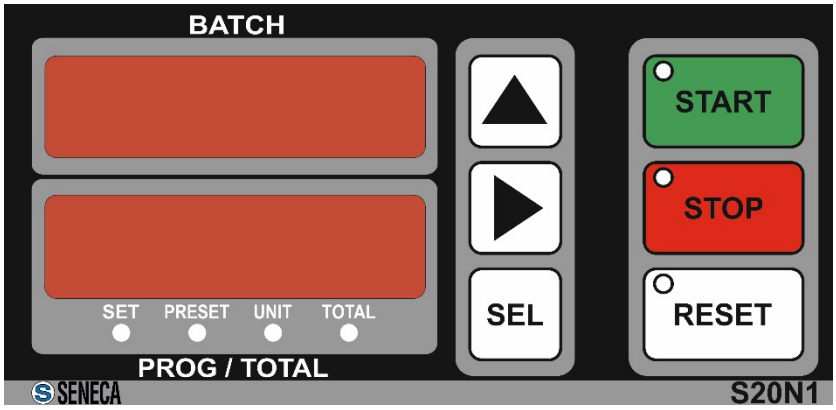
INSTALLATION MANUAL

Manual language	ENGLISH
Line	S
Product	**S20N1**
Description	MICROPROCESSOR BATCH CONTROLLER

Contents:

1. PRELIMINARY WARNINGS
2. PRELIMINARY INSTRUCTIONS FOR USE
3. GENERAL CHARACTERISTICS
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9. CONFIGURATIONS
10. MODBUS REGISTERS
11. PURCHASE ORDER CODE
12. FRONTAL PANEL / MODULE LAYOUT
13. DECOMMISSIONING AND DISPOSAL
14.



CE

Factory

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All technical data contained in the document may be modified without prior notice.
Content of this documentation is subject to periodical revision.

Configuration and programming tools are available, for free download, from website: www.seneca.it.

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PRELIMINARY WARNINGS

Before performing any operation, it is mandatory to read and understood in full the contents of this installation manual. The module may only be used by qualified and skilled technicians in the field of electric installations. Specific documentation is available at site: www.seneca.it

Only the Manufacturer is authorized to repair the module or to replace damaged parts. The product is susceptible to electrostatic discharge, take appropriate countermeasures during any operation.

No warranty is guaranteed in connection with faults resulting from improper use, from modifications or repairs carried out by Manufacturer-unauthorized personnel on the module, or if the content of this user Manual is not followed.

PRELIMINARY INSTRUCTIONS FOR USE

It is forbidden to install the module near heat sources.

GENERAL CHARACTERISTICS

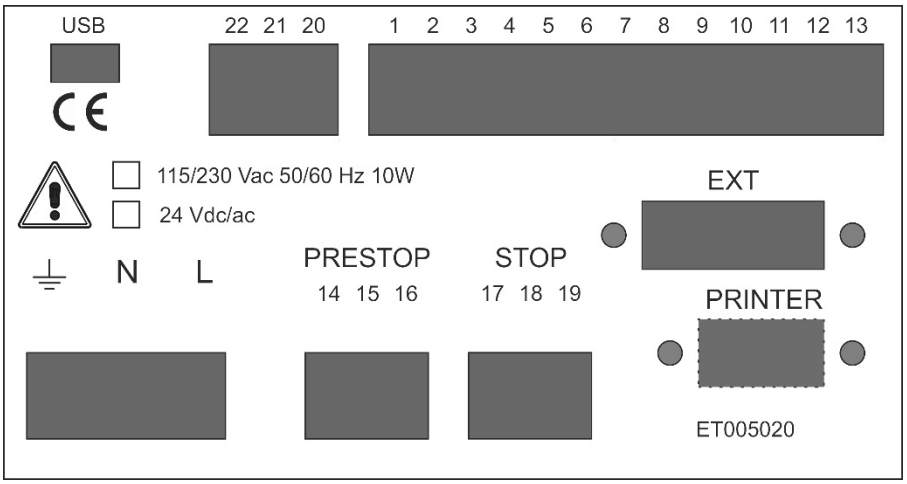
Batch controller.
Dual display with five digits high brightness red LED.
7 LED indicating operating status.
6 keys for device's configuration and batching cycle command.
3 digital inputs, 3 control inputs (start, stop, reset) and
1 pulse signals input (with max frequency 2.2 kHz) configurable as:
free contact, reed contact, NPN open collector BJT, NAMUR sensor, Hall effect sensor or photoelectric sensor.
Digital outputs: 2 relays SPDT (5 A, 250 V, resistive load).
Dimensions L: 144 mm; H: 72 mm; W: 130 mm.
Power supply 115-230 V∿ o 24 V∿/⎓.
RS485 configurable port.
Micro USB port for software upgrade.

POSSIBLE USES:

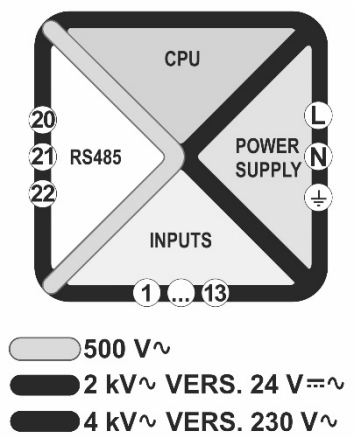
DRUM FILLING STATION IN DANGEROUS ENVIRONMENT
SYSTEM FOR REFILLING OF CO2 IN WINE
SYSTEM FOR WATER REGENERATION FILTERS
CONTROL SYSTEM OF INDUSTRIAL WASTE

REAR PANEL:

The rear panel includes all connections of the batch controller **S20N1** through removable screw terminal connectors.



TECHNICAL SPECIFICATIONS

Isolations *1500 VA*	*Standards* **The module complies with the following standards:**	
	CE	**EN61000-6-4** (electromagnetic emission, industrial environment). **EN61000-6-2** (electromagnetic immunity, industrial environment) **EN61010-1** (safety).

Communication ports	
RS485 screw terminal (22 - 21 - 20).	Maximum baud rate 115k, Modbus RTU Protocol
rear micro USB	USB port for software upgrade.
Power supply S20N1-1-ST	
Voltage	115 – 230 V∿ ± 10% 50 – 60 Hz
Power consumption	Typical: 10VA
Power supply S20N1-23-ST	
Voltage	24 V± 10%
Power consumption	Typical: 10VA
Environmental condition	
Temperature	-0 °C –ON +50 °C
Humidity	30 – 90% at 40°C not condensing
Storage Temperature	-20 °C – +85 °C
Protection degree	IP20
Connections	
Removable 3-way 5mm pitch screw terminals	
Rear micro USB connector	
Dimensions / Box	
Dimensions / Weight	L: 144 mm; H: 72 mm; W: 140 mm / about 730 gr.
Box	PPO self-extinguishing UL94-V0, Black
Hole size for installation	L x H : 135 mm x 67 mm

INSTALLATION RULES

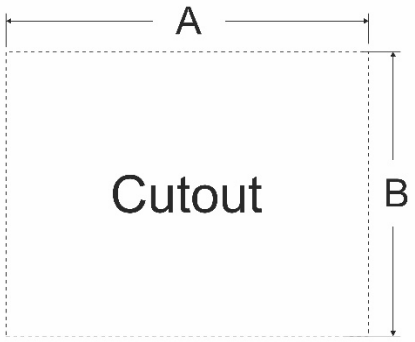
The S20N1 is designed to be installed on a panel with two mounting brackets, supplied.

Display panel installation

Cut a rectangular hole size:
W=135 mm x H=67 mm.
Insert the S20N1 into the hole.
Lock the S20N1 on panel using the two brackets supplied. Please see the picture below:



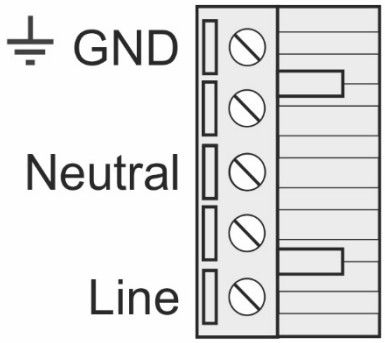
The brackets must be hooked into the slots on the sides of the S20N1 box.



Model	A (mm)	B (mm)
S20N1	135	67

ELECTRICAL CONNECTIONS

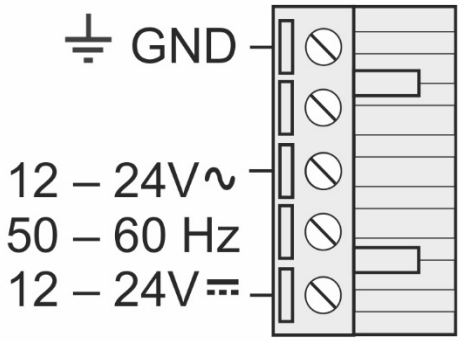
Power supply S20N1-1-ST (155 – 230 VA 50 – 60 Hz)



On S20N1-1-ST version, the switching between: 230 V∿ and 115 V∿ is carried out with an internal voltage selector.
By default the device is factory configured at 230 V∿.
If you want change the power supply voltage please follow this procedure:

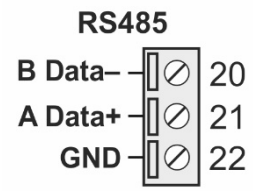
1. Open the device removing the 4 screws on the rear panel.
2. Remove the rear panel.
3. Pull out the power supply board and change the voltage with a screwdriver.
4. Close the device.

Power supply S20N1-23-ST (12 – 24 VC / 12 – 24 VA 50 – 60 Hz)



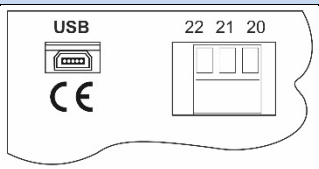
In order to avoid damage of the device, **before you connect power supply**, verify the power supply voltage recommended in the back panel.

MODBUS RS485



One RS485 serial port, for communication with the Modbus Master system, is available from terminals 20 – 21 - 22.
The picture shows the connections.
Note: the indication of RS485 connection polarity is not standard, it may be inverted on some masters.

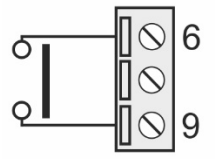
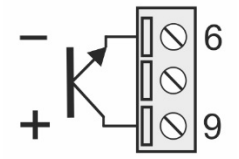
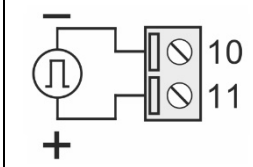
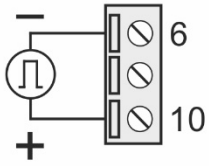
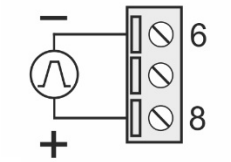
MICRO USB PORT



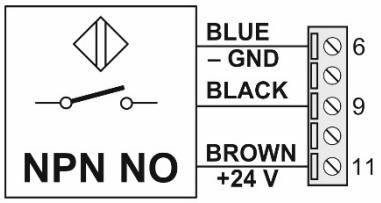
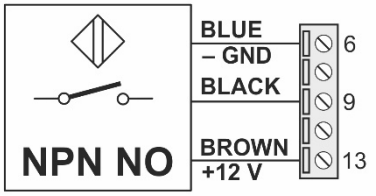
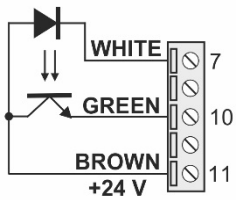
The S20N1 has a micro USB connector for software upgrade.

PULSES INPUT

This pulses opto-coupled input can receive up to 2 kHz pulse signals.
The pictures below show the connections to the most common types of sensors.

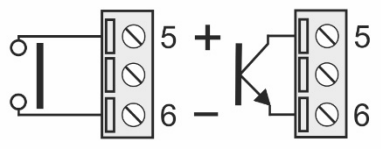
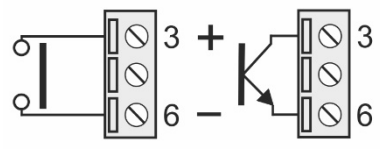
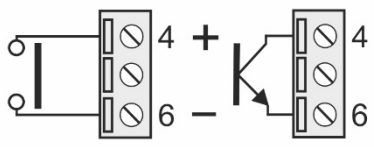
FREE CONTACT	NPN OPEN COLLECTOR	NAMUR (8 V⎓)	24V⎓ PULSES	SLOW PULSES
				

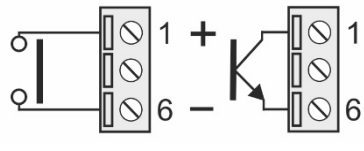
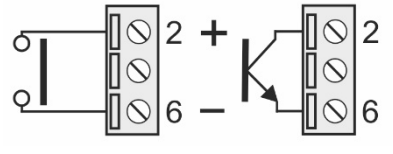
N.B.: The slow pulses input is designed with hysteresis for signals with slow rising and falling edge or for signals with overlapped noise.

24 V⎓ NPN OUTPUT SENSOR	12 V⎓ NPN OUTPUT SENSOR	PHOTOELECTRIC SENSOR
		

PUSH-BUTTON REMOTE CONTROL INPUTS

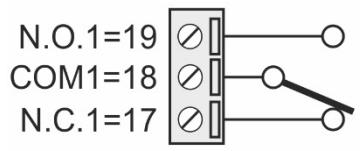
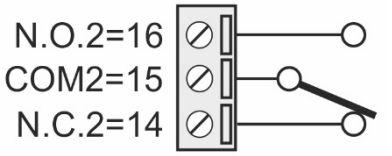
Those opto-coupled inputs allow to start, stop and reset the measurement.
They can be put in a place which is easily accessible for the operator, or placed on dispensing gun.
Those inputs can be connected to buttons, free contacts, opto isolators with NPN out or NPN BJT.

REMOTE START	REMOTE STOP	REMOTE RESET
		

REMOTE AUX1	REMOTE AUX2	REMOTE AUX3
		The remote STOP input can be configured for operate like AUX3. Then, if the S20N1 is in START or PRESTOP state, the RESET input emulate the PAUSA function, Else, if the S20N1 is in STOP state the RESET input remain in his own RESET function.

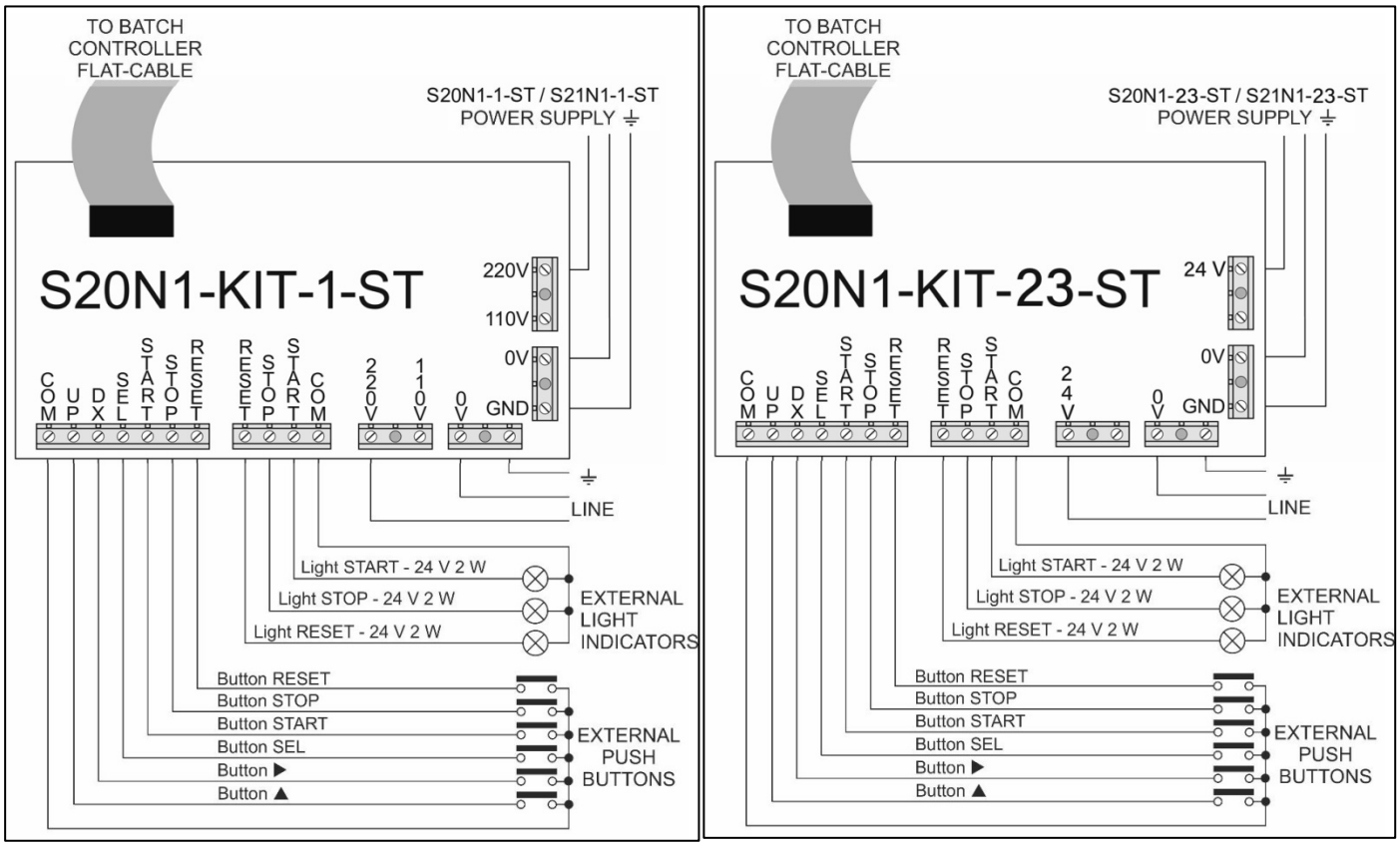
COMMAND OUTPUTS

S20N1 has two free contacts with rated current: 5 A at 250 V∿ (resistive load).
To extend contact's life we suggest using R-C filters for inductive loads in alternate current or diodes for inductive loads in direct current.

STOP	PRESTOP
	

S20N1-KIT (OPTIONAL) CARD CONNECTIONS

To connect external buttons and lights to S20N1 batch controller, please use the appropriate S20N1-KIT decoding board. Pease connect the S20N1-KIT card to the EXT rear socket with the flat cable supplied. With the S20N1-KIT you can connect the 6 buttons (START, STOP, RESET, SEL, RIGHT ARROW and UP ARROW) and the 3 light indicators (START, STOP and RESET) directly on the card terminals.
The 6 buttons shall be N.O. (normally open) and voltage free (free contacts) and the 3 light indicators shall be 24V 2W. The light indicators are powered internally from the card.
Please follow the connections on the schematic below.



OPERATION

KEYBOARD CONTROLS

The S20N1 frontal keyboard allow to control the batching cycle without external connections.

	Key to START the batching cycle	The three functions STOP, RESET and START of the 3 frontal keys are activable also via remote controls and are related respectively to terminals 3, 4 and 5 in rear panel. In order to activate the remote commands is possible to use buttons, free contacts, optocouplers or transistors.
	Key to STOP temporarily the batching cycle (PAUSE).	
	Key for set to zero the batching cycle or to enter in programming menu.	

FRONTAL LED SIGNALLINGS

On the S20N1 controller frontal panel there are two display with 5 digits, 3 LED for the buttons START, STOP and RESET and 4 LED (SET, PRESET, UNIT and TOTAL) under the displays.
The **BATCH** display shows the evolution of the count during the dosage.
The **PROG / TOTAL** display shows the configured value of SET.
The dosage can be performed in two phases, an initial fast phase and a final slow phase (to improve the precision of the dosage) using, for example, a valve with closure in two times controlled by the contacts of two relays called STOP and PRESTOP.
You can also set the automatic recovery of the dosage queues in order to compensate the inertia of the valve closure at the end of dosage.
The following table shows the LEDs and relays outputs related with the batch controller states:

STATE S20N1	*PRESTOP OUTPUT*	*STOP OUTPUT*	*START LED*	*STOP LED*	*RESET LED*
RESET	OFF	OFF	OFF	OFF	ON
STOP	OFF	OFF	OFF	ON	OFF
PAUSE	OFF	OFF	BLINKING	BLINKING	OFF
PRESTOP	OFF	ON	ON	BLINKING	OFF
START	ON	ON	ON	OFF	OFF

OPERATING STATES	
RESET	Waiting state from where you can start a new batching cycle (pushing the START button) or to access to parameters configuration mode (pushing the SEL button). The relays for PRESTOP and STOP are de-energized when the device is in RESET state. The S20N1 batch controller goes from STOP to RESET or from PAUSE to RESET by pushing the RESET button.
STOP	State that is reached at the end of the batching cycle. The relays for PRESTOP and STOP are de-energized when the device is in STOP state. When S20N1 is in STOP state you can manually adjust the dosage (if parameter bAtCF = 0) by pushing the START button. The relays for PRESTOP and STOP are then energized and they remain activated until you release the START button.
START	Fast dosage state that begin when you push the START button. The relays for PRESTOP and STOP are energized when the device is in START state. When the batching cycle counter reaches the Value = (SET – PRESET) the device goes automatically in PRESTOP state.
PRESTOP	Slow dosage state that begins when the device reaches the Value = (SET – PRESET). The PRESTOP relay is de-energized and the STOP relay is energized when the device is in PRESTOP state. This mode is available only if PRESET value ≠ 0.
PAUSA	State where the dosage is temporarily stopped. The relays for PRESTOP and STOP are de-energized when the device is in PAUSE state. The S20N1 batch controller goes from START to PAUSE or from PRESTOP to PAUSE, by pushing the STOP button. The S20N1 batch controller goes from PAUSE to START or to PRESTOP, in order to continue the batching cycle, by pushing the START button. The S20N1 batch controller goes from PAUSE to RESET, in order to reset the parameters and to begin a new batching cycle, by pushing the RESET button.

CONFIGURATIONS

All parameters are stored on FeRAM non-volatile memory and then they are retained even in the absence of power. **Note: You can access to the configuration menu only from RESET state.**

CONFIGURATION MENU

When the device is in RESET state the PROG / TOTAL display shows the SET value.
Pushing the SEL button the reset LED will be turned off and the PROG / TOTAL display shows all the parameters cyclically by pushing the SEL button.
Some parameters are protected by a numerical code (CodE).
To change these parameters, CodE must be set to the secret value 5477.
if CodE is set to a value other than 5477, you can access only to the reduced menu:

REDUCED MENU CODE ≠ 5477

PARAMETER		LED SIGNALLING					
Name	**on Display**	**Set**	**Preset**	**Unit**	**Total**	**Visible**	**Editable**
SET	SEt	ON	OFF	OFF	OFF	YES	YES
PRESET	PrE	OFF	ON	OFF	OFF	YES	YES
UNIT	Uni	OFF	OFF	ON	OFF	YES	NO
CUMULATIVE TOTAL	t=	OFF	OFF	OFF	ON	YES	NO
PROTECTION CODE	CodE	ON	ON	ON	ON	YES	YES

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FULL MENU CODE = 5477							
PARAMETER		LED SIGNALLING					
Name	**on Display**	**Set**	**Preset**	**Unit**	**Total**	**Visible**	**Editable**
SET	SEt	ON	OFF	OFF	OFF	YES	YES
PRESET	PrE	OFF	ON	OFF	OFF	YES	YES
UNIT	Uni	OFF	OFF	ON	OFF	YES	YES
CUMULATIVE TOTAL	t=	OFF	OFF	OFF	ON	YES	Only by MODBUS
RESET OF CUMULATIVE TOTAL	t-rES	OFF	OFF	OFF	ON	YES	YES
PROTECTION CODE	CodE	ON	ON	ON	ON	YES	YES
QUEUES RECOVERY	rEcuP	ON	ON	ON	ON	YES	YES
COUNTING MODE	Cont	ON	ON	ON	ON	YES	YES
BATCH	bAtCF	ON	ON	ON	ON	YES	YES
DECIMAL POINT	Punto	ON	ON	ON	ON	YES	YES
ADDRESS	Addr	ON	ON	ON	ON	YES	YES
BAUD RATE	bAUd	ON	ON	ON	ON	YES	YES
PARITY	PAr it	ON	ON	ON	ON	YES	YES

PARAMETERS CONFIGURATION	
From RESET state you can change the first parameter:	
SET	**SET** (SEt) is the value of the end of batching cycle. This parameter value range can be among 0000 1 and 99999. In order to change the SEt value please push the ▶ button, the first digit in the lower display starts blinking and you can edit it. The digits can be changed one by one. Please push the ▶ button until the desired digit begins to blink this means that it is selected then you can change the digit value pushing the ▲ button. In order to save the new value push the ▶ button until the display shows the message -SEL-, then pushing the SEL button you stores this value and pushing it again you can go to the next parameter. **Note:** When **SET** value is equal to zero, you can't exit from the configuration of the **SET** parameter.

PARAMETERS CONFIGURATION	
PRESET	**PRESET** (PrE) is the value at which the second state, of a batching cycle in two times, begins. This configuration is used when you need to control a valve with the closure in two stages. The first phase of batching cycle is fast and the valve is fully open, the second phase is slow and the valve is partially open in order to improve the dosage precision. The **PRESET** parameter is a value subtracted from the **SET** value and then it must be among 00000 and the **SET** value. In order to change the PrE value please push the ▶ button, the first digit in the lower display starts blinking and you can edit it. The digits can be changed one by one. Please push the ▶ button until the desired digit begins to blink this means that is selected then you can change the digit value pushing the ▲ button. In order to save the new value push the ▶ button until the display shows the message -SEL-, then pushing the SEL button you stores this value and pushing it again you can go to the next parameter.
UNIT	**UNIT** (Un i) is the multiplicative factor by which the input pulses are weighed in order to set the display **SET** and **PRESET** values directly in engineering units. This parameter value shall be among 0.0001 and 9.9999. This parameter is always displayed, but it can be changed only if the protection code is set to the secret value 5477. In order to change the Un i value please push the ▶ button, the first digit in the lower display starts blinking and you can edit it. The digits can be changed one by one. Please push the ▶ button until the desired digit begins to blink this means that is selected then you can change the digit value pushing the ▲ button. In order to save the new value push the ▶ button until the display shows the message -SEL-, then pushing the SEL button you stores this value and pushing it again you can go to the next parameter. **Note:** When **UNIT** value is equal to zero, you can't exit from the configuration of the **UNIT** parameter.
CUMULATIVE TOTAL	**TOTAL** (t=) is the value of the cumulative total for all batching cycle performed by the batch controller, it is possible to modify this value only through MODBUS and is possible to reset this value with the next parameter. **TOTAL** value is expressed by 8 digits, therefore, the lower display will be read following the upper display. Pushing the **SEL** button you can go to the next parameter.
TOTAL RESET	**TOTAL RESET** (t-rES) value = YES resets the **cumulative TOTAL** to zero. This function can be performed only if the protection code is set to the value 5477. Normally the value of this function is no and if you set the value to YES you reset the totalizer. Pushing the ▶ button, the text no in the lower display start blinking and you can edit it by pushing the ▲ button and selecting YES. Pushing the ▶ button the display shows the message -SEL-, then pushing the **SEL** button you perform the totalizer reset and pushing again the **SEL** button you can go to the next parameter.

PARAMETERS CONFIGURATION	
PROTECTION CODE	**CODE** (CodE) is the key to lock the parameters. This avoid not authorized people to modify the parameters: **UNIT, TOTAL RESET, RECOVERY QUEUES, COUNTING MODE and DECIMAL POINT.** **CODE** is factory configured to 5477 default value this means that the device is unlocked and all the parameters are visible and editable. After configurating the parameters, in order to lock the device, you can change the CodE with a value different from 5477. In order to change the CodE value please push the ▶ button, the first digit in the lower display starts blinking and you can edit it. The digits can be changed one by one. Please push the ▶ button until the desired digit begins to blink this means that is selected then you can change the digit value pushing the ▲ button. In order to save the new value push the ▶ button until the display shows the message -SEL-, then pushing the SEL button you stores this value and pushing it again you can go to the next parameter.
RECOVERY QUEUES	**RECOVERY QUEUES** (rEcuP) allows you to enable or disable the recovery queues feature. This function can be enabled or disabled only if the protection code is set to the value 5477. This configuration is used when the time needed to close the valve generates errors on the end value of the batching cycle. When the batch controller reaches the end value of batching cycle and the two relays of PRESTOP and STOP are de-energized, it is possible that the flow dosage continues because of the valve closing time or because of the inertia of the pump. The excess value is called batching cycle queue and represents the inaccuracy of the dosage. If the system has a repeatable behavior then the queue will always have the same value and can be compensated by activating the parameter **RECOVERY QUEUES.** The batch controller stores the excess value found in previous batching cycle and sets this value as the start of the next batching cycle, in order to compensate the dosage automatically. To reset the value of the queue, you must push the **RESET** button twice. The next batching cycle will then start from zero. The parameter rEcuP can have the value YES to enable the recovery queue or the value No to disable the recovery queue. In order to change the rEcuP value please push the ▶ button, the four LED below the lower display begin blinking and you can edit this value. You can change the parameter value pushing the ▲ button. In order to save the new value push the ▶ button until the display shows the message -SEL-, then pushing the SEL button you store this value and pushing it again you can go to the next parameter.
COUNTING MODE	**COUNTING MODE** (Cont) allows you to set the count up or down. This function can be changed only if the protection code is set to the value 5477. This parameter value shall be among: Incr means up counter, without leading zeros, IncrO means up counter, dEcr means down counter, without leading zeros, dEcrO means down counter. In order to change the Cont value please push the ▶ button, the four LED below the lower display begin blinking and you can edit this value. You can change the parameter value pushing the ▲ button. In order to save the new value push the ▶ button and the display shows the message -SEL-, then pushing the SEL button you stores this value and pushing it again you can go to the next parameter.

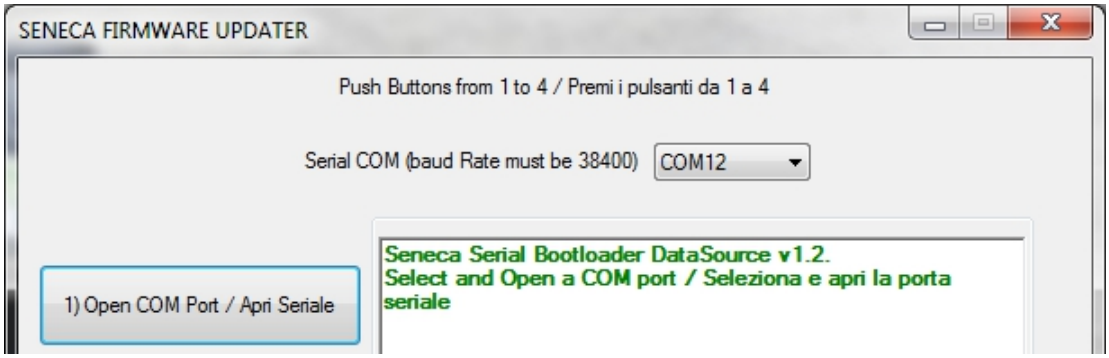
PARAMETERS CONFIGURATION	
BATCF	**BATCF** (bAtCF) allows you to configure the operation of the remote START input. This function can be changed only if the protection code is set to the value 5477. 0 means that when START contact is closed, then the batch controller goes START state without resetting the counter. 1 means that when START contact is closed, then the batch controller goes START state resetting the counter. In order to change the bAtCF value please push the ▶ button, the four LED below the lower display begin blinking and you can edit this value. You can change the parameter value pushing the ▲ button. In order to save the new value push the ▶ button and the display shows the message -SEL-, then pushing the SEL button you stores this value and pushing it again you can go to the next parameter.
POINT	**POINT** (Punto) allows you to set the number of decimal places for displaying values of the SET, PRESET, TOTAL and BATCH values. This parameter value shall be among 0 and 4 and can be changed only if the protection code is set to the secret value 5477. In order to change the Punto value please push the ▶ button, the four LED below the lower display begin blinking and you can edit this value. You can change the parameter value pushing the ▲ button. In order to save the new value push the ▶ button and the display shows the message -SEL-, then pushing the SEL button you stores this value and pushing it again you can go to the next parameter.
ADDRESS	**ADDRESS** (Addr) is the address number of the device for RS485 serial interface. This parameter value shall be from 001 to 250 and can be changed only if the protection code is set to the secret value 5477. In order to change the Addr value please push the ▶ button, the four LED below the lower display and the first digit in the lower display start blinking and you can edit it. The digits can be changed one by one. Please push the ▶ button until the desired digit begins to blink this means that is selected then you can change the digit value pushing the ▲ button. In order to save the new value push the ▶ button until the display shows the message -SEL-, then pushing the SEL button you stores this value and pushing it again you can go to the next parameter.
BAUD RATE	**BAUD RATE** (bAUd) allows you to configure the RS485 communication baud rate. This parameter value shall be among 1k2, 2k4, 4k8, 9k6, 19k2, 38k4, 57k6 and 115k2 values. This parameter can be changed only if the protection code is set to the secret value 5477. In order to change the bAUd value please push the ▶ button, the four LED below the lower display begin blinking and you can edit this value. Please push the ▲ button until you find the desired baud rate. In order to save this baud rate push the ▶ button and the display shows the message -SEL-, then pushing the SEL button you stores this value and pushing it again you can go to the next parameter.
PARITY	**PARITY** (PAr it) allows you to configure the RS485 parity error control. This parameter value shall be among: none (n), even (E) and odd (O). In order to change the PAr it value please push the ▶ button, the four LED below the lower display begin blinking and you can edit this value. Please push the ▲ button until you find the desired parity value. In order to save this value push the ▶ button and the display shows the message -SEL-, then pushing the SEL button you stores this value and pushing it again you can go to the next parameter

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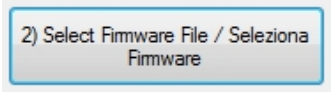
SOFTWARE UPGRADE

Please download the upgrade software from: www.seneca.it website in S20N1 section.
Please connect S20N1 to personal computer with a microUSB/USB cable and follow this procedure:

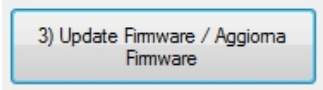
1. Turn off the power of S20N1.
2. Disconnect the control outputs of S20N1.
3. Power up the S20N1, the display show the software version currently loaded (47 00 / -----), simultaneously pressing both SEL and RESET buttons the display show (boot / LoAd) this means upgrade state, the reset LED start blinking, after few seconds the display turn off and only the reset LED remain ON.
4. Please execute the Serial Bootloader software.



In the window SENECA FIRMWARE UPDATER press the first button to open the COM port.
You should read the message: Port opened: COMxx.



5. Please push the second button "Select Firmware File" and select the new released software for example: s20n1 R4800 150325 bootable.hex
   After the update you should read the message:
   Firmware File was loaded successfully! / File Firmware caricato con successo!
   FW CODE = 107 / FW BUILD = 65535 / START = 0400 / END = FBFF.



6. Please push the third button “Update Firmware” in order to start the firmware update.
   At the end of the update the start LED turn ON and you should read the message:
   Writing flash Signature ... / Signature OK
   OK, Elapsed 17.8957279s.
7. Please push the fourth button “Restart S2xN1” to reset the S20N1 and you should read the message: Reset MCU... / OK.
8. Restore the connections of S20N1 control outputs.

MODBUS REGISTERS

MODBUS RTU PROTOCOL

All registers are “Holding registers” (Read Modbus) and the first address register is 40001.
The following functions are available:
Read Single Modbus Register / Write Single Modbus Register / Write Multiple Modbus Registers.
The RS485 port for access to MODBUS registers is available at terminals 20, 21 and 22.
The S20N1 configured parameters are matched to the MODBUS registers like in the following table:

Register Offset	*Register number*	*Name*	*Description*
0	40001	DEV. ID. & EXT. REV.	Product ID (6B01 hex).
1	40002	Rev. FW	FirmWare revision number.
2-3	40003-40004	SET	Integer value of SET parameter, as shown on the display, without decimal point. From 0 to 99999 dec. With MSW on 40003. Example: with SET = 33.444 Modbus Register value = 33444
4-5	40005-40006	PRESET	Integer value of parameter PRESET as shown on the display, without decimal point. From 0 to 99999 dec. Whit MSW on 40005. Example: with PRESET = 65.537 Modbus Register value = 65537
6	40007	Not used	Not used
7-8	40008-40009	UNIT	Counter multiplier parameter divided for 10000. With MSW on 40008. Example with UNIT = 0.0001 Modbus Register value = 1.
9	40010	Not used	Not used
10-11	40011-40012	TOTAL	Totalizer value editable only through MODBUS. With MSW on 40011. Display format is decimal.
12	40013	Not used	Not used
13	40014	CODE	Password 5477 dec.
14	40015	Not used	Not used
15	40016	RECUP	0=no; 1=yes
16	40017	Not used	Not used
17	40018	COUNTER MODE	0=incr; 1=incr0; 2=decr; 3=decr0
18	40019	Not used	Not used
19	40020	BATCHCFG	0=disable/1=enable autostart (reset + start) When you push the START button
20	40021	Not used	Not used

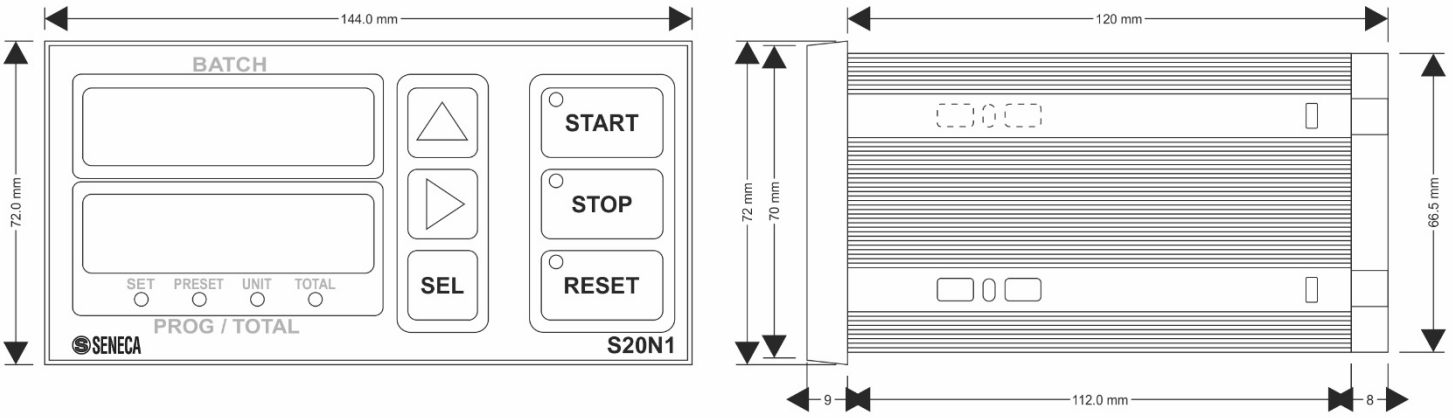
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Register Offset	Register number	Name	Description
21	40022	POINT	Decimal point position for both the displays (from 0 to 4)
22-23	40023-40024	BATCH	Batching cycle counter value, without decimal point and multiplied by 10000. With MSW on 40008. Example: with Batch = 0001 register value= 1.
24	40025	Not used	Not used
25	40026	RS485	ADDR/SPEED configuration MSB = address LSB = speed Example: 4D05 -> 4Dhex = 77 device address -> 05hex = 38k4 speed
26	40027	Not used	Not used
27	40028	RS485	Address number Device Id. dec.
28	40029	Not used	Not used
29	40030	RS485-BAUD	SPEED 0=1k2 / 1=2k4 / 2=4k8 / 3=9k6 / 4=19k2 / / 5=38k4 / 6=57k6 / 7=115k2
30	40031	Not used	Not used
31	40032	RS485-PARITY	PARITY n=0 / E=1 / O = 2
164-165	40165-40166	RTCPAR_COMMAND	Real time remote command register
		Bit [15] CPU Reset	Device Reset
		Bit [14] Keyboard Lock	If =1 then the Keyboard is Locked
		Bit [13…6]	No function
		Bit [5] AUX2	Emulates the AUX2 input behavior State=0 AUX2=0 / State=1 AUX2=1
		Bit [4] AUX1	Emulates the AUX1 input behavior State=0 AUX1=0 / State=1 AUX1=1
		Bit [3] RESET	Emulates the RESET input behavior State=0 RESET =0 / State=1 RESET =1
		Bit [2] STOP	Emulates the STOP input behavior State=0 STOP =0 / State=1 STOP =1
		Bit [1] START	Emulates the START input behavior State=0 START =0 / State=1 START =1
		Bit [0] not used	No function

PURCHASE ORDER CODE

CODE	*DESCRIPTION*
S20N1-KIT-1-ST	KIT REMOTE CONTROL FOR S20N / S21 – SUPPLY 115/230 V∿

FRONTAL PANEL / MODULE LAYOUT



DECOMMISSIONING AND DISPOSAL



Disposal of Electrical & Electronic Equipment (Applicable throughout the European Union and other European countries with separate collections programs). This symbol, found on your product or on its packaging, indicates that this product should not be treated as household waste when you wish to dispose of it. Instead, it should be handed over to an applicable collection point for the recycling of electrical & electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences to the environment and human health, which could otherwise be caused by inappropriate disposal of this product. The recycling of materials will help to conserve natural resources. For more detailed information about the recycling of the product, please contact your local city office, waste disposal service of the retail store where you purchased this product.

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