

SAFETY
INSTALLATION
OPERATION
MAINTENANCE



M A N U A L

Sample Collection System Model SCS

No. PC 522844C
Revised 2013-07-10

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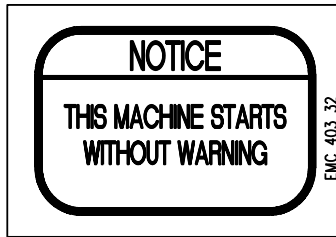
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I. GENERAL SAFETY INFORMATION

SAFETY FIRST! The symbols shown identify examples of the safety labels and signs to be found on InterSystems equipment. They are affixed to the equipment to warn of danger to persons and of possible equipment damage. These signs must never be removed, tampered with, painted over or obscured in any way. (See Page 4 for label locations.) If labels are damaged or become unreadable, replacement labels are available from InterSystems. The user must institute a continuing program to instruct all personnel in safe operating and maintenance procedures, and to insure that all safety devices, guards, and covers are intact and operable, and that all safety signs are legible.



STARTS W/OUT WARNING
EMC40332

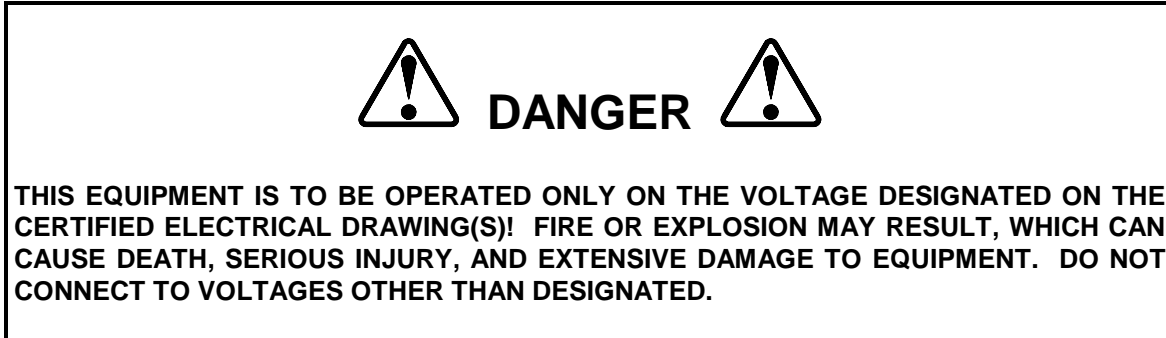


MOVING PART
EMC3032

Consult InterSystems, Inc. before making any changes to the sampler or its operating environment. Careless changes could result in death or serious injury to people, and reduce the performance and service life of the equipment.

Never perform any service on this equipment or any other powered equipment until all power has been shut off and locked out so that it cannot be restored without the consent and knowledge of the person who interrupted power. Power includes electrical, fluid, mechanical, or pneumatic energy.

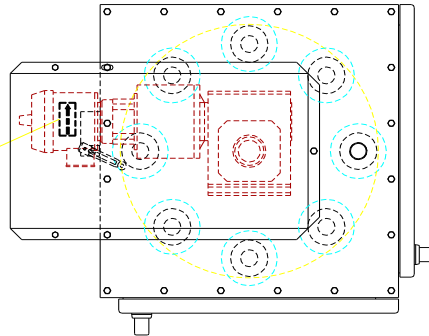
Never perform any service on this equipment without utilizing the required PPE (personal protective equipment). Refer to the MSDS(s), material safety data sheet(s), on all the products to which this equipment is in contact with to determine what PPE is required.



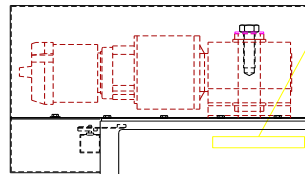
NOTE: THESE SIGNS MUST NEVER BE REMOVED, TAMPERED WITH, PAINTED OVER, OR OBSCURED IN ANY WAY. IF LABELS ARE DAMAGED OR BECOME UNREADABLE, REPLACEMENT LABELS ARE AVAILABLE FROM INTERSYSTEMS.



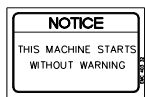
ROTATION
IS573X1



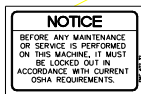
IS SAMPLERS
IS516X1



I.S. SERIAL NO.
TAG



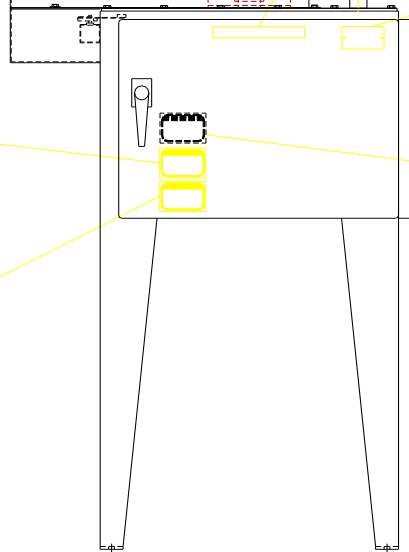
STARTS W/OUT WARNING
EMC40332
BOTH DOORS



LOCK OUT MACHINE
EMC40232
BOTH DOORS



ROTATING PARTS
EMC2532
INSIDE & OUTSIDE BOTH DOORS



DATE: 1/28/98

FIGURE 1-1, SCS SAMPLE CABINET SAFETY LABEL LOCATIONS

II. GENERAL INFORMATION

2.1 System Description

The SCS sample collection system is designed to retain and hold a series of samples through-out a given period of time. The cabinet automatically loads one or more samples into a jar, bag or bucket. Figure 2-1 illustrates a typical SCS sample collection system.

The SCS is typically positioned below an automatic sampler so that the samples flow via gravity into the inlet and into the sample container. After one or more samples is taken, the control will temporarily halt sampling and will signal the SCS to index to the next container position. This sequence will be repeated until the control reaches the preset "Number Of Sample Containers".

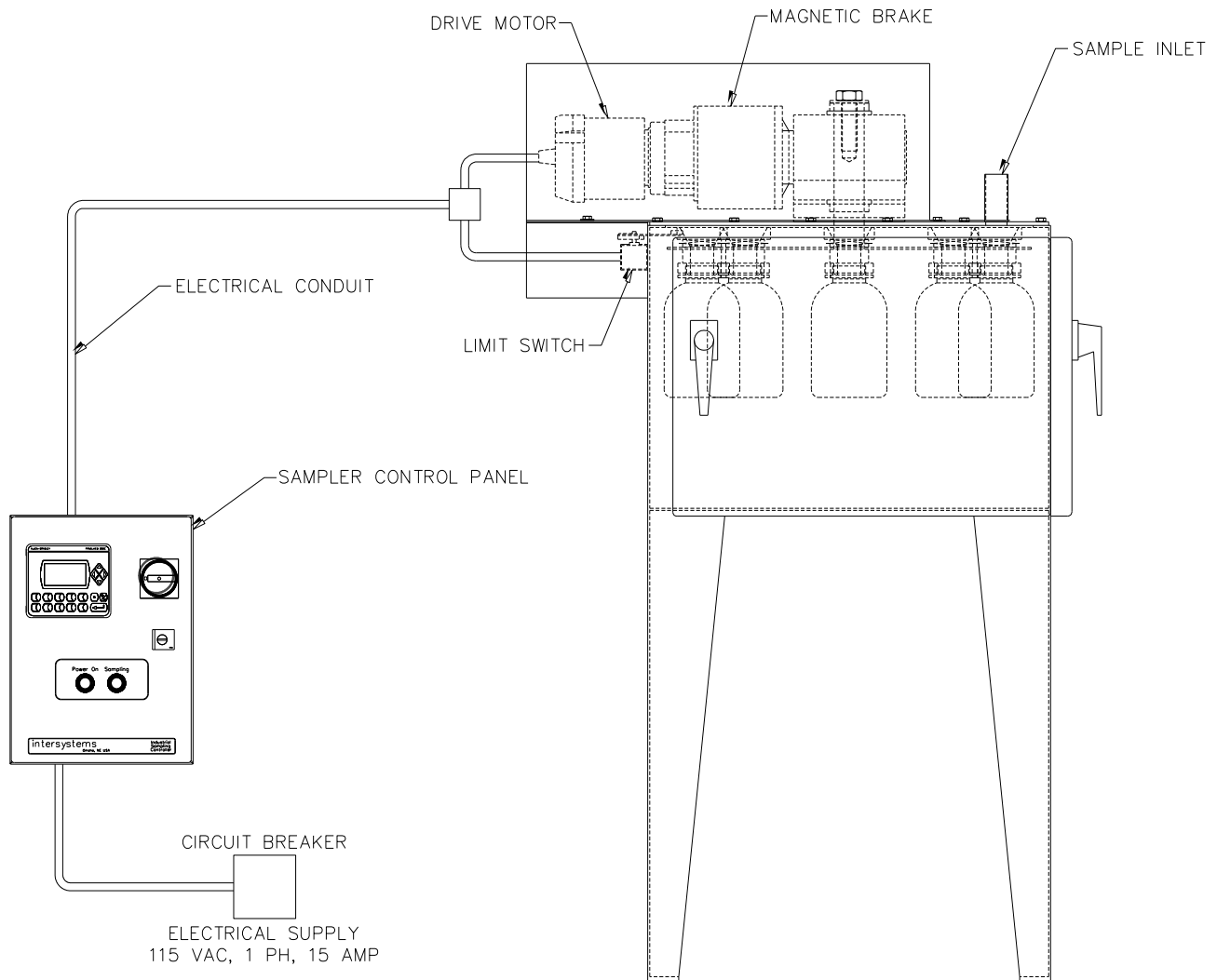


FIGURE 2-1, TYPICAL INSTALLATION, MODEL SCS SAMPLE COLLECTION SYSTEM

2.2 Optional Features

The certified drawings indicate which, if any, optional features are included with a sampling system. Some of the more frequently specified optional features are briefly described in the following list.

- A. Explosion-Proof System. There are several major differences in an explosion-proof cabinet as compared to a standard sample collection system. An explosion proof cabinet will typically have the following features.
 - 1. An explosion-proof limit switch with the rating of:
 - Class 1, Groups C & D, Division 1 & 2
 - Class 2, Groups E, F & G, Division 1 & 2
 - 2. An explosion-proof motor with the rating of:
 - Class 1, Groups D, Division 1 & 2
 - Class 2, Groups E, F & G, Division 1 & 2

The explosion proof sample collection system control is available in two enclosure classifications.

- 1. The NEMA 9 control with the rating of:
 - Class 2, Groups E, F & G, Division 1 & 2
 - 2. The NEMA 7 control with the rating of:
 - Class 1, Groups C & D, Division 1 & 2
 - Class 2, Groups E, F & G, Division 1 & 2
- B. Components of special materials, such as 316 stainless steel, monel, inconel or nedox coatings.
 - C. Programmable Controls to sequence the sampler and the sample collection equipment.

2.3 Material Collected

Most materials from light to heavy density granules, flakes and pellets.

2.4 Cabinet Construction

Standard cabinet housing construction is of painted carbon steel or 304 stainless steel. The sample loaders are of nylon. Other materials and/or finishes appropriate to the operating environment and the material or product being sampled may be used. Refer to the certified drawing(s) for any optional or special components installed on the sampler.

III. GENERAL INSTALLATION REQUIREMENTS

3.1 Receiving Inspection

Carefully inspect the sampling system for damage as soon as it is received. Also, verify that the quantity of parts or packages actually received corresponds to the quantity shown on the packing slip. Report any damage or shortage to the delivering carrier as soon as possible. InterSystems' responsibility for the equipment ended with acceptance by the delivering carrier. Refer to the bill of lading.

3.2 Pre-Installation Preparation



Note: Before starting sampling system installation, study this manual, the certified drawing(s) furnished with the system, and other applicable documents (including, but not limited to OSHA Regulations; the National Electrical Code; and all other applicable federal, state, and local codes and regulations).

3.3 Location

The SCS sample cabinet is typically mounted to the floor below the sampler as in Figure 2-1. The sample cabinet needs to be installed so that the top of the cabinet is level. Additionally, the sample cabinet and associated equipment should be located for ease of access and maintenance.

The SCS sample cabinet is to be installed only as shown on the certified drawing(s). If an alternate mounting arrangement is desired contact InterSystems prior to installation for proper guidance. The sample cabinet is of a general design with modifications specifically for your application. It may be necessary to rework the sample cabinet in order for it to function properly if you alter the application.

3.4 General Mounting Guidelines

**DANGER**
THE SCS INDEX CABINET CANNOT SUPPORT ANY OTHER EQUIPMENT THAT IS NOT SHOWN ON THE CERTIFIED DRAWINGS! COLLAPSE OF THE WHOLE SYSTEM CAN CAUSE DEATH, SERIOUS INJURY, AND EXTENSIVE DAMAGE TO EQUIPMENT. PROPERLY SUPPORT ALL SPOUTS, AND CONVEYING LINES.

- A. Locate and position the SCS index cabinet in the desired location.
- B. Anchor the cabinet to the floor using the holes provided in the support legs.

3.5 Material Sample Transport Lines

The tubing used to transport material samples must be compatible with the operating environment and the material sampled. Typically a 1.50" ID flexible hose is slipped over the inlet tube of the SCS cabinet and held in place by a worm clamp. The hose is then routed to allow material to flow via gravity from the discharge of the sampler.

Make all connections airtight and make sure all interior surfaces of joints are smooth and flush. Any ragged or raised tube ends will collect dust and debris as well as retard material flow. Air leaks can interfere with the pressure or vacuum conveying and sampling system. Escaping sample material can contaminate surrounding atmosphere and equipment.

3.6 Controller Location

- A. Use vibration isolation pads when mounting the control enclosure or mount the controller in a vibration-free location.
- B. Unless ordered for severe duty, locate controller so it is protected from water and dust.
- C. Unless an explosion-proof rated controller was specifically ordered, DO NOT locate the controller in a hazardous area.
- D. Most applications require that the sampler be in easy view of the controller.

3.7 System Wiring

Refer to the certified electrical drawing(s) for specific wiring requirements. As explained in Paragraph 4.1.6, the 19-position barrier terminal strip inside the plc controller enclosure is the connection point for ALL external circuitry.

The controller was completely assembled and tested with the sampler before it left the factory. The electrical installation must comply with OSHA Regulations; the National Electrical Code; and all other applicable federal, state, and local codes and regulations.

If wiring between the controller and the sampler unit is run through rigid conduit, use a short length of flexible conduit to connect wiring to the sampler. This will isolate the rigid conduit from any vibration originating in the product conveying line and sampler.

3.7.1 Electrical Power Requirements, System

110/120 VAC 50/60 Hz, Single Phase, 10 Amp Service.
Optional - 220/240 VAC 50/60 Hz, Single Phase, 5 Amp Service.

Refer to the certified electrical drawing(s) for specific wiring requirements. InterSystems strongly recommends that electrical service to the sampling system be an isolated line. Voltage fluctuations and line noise can affect the controller's circuit board, thus causing the sampler to malfunction.

3.7.1.1 Controller

110/120 VAC, 50/60 Hz, Single Phase, 6 Amp Max. (includes motor power requirements).
Optional - 220/240 VAC, 50/60 Hz, Single Phase, 3 Amp Max. (includes motor power requirements).

3.7.1.2 Drive Motor

Standard 110/120 VAC, 220/240 VAC, 50/60 Hz, Single Phase, 2.3/1.2 Full Load Amps.

Refer to the certified drawing(s) of the SCS sample cabinet to verify motor size, horsepower, voltage, and current rating.

IV. OPERATIONS AND ADJUSTMENTS

**DANGER**

FAILURE TO OBSERVE ALL SAFETY RULES, WRITTEN AND IMPLIED, AND THOSE SUGGESTED BY COMMON SENSE, CAN RESULT IN DEATH, SERIOUS INJURY, AND /OR EQUIPMENT DAMAGE. LOCKOUT POWER BEFORE PERFORMING ANY MAINTENANCE.

4.1 Control Components And Their Functions

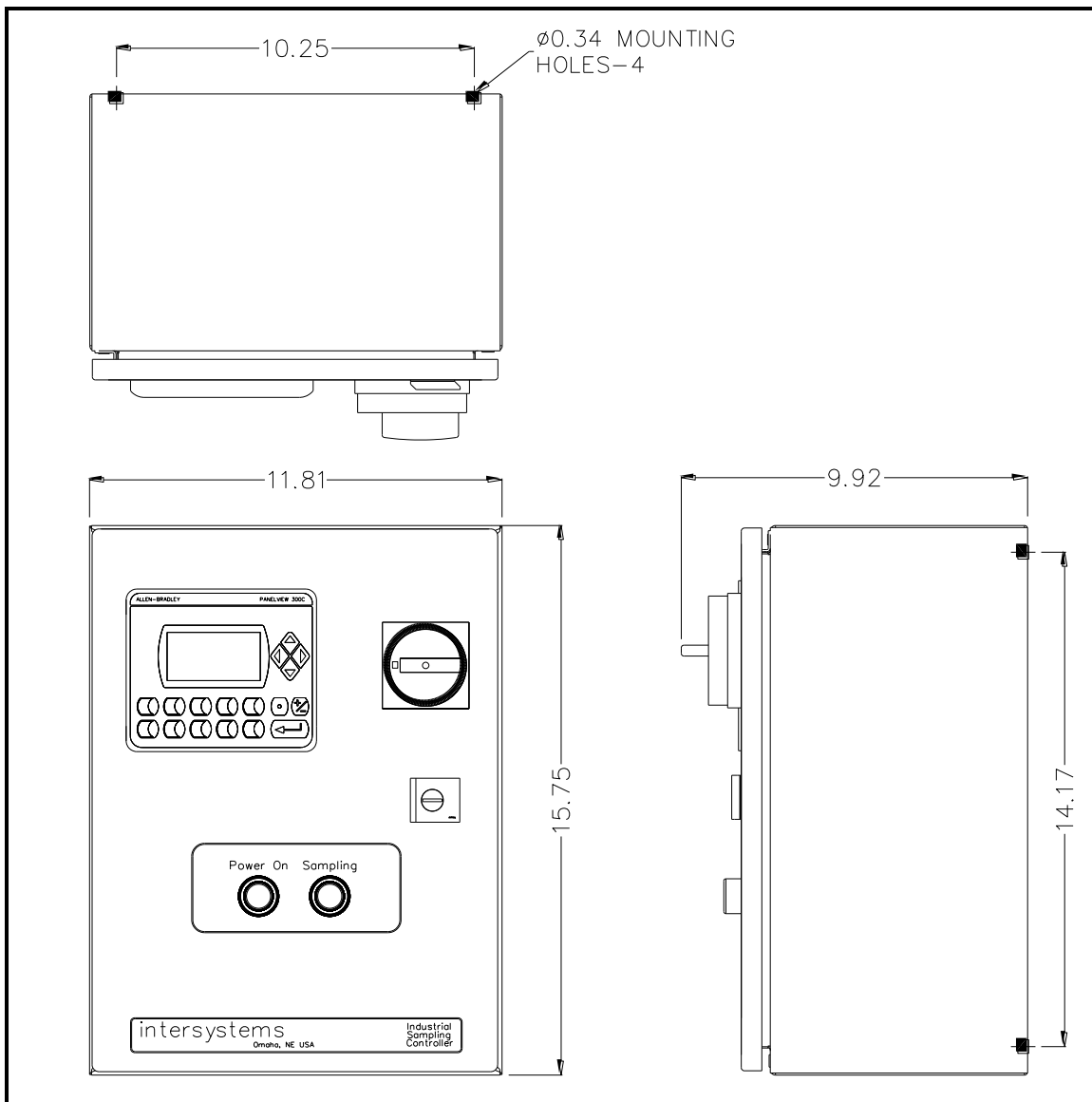
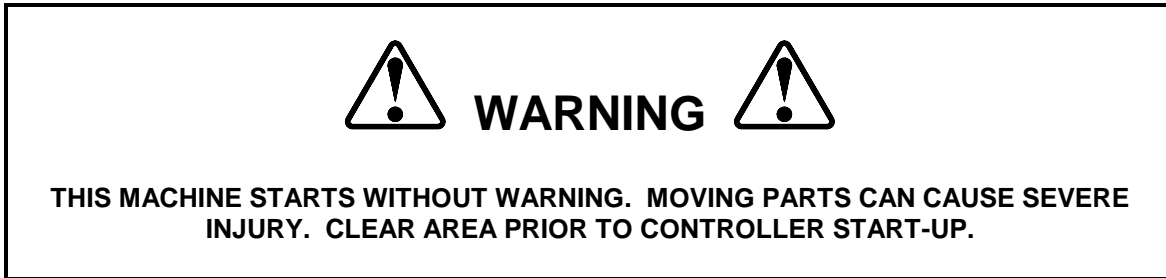


FIGURE 4-1, STANDARD NEMA 4 CONTROL PANEL DETAIL

Refer to the certified electrical drawing(s) for dimensions on control panels with optional features.

4.1.1 POWER OFF/ON SWITCH (S1)

The power OFF/ON Switch controls the electrical power to the controller and the sampler.



4.1.2 POWER Pilot Light

This light is illuminated as long as power is available to the controller and the POWER switch (S1) is set to ON.

4.1.3 SAMPLING Pilot Light

This light is illuminated when a sampling cycle has been initiated and will stay lit until the sampling cycle has completed.

4.1.4 Control Keypad

The operator Keypad is the source of all inputs necessary to operate the control. The Operator Keypad is set up using linked menus to step through the operation of the control. See the control manual 550791A for further information on the sampler control.

4.1.5 Main Fuse (FU1)

The fuse, located along the top center of the control, protects the controller and sampler components against overloads and short circuits.

For 110/120 VAC, 1PH operation, use ONLY a BUSS Type FNM 2 Amp, 250 VAC Slo-Blo fuse or equivalent.

For 220//240 VAC, 1PH operation, use ONLY a Buss Type FNM, 1 Amp, 250 VAC Slo-Blo fuse of equivalent.

4.1.6 Terminal Strip

This 19-position terminal strip is located along the bottom of the controller. It serves as the controller's interface and connection point for all external circuits and for the components mounted inside the enclosure. Refer to the certified electrical drawing(s).

4.1.7 Power Supply

The controller is equipped with a Power Supply which converts 120/240 VAC to 24 VDC for the operation of the PLC, Micro-View, display lights, input signals and the operation of the control relays. Refer to the certified drawing(s).

4.1.8 Control Relays

The controller is equipped with four control relays which are driven by the PLC 24 VDC outputs. Each relay has a mechanical flag indicator showing the relay is energized. The relay contacts are wired for 120/240 VAC. Refer to the certified drawing(s).

4.1.9 Micrologix PLC

The PLC for the control is an Allen Bradley Micrologix controller. The PLC operates using 24 VDC and is prewired to the proper terminal strip inputs and outputs. The processor program is protected to prevent any alterations to the existing program. This control is designed to run Intersystem equipment.

4.1.10 Manual Sampling

The operator may choose to run the sampler in Manual Mode by selecting manual mode in the Panel-View menu (Refer to manual 550791A). After selecting manual mode, each time F1 is pressed on the PanelView, a manual sample is initiated.

4.1.11 Automatic Sampling

The operator may choose to run the sampler in the Automatic Mode by selecting automatic mode in the PanelView menu (Refer to manual 550791A). Note: A jumper or switch must be installed between the controller's terminals 1 and 2 to initiate automatic sampling. When automatic mode is selected, an automatic sample will not be initiated until the jumper circuit between terminals 1 and 2. By installing a remote switch across terminals 1 and 2, the user can initiate the sampling cycle remotely. See manual 550791A for sampling automatic sampling options.



THIS CONTROL IS TO BE OPERATED ONLY ON THE VOLTAGE DESIGNATED ON THE CERTIFIED ELECTRICAL DRAWING! FIRE OR EXPLOSION MAY RESULT, WHICH CAN CAUSE DEATH, SERIOUS INJURY, AND EXTENSIVE DAMAGE TO EQUIPMENT. DO NOT CHANGE THE 115/230 VAC SWITCH SETTING WITHOUT CONSULTING INTERSYSTEMS.

4.2 Sample Cabinet Mounted Electrical Components

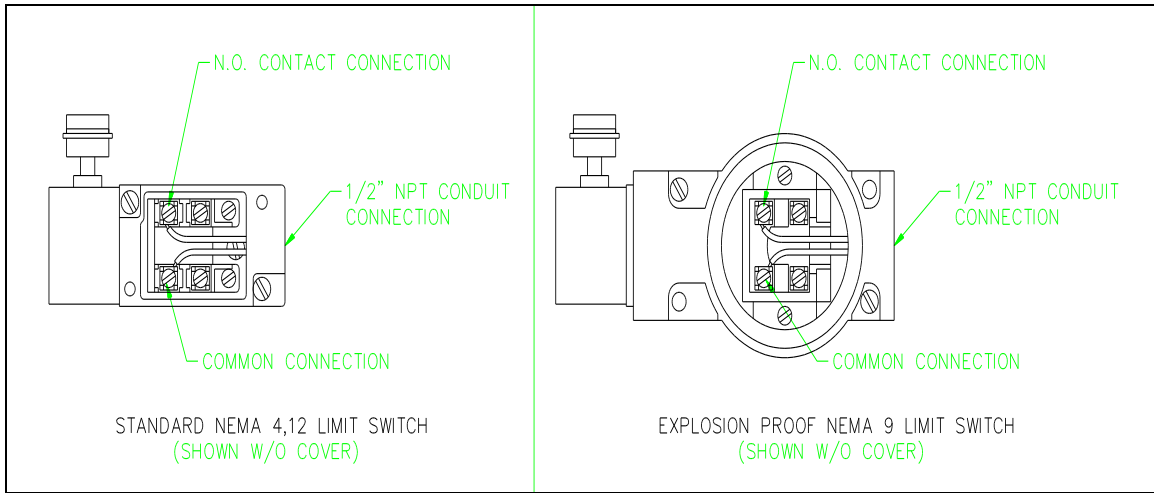


FIGURE 4-2, LIMIT SWITCH CONNECTIONS

4.2.1 Limit Switch, LS-1

This switch is actuated when a sample container is in the loading position. Upon indexing the sample cabinet drive motor starts, the limit switch de-actuates and then re-actuates when the next sample container is in position. The control senses both the opening and closing of the limit switch.

Correct wiring termination is essential to proper sampler operation. Refer to figure 4-3, it shows the limit switch utilized on the SCS index cabinet and the physical orientation of the proper wiring connections.

4.2.2 Jar Full Level Sensor (Optional)

This sensor is connected between terminals #12 & #17 on PCB-2 instead of the normally installed wire. When the sensor is connected, the SCS cabinet will index to the next container whenever the current container is full.

4.2.3 Drive Motor

This motor drives the platter rotation through a right angle gear reducer. Verify that the motor is turning the proper direction of rotation when wiring the system. On initial setup, jog the motor to insure proper rotation.

4.2.4 NEMA 4 C-Face Magnetic Brake

The magnetic brake is mounted between the gear reducer and the drive motor. The brake ensures accurate positioning of the turntable by eliminating any motor coasting. It is spring engaged when at rest and releases when power is applied. The brake is wired in parallel with the drive motor wiring. Refer to certified electrical schematic for proper wiring.

V. MAINTENANCE AND REPAIR



FAILURE TO OBSERVE ALL SAFETY RULES, WRITTEN AND IMPLIED, AND THOSE SUGGESTED BY COMMON SENSE, CAN RESULT IN DEATH, SERIOUS INJURY, AND /OR EQUIPMENT DAMAGE. LOCKOUT POWER BEFORE PERFORMING ANY MAINTENANCE.

5.1 General Maintenance

A good maintenance program involves thorough general housekeeping, adequate periodic re-lubrication, and replacement of worn or damaged components.

5.2 Periodic Inspection

At regularly scheduled intervals, while observing all safety precautions, observe the sample cabinet as it operates. Inspect for:

- A. Loose or missing hardware
- B. Noisy motor or motor/reducer bearings
- C. Overheated motor or reducer
- D. Adequate lubricant in gear reducer
- E. Structural damage
- F. Rust or corrosion
- G. Damaged wiring and conduit, exposed conductors and connections
- H. Make sure that all guards are in place and that all warning labels are in place and legible. Section I, GENERAL SAFETY INFORMATION, explains the purpose and intended location of the warning signs. Warning signs are an important part of any safety program; replace any missing signs IMMEDIATELY!

5.3 Lubrication

5.3.1 Gear Reducer Lubrication

The gear reducer is shipped filled with oil. Check the oil level every six months and add oil if required. Under normal sampler operating conditions the oil should be changed once every two years.

Use a gear lubricant with an AGMA #8 rating for normal operating conditions. Use a synthetic gear lubricant such as "Mobil SHC 634" for extreme operating conditions.

5.3.2 Gearmotor Gear Case



This gear reducer is lubricated for life at the manufacturer factory and periodic re-lubrication should not be required under normal conditions. If leakage is detected repair as needed, clean gear case completely and refill with Hodson 4111 or Gulf Harmony #121 heavy gear oil. The gear case will require approximately 4 ounces (by weight) to fill.

5.4 Limit Switch Adjustment

Loosen and adjust the limit switch arm if required. The limit switch trips on each of the jar loaders thus sensing that the platter has rotated into the next position. The limit switch should trip and remove power from the motor thus stopping the rotation. The jar loader should be positioned directly below the sample inlet.

VI. TROUBLESHOOTING

6.1 General SCS Sample Collection System Troubleshooting


DANGER


CARELESS OR ACCIDENTAL RESTORATION OF POWER CAN RESULT IN DEATH OR SERIOUS INJURY. MAKE CERTAIN AREA IS CLEAR BEFORE REMOVING LOCKOUTS.

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
Sample cabinet does not index in either auto or manual modes (Power light Off).	Power switch OFF.	Turn power switch ON.
	Circuit breaker is open.	Reset breaker.
	Main fuse is blown.	Replace.
	Faulty supply wiring.	Correct. Refer to certified electrical schematic.
	Defective power switch.	Replace switch.
Sample cabinet does not index in either auto or manual modes (Power light On).	Faulty system wiring.	Correct. Refer to certified electrical schematic.
	PC main fuse is blown.	Replace.
	Drive motor burnt out.	Replace.
	Magnetic brake not dis-engaging or defective.	Repair or replace.
Sample cabinet doesn't stop in the correct spot (spillage occurs in the cabinet).	Sample cabinet limit switch not adjusted properly.	Adjust limit switch. Refer to Section 5.4.

VII. REPLACEMENT PARTS

7.1 Scope

The certified drawings list the non-standard components that have been incorporated into the equipment. InterSystems, Inc. normally stocks non-fabricated parts and non-custom OEM parts. Replacement parts for any other components, including fabricated parts and custom OEM components can be supplied upon request.

7.2 Ordering Parts

Direct parts orders or requests for technical assistance to your sales representative or to:

InterSystems
9575 N 109th Ave
Omaha, NE. 68142
Phone: (402) 330-1500
FAX: (402) 330-3350

Please have available the MODEL NUMBER, SERIAL NUMBER and CUSTOMER ORDER NUMBER of the equipment in question as well as the location where the sampler is INSTALLED.

7.3 Replacement Parts

The InterSystems, Inc. sampler is a quality built piece of machinery. As with any machine, parts do wear out and fail. It is InterSystems' recommendation that a small supply of spare parts be kept on hand to cover any minor breakdowns. A separate priced Spare Parts List will be sent identifying the suggested spare parts. It is also necessary to check the certified drawings, which will list any special or custom components utilized on this equipment.

7.4 Repair Kits

The Following chart lists repair kits and parts that are available from InterSystems. These kits are offered as a more economical solution by rebuilding the defective part rather than replacing it. However in some cases the part may be beyond repair and replacement will be necessary.

Product Code	Description
34769	Standard SAE 80W-90 EP Gear Lubricant Oil Quart (Pennzoil 4096)
529601	Optional Synthetic Gear Lubricant Oil Quart (Mobil SHC634)
35527	Limit Switch Contact Block 1 N.O. 1 N.C.

7.4.1 Parts Listing SCS

ITEM NO.	PART NO	DESCRIPTION	QTY
1	26402	LIMIT SWITCH NEMA 4, 12	1
2	35341	ADJ LIMIT SWITCH ROLLER ARM	1
3	35596	LOCKING HANDLE W/ LATCH CAM	2
4	522544	MACHINED GEARMOTOR 1/6HP 40 RPM	1
5	512152	MAGNETIC BRAKE	1
6	529323	ADAPTOR PLATE MOTOR SCS	1
7****	513920	JAR ADAPTER SCS	A/R
7****	513498	18 OZ WHIRLPAC BAG ADAPTER SCS	A/R
8	513488	WAVE SPRING 2-1/2" ID X 1-1/8 LG	A/R
9****	510717	70 MM LID W/ 2" HOLE	A/R
9****	510719	100 MM LID W/ 2" HOLE	A/R
10	23852	2" SHAFT RETAINING RING 302SS	A/R
11	34185	DOORTITE SEAL	A/R
12	27236	O-RING 1-7/8 X 2-1/8	A/R
13****	35601	PLEXIGLAS 1/4 X 7-3/4 X 11-1/4	2
14****	512907	WINDOW RETAINER SS 12" LG	4

***** REFER TO THE CERTIFIED DRAWINGS

ITEM NO.	DESCRIPTION	QTY	18"	26"	34"	42"
15	SEAL PLATE	1	531734	514129	514791	513022
16***	HOUSING	1	522632	522633	522634	522635
16***	HOUSING W/ WINDOWS	1	525580	525581	525582	525583

ITEM NO.	DESCRIPTION	QTY	18"	26"	34"	42"
17	DRIVE COVER	1	524465	523105	524467	524468
18	LIMIT SWITCH COVER	1	531735	523122	531719	N/A

DESCRIPTION		ITEM NO.				
		19	20	21****	21****	22
		GEAR REDUCER	DRIVE SHAFT	1.50" OD INLET COVER	2.00" OD INLET COVER	PLATTER
CABINET SIZE	SIZE					
1 PINT 4 POSITION	18"	522636	522641	522666	522667	522645
1 PINT 6 POSITION	18"	522636	522641	522666	522667	522646
1 PINT 8 POSITION	18"	522637	522642	522668	522669	522647
1 PINT 10 POSITION	26"	522637	522642	522670	522671	522650
1 PINT 12 POSITION	26"	522638	522643	522672	522673	522651
1 PINT 14 POSITION	26"	522638	522643	522672	522673	522652
1 PINT 16 POSITION	34"	522639	522644	522680	522681	522656
1 PINT 18 POSITION	34"	522639	522644	522680	522681	522657
1 PINT 20 POSITION	34"	522639	522644	522680	522681	522658
1 PINT 22 POSITION	42"	522640	522644	522684	522685	522663
1 PINT 24 POSITION	42"	522640	522644	522684	522685	522664
1 PINT 26 POSITION	42"	522640	522644	522684	522685	522665
1 QUART 4 POSITION	18"	522636	522641	522666	522667	522645
1 QUART 6 POSITION	18"	522636	522641	522666	522667	522646
1 QUART 8 POSITION	26"	522637	522642	522672	522673	522649
1 QUART 10 POSITION	26"	522637	522642	522672	522673	522650
1 QUART 12 POSITION	26"	522638	522643	522674	522675	522651
1 QUART 14 POSITION	34"	522638	522643	522678	522679	522655
1 QUART 16 POSITION	34"	522639	522644	522680	522681	522656
1 QUART 18 POSITION	42"	522639	522644	522684	522685	522661
1 QUART 20 POSITION	42"	522639	522644	522684	522685	522662
1 QUART 22 POSITION	42"	522640	522644	522684	522685	522663
2 QUART 4 POSITION	18"	522636	522641	522666	522667	522645
2 QUART 6 POSITION	26"	522636	522641	522670	522671	522648
2 QUART 8 POSITION	26"	522637	522642	522672	522673	522649
2 QUART 10 POSITION	26"	522637	522642	522672	522673	522650
2 QUART 12 POSITION	34"	522638	522643	522678	522679	522654
2 QUART 14 POSITION	34"	522638	522643	522678	522679	522655
2 QUART 16 POSITION	42"	522639	522644	522684	522685	522660
2 QUART 18 POSITION	42"	522639	522644	522684	522685	522661
1 GALLON 4 POSITION	18"	522636	522641	522666	522667	522645
1 GALLON 6 POSITION	26"	522636	522641	522670	522671	522648
1 GALLON 8 POSITION	26"	522637	522642	522672	522673	522649
1 GALLON 10 POSITION	34"	522637	522642	522676	522677	522653
1 GALLON 12 POSITION	34"	522638	522643	522678	522679	522654
1 GALLON 14 POSITION	42"	522638	522643	522682	522683	522659
1 GALLON 16 POSITION	42"	522639	522644	522684	522685	522660

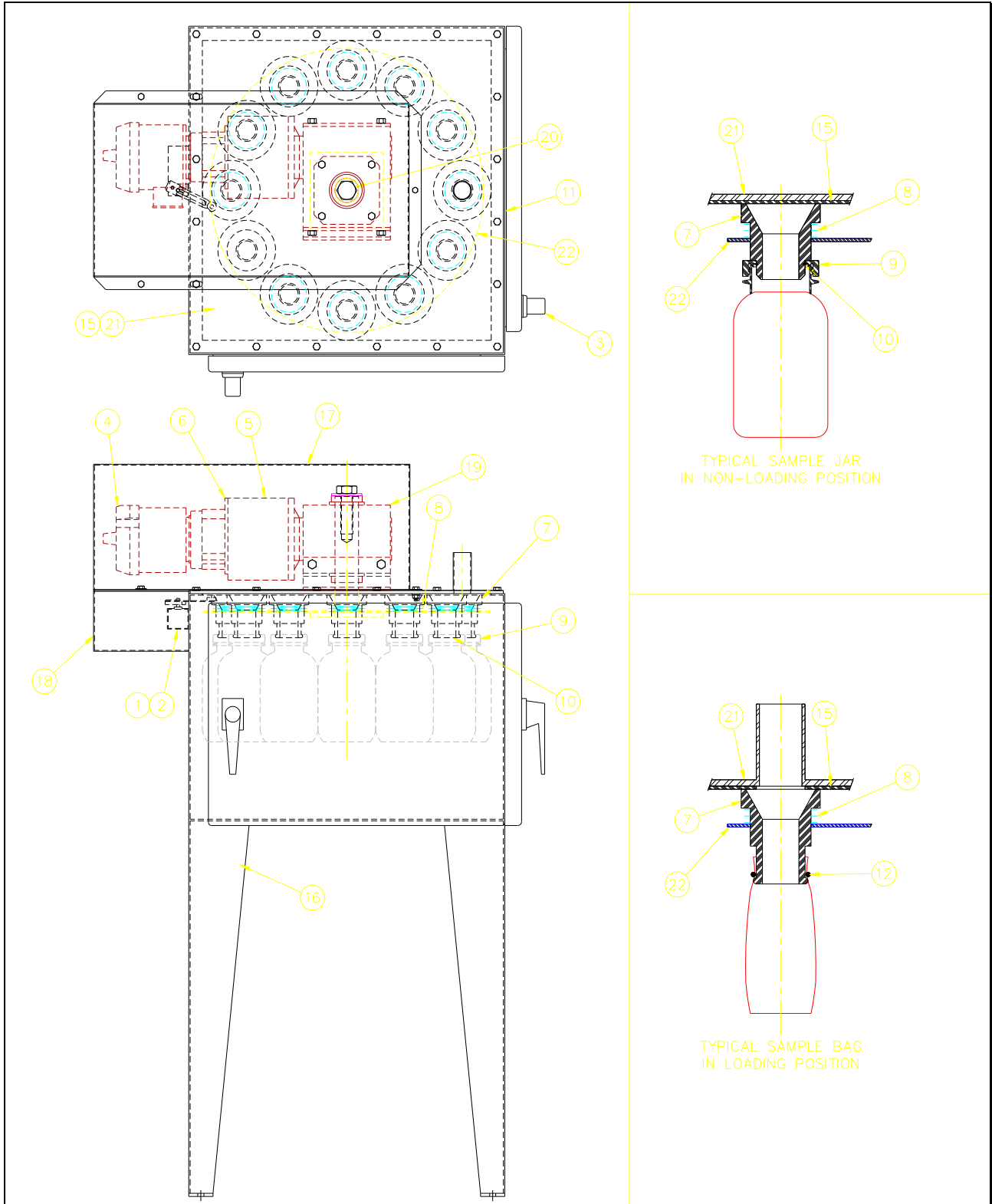


FIGURE 7-1, SCS PLAN & ELEVATION VIEWS

VIII. WARRANTY

InterSystems, Inc. reserves the right to make changes in design or in construction of equipment and components without obligation to incorporate such changes in equipment and components previously ordered.

WARRANTY, LIMITATION OF LIABILITY, DISCLAIMER OF IMPLIED WARRANTIES: InterSystems, Inc. manufactured equipment and components are guaranteed against defects in workmanship or materials for one year from date of shipment. The obligation of InterSystems, Inc. with respect to any goods is limited to replacement or repair of defective parts and equipment provided those parts are returned, shipping costs prepaid, to InterSystems' factory and provided the product has not been subject to misuse, negligence, or accident, or repaired or altered outside of our factory, or other than by an Authorized Service Representative. This warranty does not cover the replacement of parts inoperative because of wear occasioned by use, the cost of replacing parts by a person other than an InterSystems employee or an Authorized Service Representative, or the adjustment of a product where the product was improperly adjusted by the purchaser. In addition, this warranty does not cover components manufactured by others such as motors, drives, clutches, cylinders, valves, blowers, and the like. On those components the standard Manufacturers' warranty applies. In any event, liability is limited to the purchase price paid, and InterSystems, Inc. will, under no circumstances, be responsible for special or consequential damages, or for incidental damages.

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