



Installation and Maintenance Manual

Pressure Control Unit

Series **INOI-7134-11,-12,-13,**
INOI-7134-21,-22,-23,
INOI-7134-31-2,-32,-33



1 Safety Instructions

This manual contains essential information for the protection of users and others from possible injury and/or equipment damage.

- Read this manual before using the product, to ensure correct handling, and read the manuals of related apparatus before use.
- Keep this manual in a safe place for future reference.
- These instructions indicate the level of potential hazard by label of "Caution", "Warning" or "Danger", followed by important safety information which must be carefully followed.
- To ensure safety of personnel and equipment the safety instructions in this manual and the product catalogue must be observed, along with other relevant safety practices.

	Caution	Indicates a hazard with a low level of risk, which if not avoided, could result in minor or moderate injury.
	Warning	Indicates a hazard with a medium level of risk, which if not avoided, could result in death or serious injury.
	Danger	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.

- **Electromagnetic compatibility:** This product is class A equipment that is intended for use in an industrial environment. There may be potential difficulties in ensuring electromagnetic compatibility in other environments due to conducted as well as radiated disturbances.

Warning

- **The compatibility of pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications.**
 Since the products specified here can be used in various operating conditions, their compatibility with the specific pneumatic system must be based on specifications or after analysis and/or tests to meet specific requirements.
- **Only trained personnel should operate pneumatically operated machinery and equipment.**
 Compressed air can be dangerous if an operator is unfamiliar with it. Assembly, handling or repair of pneumatic systems should be performed by trained and experienced personnel.
- **Do not service machinery/equipment or attempt to remove components until safety is confirmed.**
 - 1) Inspection and maintenance of machinery/equipment should only be performed after confirmation of safe locked-out control positions.
 - 2) When equipment is to be removed, confirm the safety process as mentioned above. Switch off air and electrical supplies and exhaust all residual compressed air in the system.
 - 3) Before machinery/equipment is re-started, ensure all safety measures to prevent sudden movement of cylinders etc. (Supply air into the system gradually to create back pressure, i.e. incorporate a soft-start valve).
- **Do not use this product outside of the specifications. Contact SMC if it is to be used in any of the following conditions:**
 - 1) Conditions and environments beyond the given specifications, or if the product is to be used outdoors.
 - 2) Installations in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverage, recreation equipment, emergency stop circuits, press applications, or safety equipment.
 - 3) An application, which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.

Caution

- Ensure that the air supply system is filtered to 5 microns.

1 Safety Instructions (continued)

1.1 Specific recommendation

- If the air pressure fails with power 'on ' the solenoid valve will 'flutter'. Turn off the power to stop the pressure supply or make a set point of 0%.
- This product is pre-set at the factory and must not be dismantled by the user. Contact your local SMC office for advice.
- Ensure, when installing this product, that it is kept clear of power lines to avoid noise interface.
- Ensure that load surge protection is fitted when inductive loads are present (i.e. solenoid, relay etc.).
- Ensure precautions are in place if the product is used in a 'free flow output' condition. All will continue to flow continuously.
- Do not use a lubricator.
- Ensure all air is exhaust from the product before maintenance.

2 Specifications

2.1 Functions

- This product is a Pressure Control Unit consisting of a DeviceNet controller and a number of pressure control modules.
- The Electro-Pneumatic Regulator includes temperature calibration.
- Each pressure control module can operate according to one of the following 6 modes.
- For a diagram of the arrangement of Electro-Pneumatic Regulator, Valves and Pressure transducer, please refer to Pneumatic Circuit.

Mode	Contents	Valve State			
		Hold	Vent	Cal	Vac
Vacuum (default)	The output of the module provides a vacuum to the zone. An external ejector sets the vacuum level and is not part of product.	Closed	Closed	Open	Open
Vent	The output of the module is vented of atmosphere.	Closed	Open	Open	Closed
Pressure	The output of the module is controlling pressure to the zone by the Electro-Pneumatic Regulator as required by the process.	Open	Closed	Open	Closed
Hold	The output of the module is isolated from the pressure controller (Electro-Pneumatic Regulator)	Closed	Closed	Open	Closed
Zero-Cal	This mode is to zero-reset the output of PT1 (internal pressure sensor of Electro-Pneumatic Regulator) and PT2 (external pressure transducer) under atmospheric pressure. When it is successful, this module move to the Vent Mode	Open	Open	Closed	Closed
Pre-Zero-Vent	The output of the module is isolated from the pressure controller (Electro-Pneumatic Regulator) and the external pressure transducer.	Closed	Open	Closed	Closed

2 Specifications (continued)

2.2 General Specifications

Model No: **INOI-7134-11, INOI-7134-21, INOI-7134-31-2**

Channel No. *1	RR/OR-Ch	Z1-Ch	Z2-Ch	Z3-Ch	
Operating Mode *2	Vacuum, Vent, Pressure, Hold, Zero-Cal, Pre-Zero-Vent				
Set Pressure Range	PSI	0.15 to 15 (Pressure Mode) *3		0.1 to 6 (Pressure Mode) *3	
		0 to -10 (Vacuum Mode)			
		-10 to 15 (Hold Mode)		-10 to 6 (Hold Mode)	
Supply Pressure	PSI	30 ± 10%		15 ± 10%	
Vacuum Pressure	PSI	0 to -10			
Linearity *4	PSI	± 0.05		± 0.03	
Hysteresis *4	PSI	Max. 0.1		Max. 0.06	
Stability *4	PSI	± 0.05 (-11) ± 0.02 (-21, -31-2)		± 0.03 (-11) ± 0.02 (-21, -31-2)	
		± 0.05 (-11) ± 0.02 (-21, -31-2)		± 0.03 (-11) ± 0.02 (-21, -31-2)	
Repeatability *4	PSI	± 0.05 (-11) ± 0.02 (-21, -31-2)		± 0.03 (-11) ± 0.02 (-21, -31-2)	
		± 0.05 (-11) ± 0.02 (-21, -31-2)		± 0.03 (-11) ± 0.02 (-21, -31-2)	
Temperature Characteristics	PSI	± 0.12 (20 to 60 °C)		± 0.04 (20 to 60 °C)	
Ambient and Fluid Temperature	°C	20 to 60			
Leakage *5	PSI	Max. 0.05			
Thread Type and Size *6	SUP Port	NPT 1/8			
	OUT Port	7/16-20 UNF			
	VAC Port	NPT 1/8			
Weight *7	lb	Approx. 17.8			
Power Supply	VDC	24 ± 10%			
Current Consumption *8	A	Max. 1.8			
Communication *9	DeviceNet				

Model No: **INOI-7134-12, INOI-7134-22, INOI-7134-32**

Channel No. *1	Z4-Ch	Z5-Ch
Operating Mode *2	Vacuum, Vent, Pressure, Hold, Zero-Cal, Pre-Zero-Vent	
Set Pressure Range	PSI	0.1 to 6 (Pressure Mode) *3
		0 to -10 (Vacuum Mode)
		-10 to 6 (Hold Mode)
Supply Pressure	PSI	15 ± 10%
Vacuum Pressure	PSI	0 to -10
Linearity *4	PSI	± 0.03
Hysteresis *4	PSI	Max. 0.06
Stability *4	PSI	± 0.03 (-12) ± 0.02 (-22, -32)
		± 0.03 (-12) ± 0.02 (-22, -32)
Repeatability *4	PSI	± 0.03 (-12) ± 0.02 (-22, -32)
		± 0.03 (-12) ± 0.02 (-22, -32)
Temperature Characteristics	PSI	± 0.04 (20 to 60 °C)
Ambient and Fluid Temperature	°C	20 to 60
Leakage *5	PSI	Max. 0.05
Thread Type and Size *6	SUP Port	NPT 1/8
	OUT Port	7/16-20 UNF
	VAC Port	NPT 1/8
Weight *7	lb	Approx. 10.8
Power Supply	VDC	24 ± 10%
Current Consumption *8	A	Max. 1
Communication *9	DeviceNet	

2 Specifications (continued)

Model No: **INOI-7134-13, INOI-7134-23, INOI-7134-33**

Channel No. *1	Z4-Ch	Z5-Ch	Z6-Ch	IR-Ch	
Operating Mode *2	Vacuum, Vent, Pressure, Hold, Zero-Cal, Pre-Zero-Vent				
Set Pressure Range	PSI	0.1 to 6 (Pressure Mode) *3		0.15 to 15 (Pressure Mode) *3	
		0 to -10 (Vacuum Mode)			
		-10 to 6 (Hold Mode)		-10 to 15 (Hold Mode)	
Supply Pressure	PSI	15 ± 10%		30 ± 10%	
Vacuum Pressure	PSI	0 to -10			
Linearity *4	PSI	± 0.03		± 0.05	
Hysteresis *4	PSI	Max. 0.06		Max. 0.1	
Stability *4	PSI	± 0.03 (-13) ± 0.02 (-23, -33)		± 0.05 (-13) ± 0.02 (-23, -33)	
		± 0.03 (-13) ± 0.02 (-23, -33)		± 0.05 (-13) ± 0.02 (-23, -33)	
Repeatability *4	PSI	± 0.03 (-13) ± 0.02 (-23, -33)		± 0.05 (-13) ± 0.02 (-23, -33)	
		± 0.03 (-13) ± 0.02 (-23, -33)		± 0.05 (-13) ± 0.02 (-23, -33)	
Temperature Characteristics	PSI	± 0.04 (20 to 60 °C)		± 0.12 (20 to 60 °C)	
Ambient and Fluid Temperature	°C	20 to 60			
Leakage *5	PSI	Max. 0.05			
Thread Type and Size *6	SUP Port	NPT 1/8			
	OUT Port	7/16-20 UNF			
	VAC Port	NPT 1/8			
Weight *7	lb	Approx. 17.8			
Power Supply	VDC	24 ± 10%			
Current Consumption *8	A	Max. 1.8			
Communication *9	DeviceNet				

*1: For the arrangement of each channel, please refer to the Pneumatic circuit.

*2: For each operation mode, please refer to the Functions section.

*3: 0 to 0.15 PSI (15 PSI range) or 0 to 0.1 PSI (6 PSI range) is out of control range. It is possible that the output pressure in this range does not reduce. Please use Vent Mode to completely remove pressure.

*4: The table shows specifications in Pressure Mode.

*5: The table shows the quantity of a pressure descent of one minute in Hold Mode. A load capacity is 50 cm³.

*6: The position of SUP port, OUT port and VAC port, please refer to the Piping section.

*7: Excludes fittings, cables and installation screws.

*8: Excludes the current consumption of the communication line.

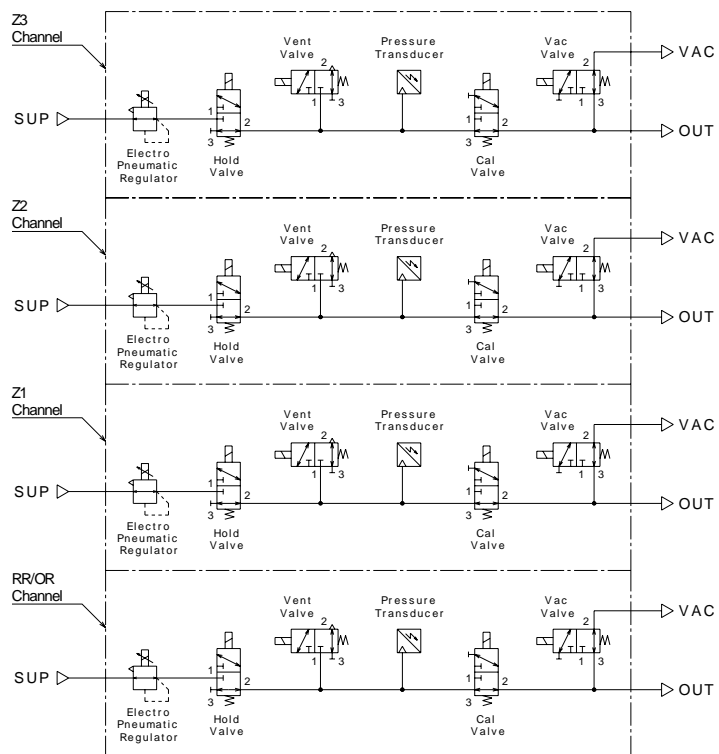
*9: For further details please refer to the Communication specifications.

2.3 Communication Specifications

Protocol	DeviceNet Release 2.0	
Slave Type	Group1, Group2	
MAC ID Settings Range	0 to 63	
Device Information	Vendor ID	7 (SMC Corporation)
	Device Type	00 (Generic Device)
	Product Code	1 (DeviceNet Controller for AMAT UPA)
	Product Name	DeviceNet Controller
Connection supported	Explicit, Polled I/O	
Baud Rate	125 kbps, 250 kbps, 500 kbps	
Rated Voltage	24 VDC	
Current Consumption	50 mA or less	

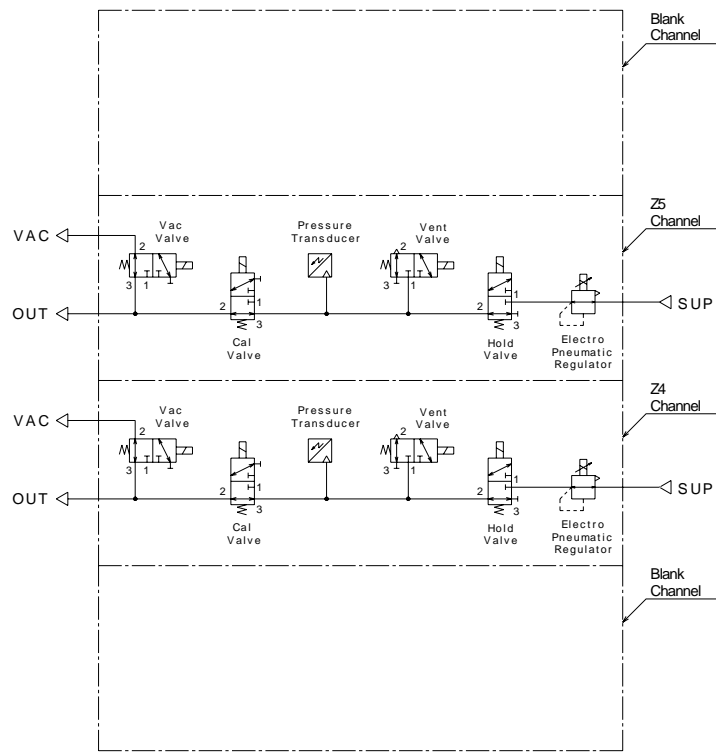
3 Pneumatic Circuit

3.1 Model No: INOI-7134-11, INOI-7134-21



3 Pneumatic Circuit (continued)

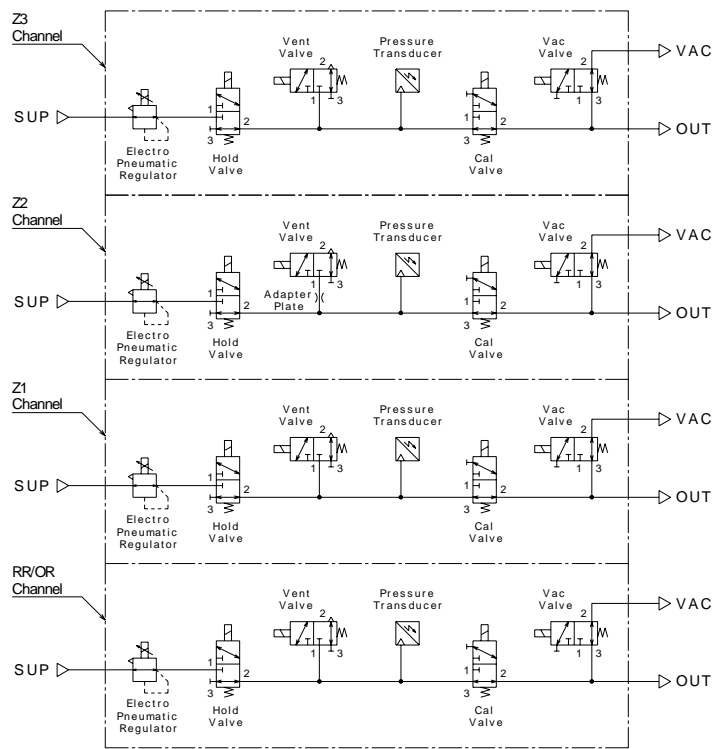
3.3 Model No: INOI-7134-12, INOI-7134-22, INOI-7134-32



NOTE

- A Blanking base is put on each blank channel.

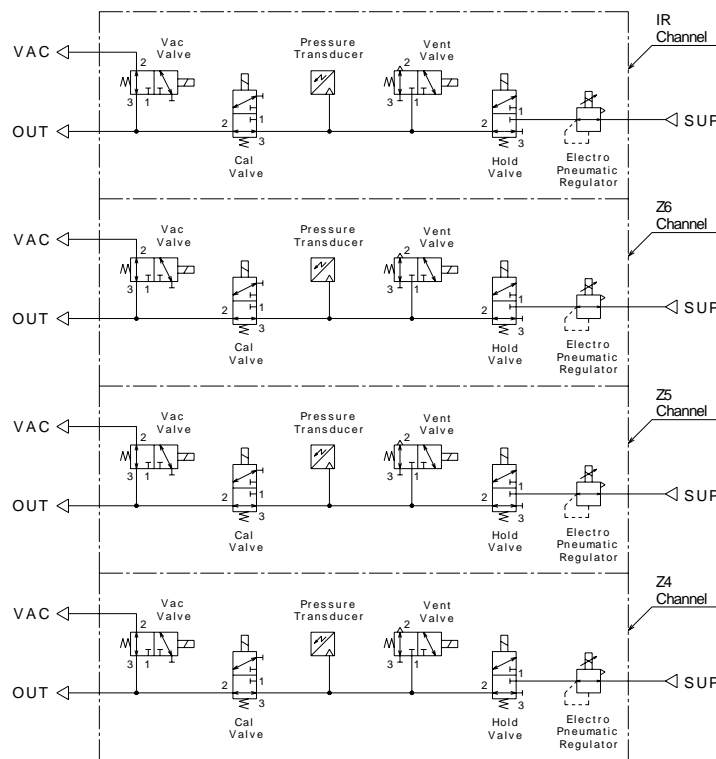
3.2 Model No: INOI-7134-31-2



NOTE

- An adapter plate attaches only to Z2 channel

3.4 Model No: INOI-7134-13, INOI-7134-23, INOI-7134-33



4 Installation

Warning

- Do not install unless the Safety Instructions have been read and understood.

4.1 Environment

Warning

- Do not use in an environment where the product is directly exposed to corrosive gases, chemicals, salt water, water or steam.
- Do not use in an explosive atmosphere.
- The product should not be exposed to prolonged sunlight. Use a protective cover.
- Do not mount the product in a location where it is subject to strong vibrations and/or shock. Check the product specifications for above ratings.
- Do not mount the product in a location where it is exposed to radiant heat.

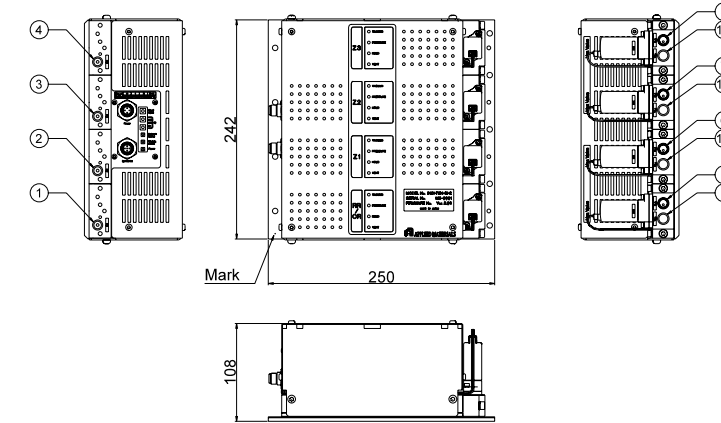
4.2 Piping

Caution

- Before piping make sure to clean up chips, cutting oil, dust etc.
- When installing piping or fitting into a port, ensure that sealant material does not enter inside the port. When using seal tape, leave 1.5 to 2 threads exposed on the end of the pipe/fitting.

4 Installation (continued)

Model No: INOI-7134-31-2

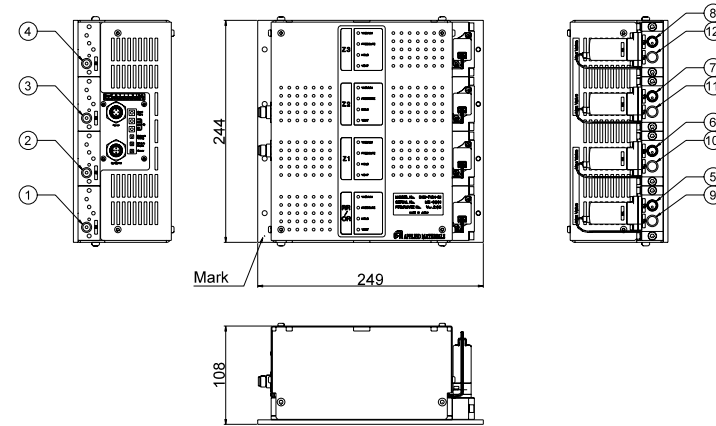


No.	Channel Name	Port Name	Thread Type and Size
1	RR/OR Channel	SUP Port	NPT 1/8
2	Z1 Channel		
3	Z2 Channel		
4	Z3 Channel	OUT Port	7/16-20 UNF
6	Z1 Channel		
7	Z2 Channel		
8	Z3 Channel	VAC Port	NPT 1/8
9	RR/OR Channel		
10	Z1 Channel		
11	Z2 Channel		
12	Z3 Channel		

NOTE

- The dimensions (mm) shown exclude projections such as screws.

Model No: INOI-7134-11, INOI-7134-21

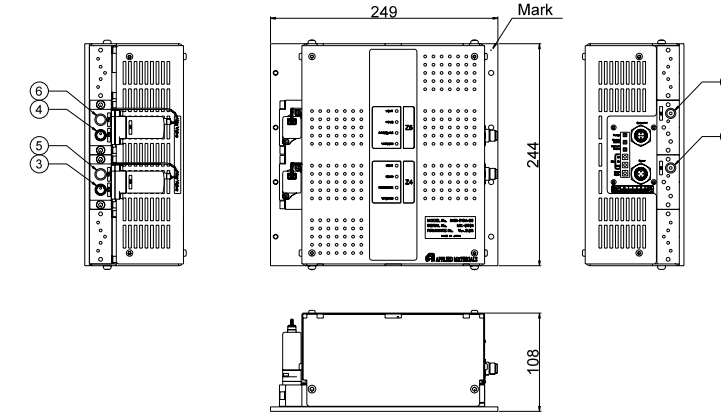


No.	Channel Name	Port Name	Thread Type and Size
1	RR/OR Channel	SUP Port	NPT 1/8
2	Z1 Channel		
3	Z2 Channel		
4	Z3 Channel	OUT Port	7/16-20 UNF
5	RR/OR Channel		
6	Z1 Channel		
7	Z2 Channel	VAC Port	NPT 1/8
8	Z3 Channel		
9	RR/OR Channel		
10	Z1 Channel		
11	Z2 Channel		
12	Z3 Channel		

NOTE

- The dimensions (mm) shown exclude projections such as screws.

Model No: INOI-7134-12, INOI-7134-22



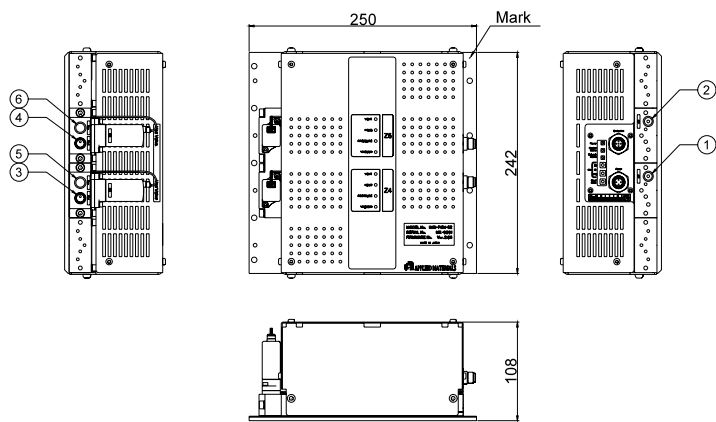
No.	Channel Name	Port Name	Thread Type and Size
1	Z4 Channel	SUP Port	NPT 1/8
2	Z5 Channel		
3	Z4 Channel	OUT Port	7/16-20 UNF
4	Z5 Channel		
5	Z4 Channel	VAC Port	NPT 1/8
6	Z5 Channel		

NOTE

- The dimensions (mm) shown exclude projections such as screws.

4 Installation (continued)

Model No.: INOI-7134-32



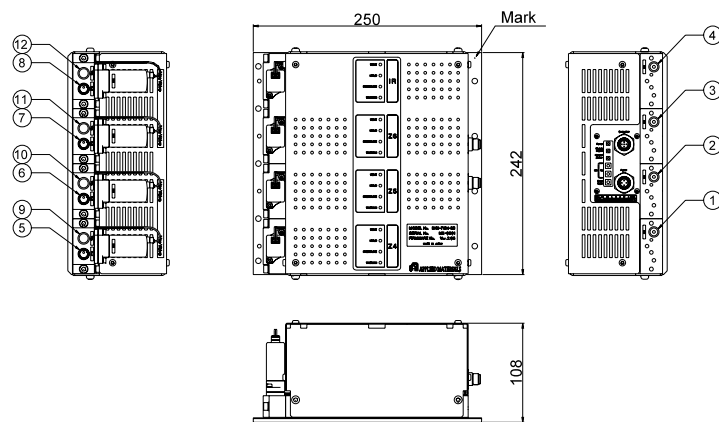
No.	Channel Name	Port Name	Thread Type and Size
1	Z4 Channel	SUP Port	NPT 1/8
2	Z5 Channel		
3	Z4 Channel	OUT Port	7/16-20 UNF
4	Z5 Channel		
5	Z4 Channel	VAC Port	NPT 1/8
6	Z5 Channel		

NOTE

- The dimensions (mm) shown exclude projections such as screws.

4 Installation (continued)

Model No.: INOI-7134-33

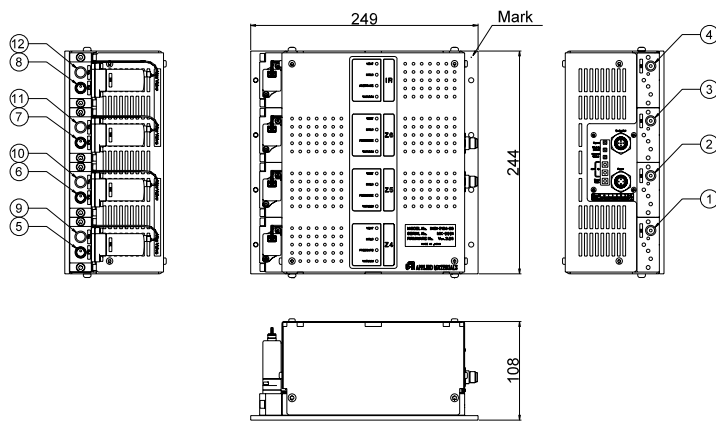


No.	Channel Name	Port Name	Thread Type and Size
1	Z4 Channel	SUP Port	NPT 1/8
2	Z5 Channel		
3	Z6 Channel		
4	IR Channel	OUT Port	7/16-20 UNF
5	Z4 Channel		
6	Z5 Channel		
7	Z6 Channel	VAC Port	NPT 1/8
8	IR Channel		
9	Z4 Channel		
10	Z5 Channel	VAC Port	NPT 1/8
11	Z6 Channel		
12	IR Channel		

NOTE

- The dimensions (mm) shown exclude projections such as screws.

Model No.: INOI-7134-13, INOI-7134-23



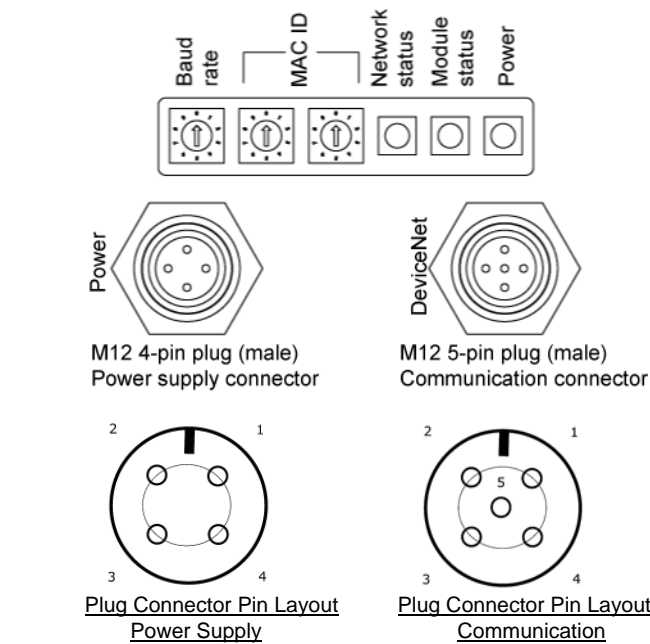
No.	Channel Name	Port Name	Thread Type and Size
1	Z4 Channel	SUP Port	NPT 1/8
2	Z5 Channel		
3	Z6 Channel		
4	IR Channel	OUT Port	7/16-20 UNF
5	Z4 Channel		
6	Z5 Channel		
7	Z6 Channel	VAC Port	NPT 1/8
8	IR Channel		
9	Z4 Channel		
10	Z5 Channel	VAC Port	NPT 1/8
11	Z6 Channel		
12	IR Channel		

NOTE

- The dimensions (mm) shown exclude projections such as screws.

4.3 Electrical connection

- The Power Supply cable and Communications cable are not supplied with this product. Please purchase these separately.
- Tightening torque for M12 connectors: 0.1 N•m max.



Pin assignment

Pin No.	Signal Name
1	24 VDC ± 10%
2	No connection
3	Ground
4	No connection

Pin assignment

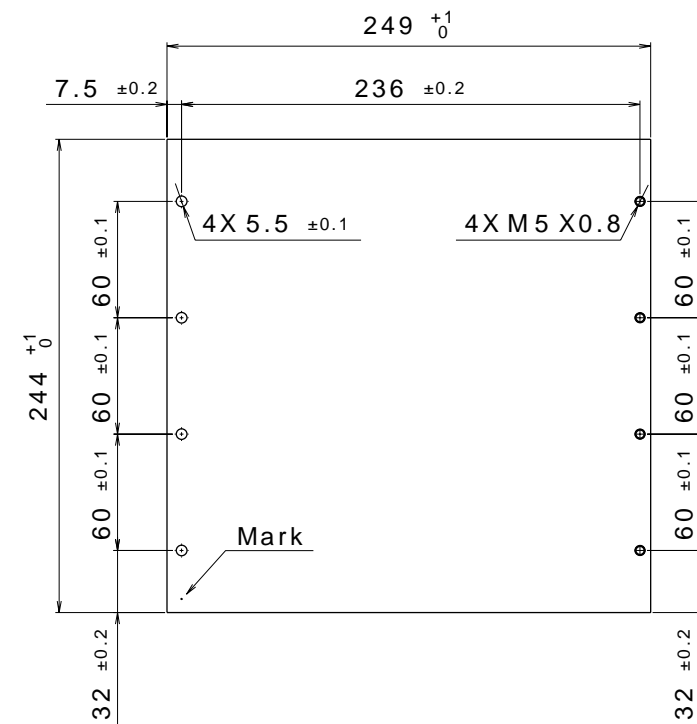
Pin No.	Signal Name
1	DRAIN
2	V +
3	V -
4	CAN H
5	CAN L

5 Mounting

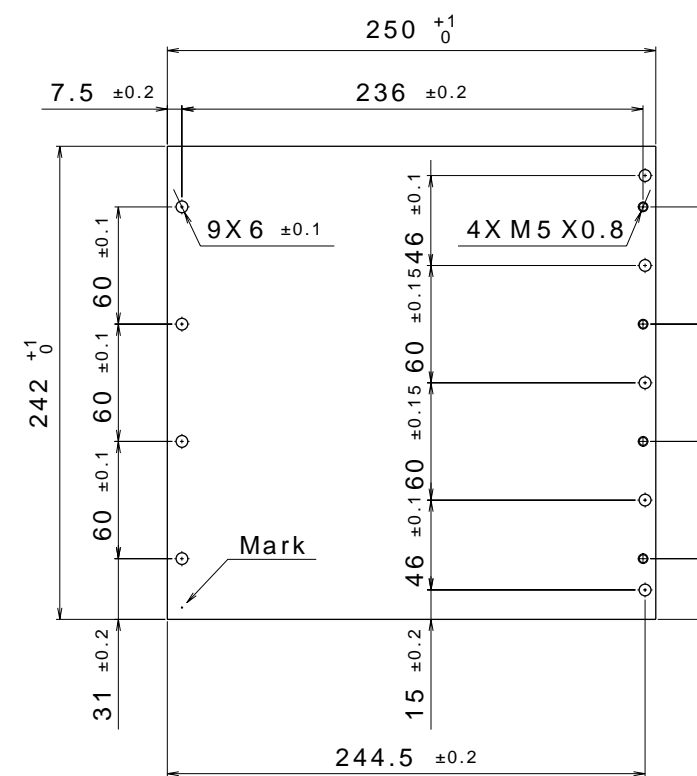
The following are dimensions of the mounting plate on to which each module is mounted. Note that the 'mark' positions vary according to the Model No. Secure the module at eight positions with screws.

- Thickness of aluminium mounting plate: 5 mm
- Tightening Torque: 1.5 ± 0.2 N•m

Model No.: INOI-7134-11, -12, -13, INOI-7134-21, -22, -23



Model No.: INOI-7134-31-2, -32, -33



6 Settings and Displays

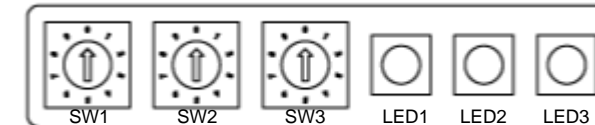
6.1 Setting and Front Panel Display

Open the protective cover and adjust the setting switches with a flat-blade screwdriver or similar tools.

- Be sure to turn off the power before setting the switches.
- Be sure to set these switches before use.
- After setting, be sure to re-attach the protective cover.

Caution

- Do not operate the module without the protective cover fitted.



SW1: Baud Rate Setting Switch
 SW2: MAC ID Setting Switch (X10)
 SW3: MAC ID Setting Switch (X1)
 LED1: Network Status LED
 LED2: Module Status LED
 LED3: Power Status LED

Baud Rate Setting Switch:

SW1 Position	Baud Rate
0	125 kbps
1	250 kbps
2	500 kbps
3 to 9	Not Applicable

MAC ID Setting Switch:

SW2 Position (X10)	SW3 Position (X1)	MAC ID
0	0 to 9	0 to 9
1	0 to 9	10 to 19
2	0 to 9	20 to 29
3	0 to 9	30 to 39
4	0 to 9	40 to 49
5	0 to 9	50 to 59
6	0 to 3	60 to 63
7	4 to 9	Not Applicable
8	0 to 9	Not Applicable
9	0 to 9	Not Applicable

Network Status LED:

LED is:	For this state:
Off	Not Powered / Not On-Line
Flashing Green	On-Line, Not Connected
Green	Link OK, On-Line, Connected
Flashing Red	Connection Time-Out
Red	Critical Link Failure

Module Status LED:

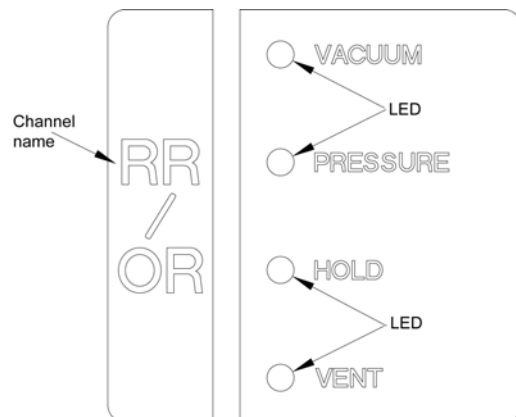
LED is:	For this state:
Off	Not Powered
Flashing Green	Device in standby (The Device Needs Commissioning)
Green	Device Operational
Flashing Red	Minor Fault
Red	Unrecoverable Fault
Flashing Red-Green	Device Self Testing

6 Settings and Displays (continued)

6.2 Operation Mode Display

In Operation mode, the lighting pattern of the LED's is different. Please refer below.

- The position of the Channel Name and arrangements of LED indication vary according to the Model No.



Mode	Contents
Vacuum	Vacuum LED is turned on
Vent	Vent LED is turned on.
Pressure	Pressure LED is turned on.
Hold	Hold LED is turned on.
Zero-Cal	All LEDs are turned on while Zero-Cal is operating. When it is successful, this module moves to the Vent Mode (Vent LED is turned on.)
Pre-Zero-Vent	Vent LED is flashed on and off.

7 Maintenance

In the case of maintenance, please contact your local SMC office for advice. The Electro-Pneumatic Regulator is factory adjusted with temperature calibration, and must never be dismantled. If the regulator is dismantled, the temperature characteristic cannot be guaranteed.

Warning

- Not following proper procedures could cause the product to malfunction and could lead to damage to the equipment or machine.
- If handled improperly, compressed air can be dangerous. Assembly, handling and repair of pneumatic system should be performed by qualified personnel only.
- Drain: remove condensate from the filter bowl on a regular basis.
- Shut-down before maintenance: before attempting any kind of maintenance make sure the supply pressure is shut off and all residual air pressure is released from the system to be worked on.
- Start-up after maintenance: apply operating pressure and power to the equipment and check for proper operation and possible air leaks. If operation is abnormal, please verify product set-up parameters.
- Do not make any modification to the product.
- Do not disassemble the product, unless required by installation or maintenance instructions.

8 Contacts

AUSTRIA	(43) 2262 62280	NETHERLANDS	(31) 20 531 8888
BELGIUM	(32) 3 355 1464	NORWAY	(47) 67 12 90 20
CZECH REP.	(420) 541 424 611	POLAND	(48) 22 211 9600
DENMARK	(45) 7025 2900	PORTUGAL	(351) 21 471 1880
FINLAND	(358) 207 513513	SLOVAKIA	(421) 2 444 56725
FRANCE	(33) 1 6476 1000	SLOVENIA	(386) 73 885 412
GERMANY	(49) 6103 4020	SPAIN	(34) 945 184 100
GREECE	(30) 210 271 7265	SWEDEN	(46) 8 603 1200
HUNGARY	(36) 23 511 390	SWITZERLAND	(41) 52 396 3131
IRELAND	(353) 1 403 9000	UNITED KINGDOM	(44) 1908 563888
ITALY	(39) 02 92711		

SMC Corporation

URL : [http:// www.smcworld.com](http://www.smcworld.com) (Global) [http// www.smceu.com](http:// www.smceu.com) (Europe)

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