Syringes
- Syringe size range- 1mL to 50 mL
- Operation modes- Infusion / Withdrawal / Infusion + Withdrawal
- Flowrate range- 15 ul/hr - 12240 ml/hr
- Accuracy +/- 1%
- Drive system- Stepper motor with precision leadscrew setup
- Syringe Material- Plastic, Glass and Stainless steel
- Interface- Captive touchscreen
- Real-time clock
- Storage- Profiles, Users, Logs
- Power supply – 230 V AC

SYRINGE FLOWRATE

SYRINGE SIZE	MIN FLOWRATE	MAX FLOWRATE
1 ml	15 ul/hr (0.25 ul/min)	120 ml/hr (2 ml/min)
2 ml	300 ul/hr (5 ul/min)	1080 ml/hr (18 ml/min)
5 ml	2700 ul/hr (45 ul/min)	3000 ml/hr (50 ml/min)
10 ml	60 ml/hr (1 ml/min)	4200 ml/hr (70 ml/min)
20 ml	60 ml/hr (1 ml/min)	5850 ml/hr (97.5 ml/min)
30 ml	60 ml/hr (1 ml/min)	8280 ml/hr (138 ml/min)
50 ml	600 ml/hr (10 ml/min)	12240 ml/hr (204 ml/min)

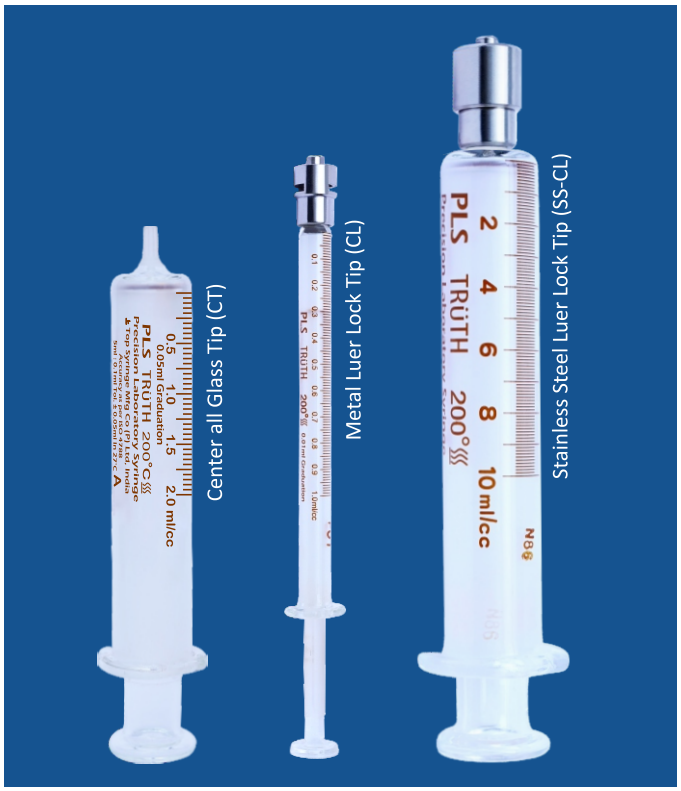
Calibrated Glass Syringes for Syringe Pump

TRÜTH™ Calibrated Glass Syringes (PLS) are Certified Volumetric measuring Instruments as per Class A ISO 4788. The syringes offer a jerk free experience while collecting and dispensing accurate liquid doses through a 100% inert liquid path of borosilicate glass that also withstands higher pressures.Ideal for laboratory liquid handling of various liquids including Plastic Sensitive Materials, hazardous chemicals, Adjuvant solutions, petroleum derivatives, glues, synthetic dyes, perfumes, essential oils and organic chemicals.

Recommended for your Good Laboratory Practices (GLP) / GMP Certified facility at quality control, quality assurance etc.

FEATURES

- Class of accuracy is Class A as per ISO 4788
- Permissible error of ± 1% & 0.5%
- Autoclavable at 121°C, can withstand upto 200°C
- Outstanding Chemical Resistance being made of 3.3 Borosilicate Glass
- Extremely air tightness and can hold a particular pressure
- 100% jerk free movement
- Fine graduation markings (up to 0.01ml)
- Glass Barrels & Pistons are made from borosilicate Glass
- Graduation marks are permanently fused into a glass barrel
- Inert Liquid Path, No 'O' Ring
- Calibration Certificate with Each Syringe
- Suitable for all types of needle as per ISO594/1;595/2
- Luer locks are Nickel-crome plated brass or Stainless Steel (SS316) as per ISO 594/1; 595/2



TRÜTH™ CENTER ALL GLASS TIP (CT)

CATALOG	VOLUME	GRADUATION	PACK	Max Pressure Rating Bars | PSIG
04-04-01-01	1ml	0.01ml	10pcs	—
03-06-01-03	2ml	0.05ml	10pcs	3.00 43.50
03-08-01-04	5ml	0.1ml	10pcs	3.00 43.50
03-09-01-04	10ml	0.1ml	10pcs	2.00 29.00
03-10-01-06	20ml	0.5ml	10pcs	2.00 29.00
03-13-01-06	50ml	0.5ml	1pc	1.50 21.76
03-15-01-06	100ml	0.5ml	1pc	1.50 21.76

NOZZLE TYPES



CT

TRÜTH™ METAL LUER LOCK TIP (CL) (NICKEL CHROME PLATED BRASS)

CATALOG	VOLUME	GRADUATION	PACK	Max Pressure Rating Bars | PSIG
04-04-02-01	1ml	0.01ml	10pcs	—
03-06-02-03	2ml	0.05ml	10pcs	3.00 43.50
03-08-02-04	5ml	0.1ml	10pcs	3.00 43.50
03-09-02-04	10ml	0.1ml	10pcs	2.00 29.00
03-10-02-06	20ml	0.5ml	1pc	2.00 29.00
03-13-02-06	50ml	0.5ml	1pc	1.50 21.76
03-15-02-06	100ml	0.5ml	1pc	1.50 21.76



CL

TRÜTH™ STAINLESS STEEL (SS 316) LUER LOCK TIP (SS-CL)

CATALOG	VOLUME	GRADUATION	PACK	Max Pressure Rating Bars | PSIG
04-04-75-01	1ml	0.01ml	10pcs	—
03-06-75-03	2ml	0.05ml	10pcs	3.00 43.50
03-08-75-04	5ml	0.1ml	10pcs	3.00 43.50
03-09-75-04	10ml	0.1ml	10pcs	2.00 29.00
03-10-75-06	20ml	0.5ml	10pcs	2.00 29.00
03-13-75-06	50ml	0.5ml	1pc	1.50 21.76
03-15-75-06	100ml	0.5ml	1pc	1.50 21.76



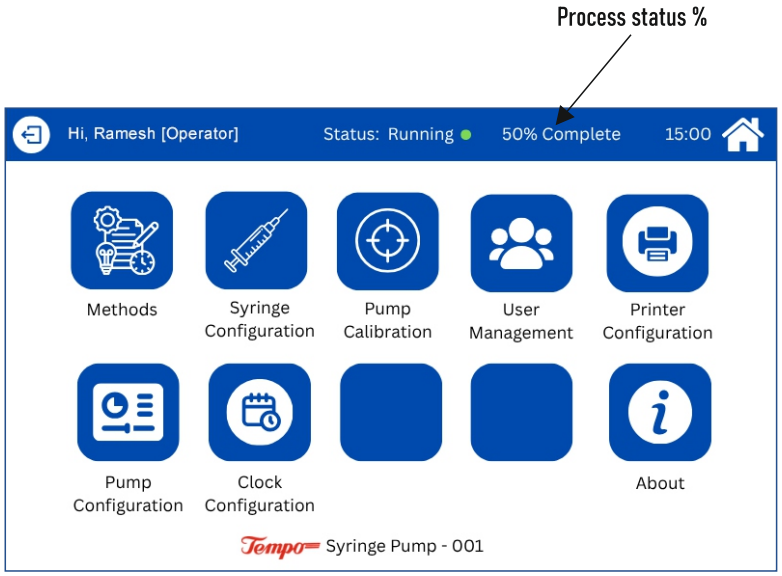
SS-CL

Syringe Pump User Interface

Navigation

HOME SCREEN

Every function is one tap away from the home screen, with the operator name, run status, process progress and clock always visible in the header.

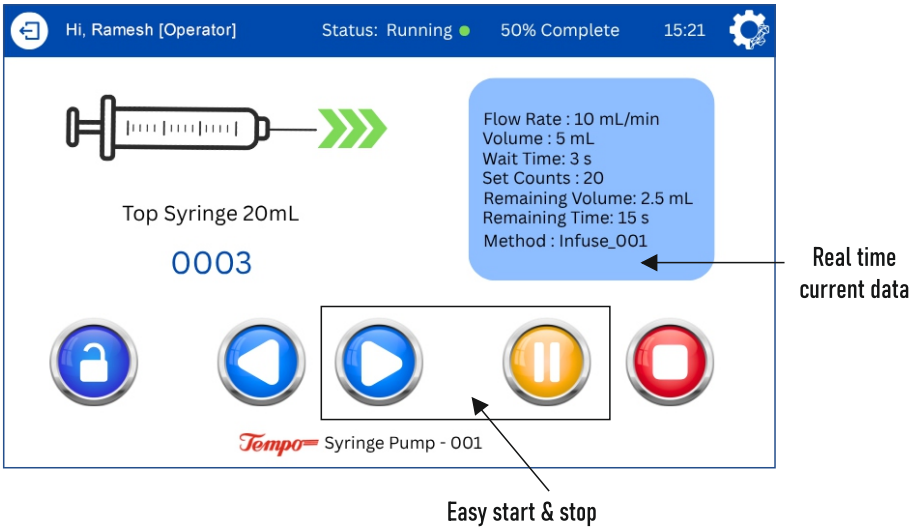


Multiple option for storage / user management

Live Operation

RUN SCREEN — INFUSION

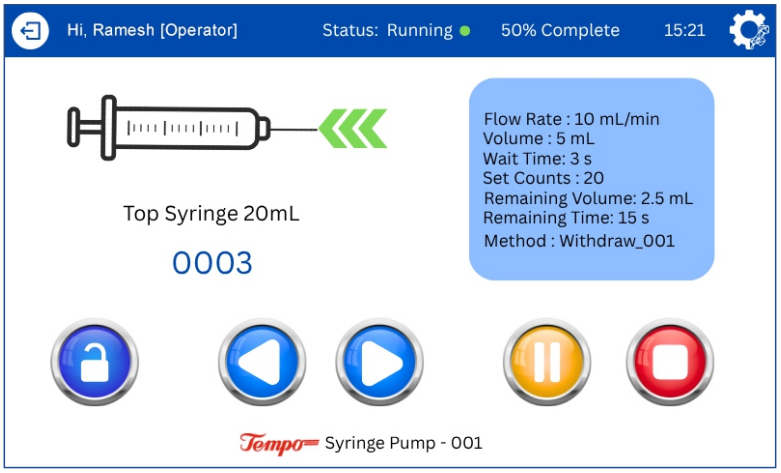
Monitor the active run at a glance: the selected syringe, direction of flow and a live summary of the running method.
Live data panel: flow rate, volume, wait time, set counts, remaining volume, remaining time and method name.
Direction indicator shows infusion in progress.
Large, touch-friendly lock, start, pause and stop controls.
Status and percentage complete shown in the header.



Lock / Safety Screen

RUN SCREEN — WITHDRAWAL & LOCK

The same clear layout applies when withdrawing, with the direction arrows reversed. The lock control helps prevent accidental changes while a run is in progress.
Reversed direction indicator for withdrawal.
Method name, flow rate, volume and counts displayed live.
Lock control for safe, controlled operation.
Pause and stop option available at any time.

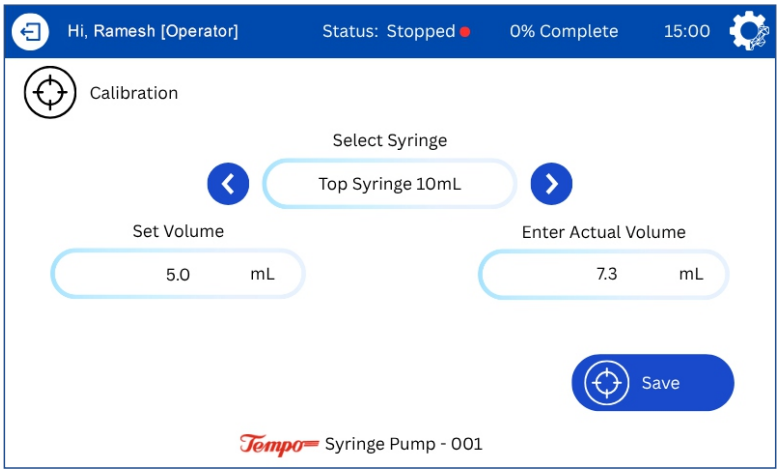


Lock / Safety screen

Syringe Library

SYRINGE CONFIGURATION

Select a stored syringe or define a custom one by entering its inner diameter and volume, then save it to the built-in syringe library.
Supports custom syringe configuration.

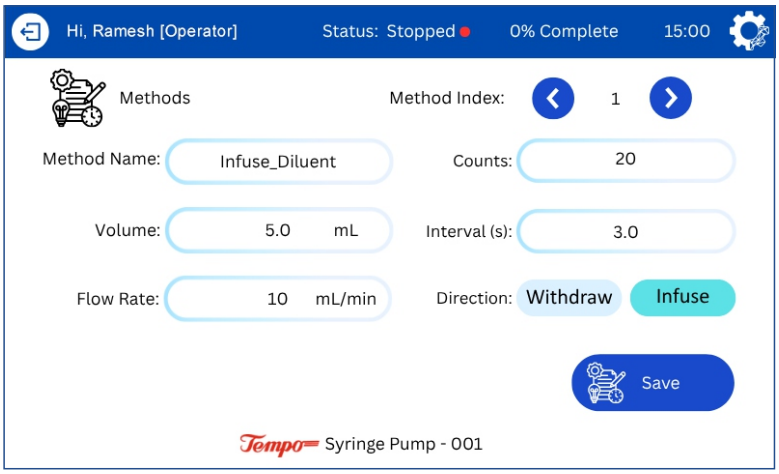


Automatic calibration

Syringe Library

METHODS

Define reusable operating profiles — volume, flow rate, counts and interval — and recall them instantly for repeatable processes.

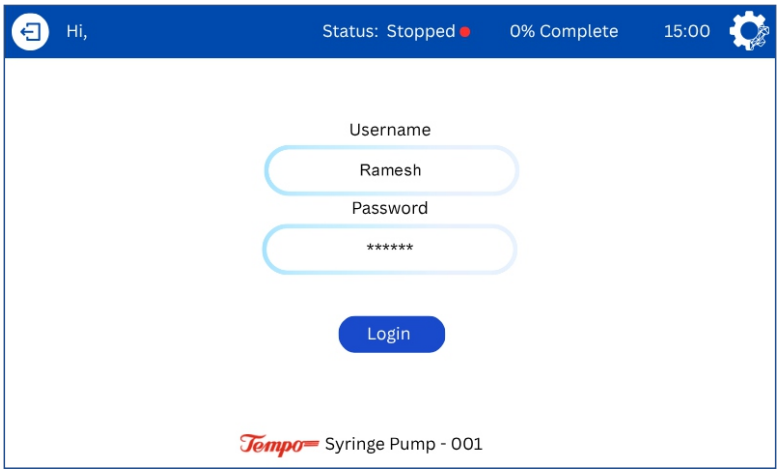


Data storage for quick operation

Security

LOGIN

Access is controlled by username and password so only authorised users can operate the pump.
Controlled access for multiple users.

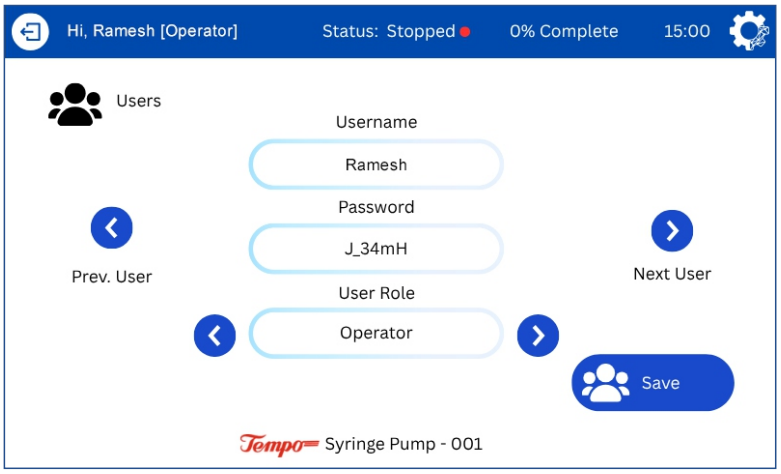


Log in / Log out facility

Access Levels

USER MANAGEMENT

Create users and assign a role to each, keeping control over who can change settings and who can only operate.

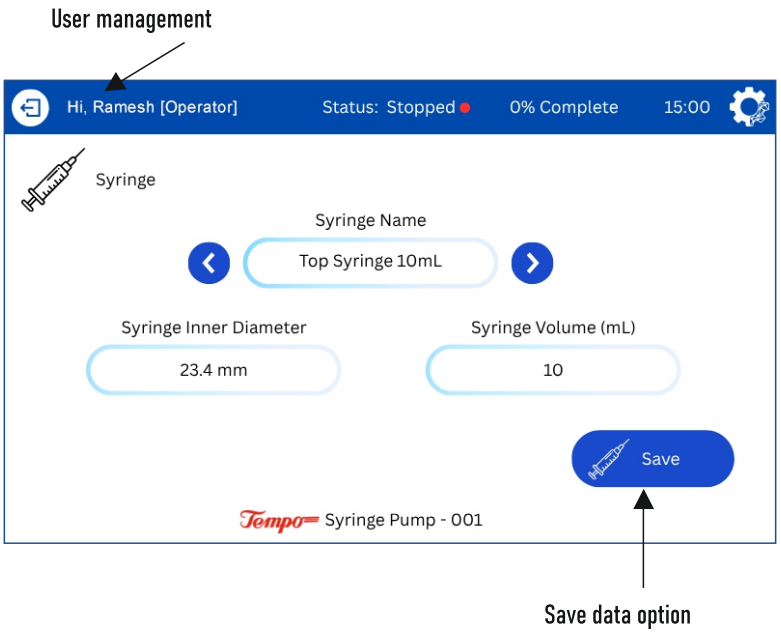


User level selection

Accuracy

PUMP CALIBRATION

Calibrate in the field for customised accuracy: dispense a set volume, enter the volume actually delivered, and save.
Select the syringe to calibrate.
Simple in-field user calibration.



SYRI FLOW

SYRINGE PUMP

by Tempo Instruments Pvt. Ltd.

TEMPO INSTRUMENTS PVT. LTD.

ISO 9001:2015 ISO 13485:2012

Authorised Dealer

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