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Liquid Industrial Cable

ALICAT

Pressure Gauge Rolamite Valve

PART

Portable Mass Flow Meter Stainless

NUMBERS

Part Number Guide

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Formatting Part Numbers

Most Alicat part numbers consist of a top-level part number and a group of adder codes. Top-level part number elements are separated by hyphens (-), and adder codes are separated by commas (,). A forward slash (/) separates these two groups of your Alicat part number.

The following chart shows the minimum information needed to generate part numbers:

The minimum information needed to generate a...	is...	For example...
Bill of Material for M/P/L units	[Instrument Type] — [Stock Instrument Range] — [Display Option] /	MC-1SLPM-D/
Mass flow meter (M) adder	/ [Output 1], GAS: [Primary Gas]	/5M, GAS: Air
Mass controller (MC) adder	/ [Output 1], [Input], GAS: [Primary Gas]	/5M, 5IN, GAS: Air
Dual-Valve mass flow controller (MCD) adder	/ [Output 1], [Input] *P1: [pressure] *P2: [exhaust/outlet pressure]	/5M, 5IN *P1: 45 PSIG, *P2: vac
Pressure meter (P) adder	/ [Output 1]	/5P
Pressure controller (PC) adder	/ [Output 1], [Input]	/5P, 5IN
Dual-valve pressure controller (PCD) adder	/ [Output 1], [Input] *P1: [pressure] *VOL: [volume] *P2: [exhaust/outlet pressure]	/5P, 5IN *P1: atm *VOL: 80CC *P2: vac
Liquid meter (L) adder	/ [Output 1]	/5V
Liquid controller (LC) adder	/ [Output 1], [Input]	/5V, 5IN

Part Number Format

Alicat part numbers usually follow the following format:

[Instrument Type] — [Stock Instrument Range] — [Display Option] — [Communication Option] — [Valve Option] — [Build Option]

/ [Output 1], [Output 2], [Default Input], [Analog Input], GAS: [Primary Gas], [Configuration Adders]

Example: MC-1SLPM-D-I-.25VCRM-EPDM/5M, 52V, LIN, 5IN, GAS: Air, HC, DS

The example unit above would be a mass flow controller (MC) with a range of 1 standard liter per minute (1SLPM), standard display (D), industrial connector (I), standard communication RS 232 digital communication option [no notation], ¼" welded male VCR ports and EPDM seals [.25VCRM-EPDM]. It would be set up for: 0-5v signal output for mass flow (5M) and a secondary 0-5v output for volumetric flow (52V), on-screen input (LIN) in addition to the analog 0-5v input (5IN), air as the preselected gas (GAS: Air), high-accuracy calibration (HC) with a downstream valve position (DS).

Alicat Part Number Decoder

Top Level Part Numbers

Top level elements appear before the forward slash (/) in the Alicat part number, as in the example: **MWB-40SLPM-TFT-DB15-MODBUS-54X54-SAE-EPDM-CC**

INSTRUMENT TYPES

Primary Instrument Types

M Gas mass flow meter
P Pressure gauge
L Liquid flow meter

Secondary Instrument Types

3 Remote pressure sense port
AS Low-range pressure sensor
B Battery-powered
C Flow or pressure controller
D Dual valves
E Enclosed valves
H/PH/RH Hammerhead valves
P Large Pneutronics valve
Q High pressure gas flow
R High-flow Rolamite valve
S Stainless sensor for corrosives
V Enclosed valve plus pneumatic shutoff valve
W Whisper™ low pressure drop

STOCK INSTRUMENT RANGES

2INH2OD Differential pressure range
2INH2OG Gauge pressure range
#CCM Liquid flow range (ccm)
EXTSEN External pressure sensor
#LPM Liquid flow range (lpm)
#PSIA Absolute pressure range (psi)
#PSID Differential pressure range (psi)
#PSIG Gauge pressure range (psi)
#SCCM Gas flow range (sccm)
#SLPM Gas flow range (slpm)

DISPLAY OPTIONS

D Backlit monochrome
O No display
RD/RDSD Backlit monochrome remote display
TFT Backlit color
TFTRD/TFTRDSD Backlit color remote display

COMMUNICATIONS OPTIONS

[no notation] RS-232 over 8-pin mini-DIN
485 RS-485 protocol
DB9x 9-pin D-sub with x pinout
DB15x 15-pin D-sub with x pinout
DB15HD High-density 15-pin D-sub
DNET DeviceNet
EIP Ethernet/IP
I 6-pin locking DIN plus 8-pin mini-DIN
IO 6-pin locking DIN only
ISC 4-pin locking DIN for external sensor
M12 8-pin threaded connector (M12-IPJ/M12O)
MODBUS Modbus-RTU
PROFIBUS Profibus DP-V1
RJ45 8-pin RJ45

VALVE OPTIONS

[no notation] Default valve (controllers)
BV Integrated bleed valve
DS Downstream valve position
NO Normally open valve
No valve Does not include valve
PAR Rolamite valve parallel wound coil
PCA# ASCO Numatics valve orifice size
PCV# Small Pneutronics valve orifice size
RV Detached remote valve
SV Small Pneutronics stainless valve
#X# Rolamite valve hole pattern

Top Level Part Numbers (Continued)

BUILD OPTIONS

[no notation] NPT threads, Viton elastomers
30PSIA Low-range sensor for gas flow
#BSP British Standard Pipe threads
CC Conformal coating
#COMP Welded compression fittings
DPORT Down port connections
EPDM EPDM elastomers
FFKM FFKM/Calrez elastomers
IB Integrated barometer
IP# Ingress protection rating
IPC Integrated potentiometer control
NESSI NeSSI-compatible flow body
#NPT non-standard NPT threads
REMOTE Remote electronics assembly
SAE SAE threads
SG Separate ground
SILICONE Silicone elastomers
TMDPORT Top-mount down port
#VCR Welded VCR fittings
#VCO Welded VCO fittings
VITON FKM/Viton elastomers
X CSA Class 1 Division 2/ATEX Zone 2



MWB - TFT

Adder Codes

ANALOG SIGNALS

Analog Outputs

1x 1-5 Vdc
5x 0-5 Vdc
10x 0-10 Vdc
Cx 4-20 mA

Analog Inputs

x2x secondary signal
xIN Setpoint input
xM Gas mass flow output
xP Pressure output
xT Temperature output
xV Gas or liquid volumetric flow output

RIN RS-232 input selection

Adder Codes (Continued)

A-Z
17025HF 17025 (L.A.B.) high-flow certification
17025LF 17025 (L.A.B.) low-flow certification

A2LA 17025 (A2LA) calibration certification
ALHx: y High flow alarm above y setpoint
ALLx: y Low flow alarm below y setpoint
5 5 Vdc analog output
12 12 Vdc analog output
24 24 Vdc analog output
OD 500 mA open drain
APC Absolute pressure calibration for gas flow
APHC High-accuracy absolute pressure calibration for gas flow

BAUD: # Baud rate
BD Bidirectional flow or gauge pressure calibration

CLP Closed-loop pressure control
CLV Closed-loop volumetric flow control
CPNT (x,y,z) Additional calibration points

DB: # Deadband % preset
DS Downstream valve placement

GAS: x Initial gas selection

HC High-accuracy flow or pressure calibration
ID: # RS-232/485 unit address

LIQUID: x Custom liquid calibration

MAXAVG Maximum geometric running averaging

NTP: x Custom NTP conditions

OPL: x Overpressure limit for valve closure
OXC Oxygen cleaning

P1: x Expected inlet pressure
P2: x Expected outlet pressure
PD (p, d) Custom PD valve tuning
PD2I (p, d, i) Custom PD2I valve tuning
POP Power over Profibus
PROFIBUS: # Profibus unit address
PU: x Selects flow parameter on power-up
PUGS: x Gas selection on power-up
PUL: x Pulsed analog output at x flow total
PUSP: # Setpoint on power-up
PUT: # Tare after x seconds on power-up

RANGE: x Custom calibration range
RCPNT (x,y,z) Replacement calibration points
RTL Right-to-left flow direction

SENIN: x External pressure sensor input signal
SR: # Streaming rate in milliseconds
STP: x Custom STP conditions

TOT Integrated flow totalizer
TOT (x y, R/F/E) Custom resolution x and/or units y
E Rolls over and flashes OVR error at max count
F Freezes and flashes OVR error at max count
R Rolls over at max count
TOTAVG Totalizer averaging
TOTBD# Bidirectional totalizers:
TOTBD1 Negative values subtract from total
TOTBD2 Negative values subtract from total, and total can never be negative
TOTBD3 Negative values have no effect
TOTBD4 Negative values ignored, resets at zero

VOL: x Expected closed volume

Instrument Types

[Instrument Type] — *[Stock Instrument Range] — [Display Option] — [Communication Option] — [Valve Option] — [Build Option]*

Primary Instrument Type

M (M, MS)

Mass flow meter

Measures mass flow and volumetric flow of gases.

P (P, PS)

Pressure gauge/Transducer

Measures pressure for gases and liquids.

L (L)

Liquid flow meter

Measures volumetric flow for water and other liquids.

Secondary Instrument Type

3 (PC3, PCD3)

External pressure port for remote sensing of pressure outside of the flow body. Pressure controllers only.

AS (PCS, PCAS)

All Sensors sensor for low gauge/differential pressure applications (< 1 PSIG/A/D). Pressure gauges and controllers only.

B (MB, PB, LB)

Integrated battery pack on top of electronics casing. Available for all meters.

BC

BASIS™: Designed for stress-free integration within original equipment manufacturer (OEM) products, BASIS features a small footprint and high-accuracy MEMS sensor.

C (PC, LC)

Controller, contains a valve system to control the flow or pressure of the gas or liquid.

D (MCD, PCD)

Dual valves for mass flow and pressure controllers.

E (MCE)

Includes small Pneutronics downstream valve integrated within a flow body that matches competitors' mass flow controller footprint. Mass flow controllers only.

H (MCH, PCH)

Hammerhead valves: twin valves in place of single valve to allow doubled flow rate. Not available for liquid controllers.

P (MCP, PCP)

Large Pneutronics valve for low inlet pressures of ≤ 80 PSI (-SV not an option) and moderate flow rates (≥ 50 SLPM). Not for liquid control units.

PCU

Portable Calibration Unit of 3 meters ≤ 1500 SLPM.

Q (MCQ)

High pressure (160-320 psia) gas flow for mass flow controllers.

R (MCR, PCR, LCR)

Rolamite low pressure drop valve for high flow. Optional in all controllers.
≤ 250 SLPM – Rolamite HRV_x_
≥ 500 SLPM – Rolamite LRV)_x_
≥ 2000 SLPM – Rolamite LRV_x_

S (MS, PS, MCS, PCS)

Stainless steel flow body for corrosive gases, with stainless steel sensor (max 160 PSIA), FFKM seals. Not available for liquid units.

V (MCV)

MCE with second pneumatic Swagelok positive shut-off valve downstream. Mass flow controllers only.

W (MW, MCW)

High-resolution differential pressure sensor and oversized flow body for low system pressure drop. Mass flow instruments only.

Corrosives

Mass flow meters, controllers, pressure gauges and pressure controllers can be made with a [S] stainless steel flow body, sensor and seals for use with corrosive gasses.

Mass Flow Meters

M Measure mass flow, volumetric flow, line pressure and line temperature simultaneously, all in real time.



M



M for high flow



MB

MW "Whisper" series mass flow meters with low pressure drop. Low pressure drop minimizes system impact, enabling flow measurement at near-atmospheric pressures or when there is little available system pressure.





MQ



The versatile MQ flow meter reduces the time it takes to verify or validate flows that are operating at high pressures (160-320 psia). Also available as a portable unit: MBQ (not pictured).

Portable Gas Flow Standards

AFS



Featuring Alicat's most advanced calibration for optimal performance across changing temperatures, plus an on-board relative humidity sensor to maintain its accuracy all the way up to 100% RH (non-condensing).

FP-25



Alicat's FP-25 and FP-25BT (with Bluetooth) flow standards calibrate every low-volume particulate air sampler on your deck. All-weather accuracy and durability ensure consistent readings, no matter the wind, temperature or humidity.

PCU



Alicat's PCU is a secondary calibration standard that combines up to 3 high-accuracy flow meters of varied ranges (max 1500 slpm) with totalizers into a rugged industrial carrying case for go-anywhere portability. PCU's can be powered by two 9-volt batteries or the included AC cable and include a copy of Alicat's Flow Vision SC™ software.

Mass Flow Controllers

MC

Alicat's MC series gas mass flow controller achieves new setpoints rapidly and stays there, even in the face of pressure spikes. We use customer application parameters to customize valve and PID tuning for fast and stable control.



MC



MCR



MCRH

MCW

"Whisper" series mass flow controllers with low pressure drop are ideal for controlling mass and volumetric flow rates when there is little available system pressure.



MCW



MCRW

MCQ



The MCQ flow controller delivers the fast control response of our standard controller to applications that require higher line pressures (160-320 psia). This high-pressure mass flow controller achieves new setpoints rapidly and stays there, even in the face of pressure spikes.

MCE



The MCE features the same rapid control response of our standard mass flow controller in a form factor that includes welded 1/4" VCR fittings and matches end to end with SEMI standard MFCs.

MCV



The MCV marries the MCE to an integrated pneumatic shut-off valve for hard vacuum applications. Connect an air line to the shut-off valve to prevent contamination during zero setpoint conditions.

BC



BASIS™ mass flow controllers offer repeatable, reliable gas flow control in a compact, economical package for high-quantity orders. Designed for stress-free integration within original equipment manufacturer (OEM) products, BASIS features a small footprint, high-accuracy MEMS sensor and Alicat's leading fast valve control.

Multi-directional Gas Flow Controllers

MCD

Alicat's MCD is the world's first bidirectional mass flow controller. Control flows into your flowing or closed process in one direction, and then reverse flow with multivariate measurement of flow, pressure and temperature in each direction. Or control flow into a closed process using pressure control while monitoring flow rates, and then vent the volume with no need for additional bleed valves.



MCD



MCRD

MCDW

Alicat's MCDW "Whisper" brings the benefits of low pressure drop to our incredibly versatile MCD bidirectional flow controller.



MCT

Dual valves located upstream allow you to switch your gas source. Dual valves located downstream make it possible to run two separate processes on a single source of gas.



MCT – upstream valves



MCT – downstream valves

Pressure Transducers (Gauges)

P Measure the differential pressure between any two points in your process. The two process ports connect to opposite sides of the differential pressure sensor; positive readings denote higher pressure at the left (upstream) process port, and negative readings denote higher pressure at the right (downstream) port. This differential pressure transducer can also double as a dead-ended gauge pressure transducer if you leave the downstream port open to atmosphere.



P



PB

Pressure controllers for flowing processes

PC Absolute and Gauge

Control the absolute pressure (referenced to vacuum) or gauge pressure (referenced to local barometric pressure) of gases or liquids in your process.



PCH



PCR



PC-EXTSEN

PC3

Measure absolute or gauge pressure at any point in a system, and control flow at a different point to ensure your pressure stays on target. Alicat's PC3 series physically isolates the pressure sensor from the valve and flow path so that you can control pressure exactly where you need it. This allows pressure control in areas where you cannot easily install a full pressure controller and reduces the effects of flow-induced pressure changes in high-flow applications.



PC3



PCR3

PC Differential

Measure the differential pressure between any two points in your process, and control flow at a different point to ensure the pressure differential remains constant.



PCP



PCR

Pressure controllers for closed volumes

PCD Absolute and Gauge

Control the absolute pressure (referenced to vacuum) or gauge pressure (referenced to local barometric pressure) of gases or liquids in your process. Alicat's PCD series dual-valve pressure controllers use two proportional valves to precisely control the pressure of gases within closed or dead-ended volumes. They achieve new setpoints rapidly and stay put, even in the face of uneven feed pressure or changing temperatures.



PCD



PCRD

PCD3

Alicat's PCD3 series dual-valve pressure controllers use two proportional valves to precisely control the pressure of gases within dead-ended volumes and physically isolates the pressure sensor from the valve and flow path so that you can control pressure exactly where you need it. This allows pressure control in areas where you cannot easily install a full pressure controller and reduces the effects of flow-induced pressure changes in high-flow applications.



PCD Differential

Measure the differential pressure between any two points in a closed process volume, and control flow at a different point to ensure the pressure differential remains constant. Alicat's PCD series dual-valve pressure controllers use two proportional valves to precisely control the pressure of gases within dead-ended volumes.

(Pictured with remote display.)



Liquid Flow Meters and Controllers

L



Measure flow rate, line pressure and line temperature simultaneously, all in real time. Add an optional totalizer to track cumulative flow over time.

LC

Control liquid flow rates up to 10 lpm, or as low as 0.01 ccm, with the fastest control response available in a liquid flow controller.



LC



LCR

Stock Instrument Ranges

*[Instrument Type] — **[Stock Instrument Range]** — [Display Option] — [Communication Option] — [Valve Option] — [Build Option]*

The range specifies the size of the instrument flow body itself and the internal arrangement of the laminar flow elements. If a non-standard range is requested, the requested range should be notated as an adder code.

Instrument Type	Range Units	Stock Instrument Range	Notes
M Mass flow meter	#SCCM Standard Cubic Centimeters (cm^3) per Minute #SLPM Standard Liters Per Minute	0.5-500 SCCM 1-5000 SLPM (Whisper Series 0.5-500 SCCM 1-1000SLPM) 1000 SCCM = 1 SLPM M turndown ratio: 200:1 (S series 100:1)	Mass flow meter ranges are measured in mass units per unit of time: "standard" liters (l) and cubic centimeters (cm^3) per minute. Volumetric units become mass units for gases when they are standardized to a standard temperature and pressure (STP), 25^{O} C and 1 atm by default.
P Pressure gauge	#PSIG Pounds per Square Inch (Gauge) #PSIA Pounds per Square Inch (Absolute) #PSID Pounds per Square Inch (Differential)	2 inH2O, 1-500 PSIG 15-500 PSIA 2 inH2O, 1-100 PSID 1 atm = 0 PSIG = 14.696 PSIA P turndown ratio: 200:1	Alicat top-level pressure gauge ranges are measured in force units per unit of area: pound-force per square inch (PSI). **PSIG** is the measure of PSI relative to atmospheric pressure (1 atm = 0 PSIG). **PSIA** is the measure of PSI relative to a vacuum (0 atm = 0 PSIA). **PSID** is the measure of differential pressure, the difference in pressures between two places.
	EXTSEN External Pressure Sensor (unit will have no pressure sensor.)		Specify pressure range as an adder (RANGE:). Specify sensor input sensor as an adder (SENIN:).
L Liquid flow meter (volumetric)	#CCM Cubic Centimeters (cm^3) per Minute #LPM Liters Per Minute	0.5-500 CCM 1-10 LPM 1000 CCM = 1 LPM 1 cm^3 = 1 ml L turndown ratio: 50:1	Liquid flow meter ranges are measured in volumetric units per unit of time: liters (l) and cubic centimeters (cm^3) per minute.

Display Options

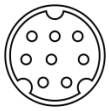
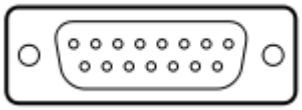
[Instrument Type] — [Stock Instrument Range] — **[Display Option]** *— [Communication Option] — [Valve Option] — [Build Option]*

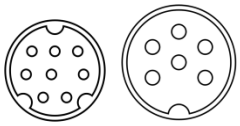
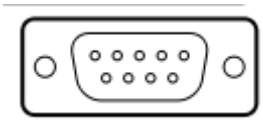
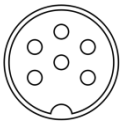
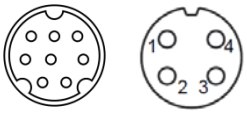
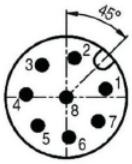
A display type is required for all Alicat part numbers. If no special request is made regarding a display, our integrated monochrome LCD (D) should be used in the part number.

Integrated Displays		Remote Displays	
D Monochrome LCD backlit digital display integrated in head assembly above flow body. This is the default type, but it must always be notated in the part number.		**RD** Monochrome LCD backlit digital display connected to flow body via shielded ribbon cable. Specify the cable length (max. 12') as an adder. Not available on X (ATEX/CSA approved).	
TFT Backlit color TFT digital display integrated in head assembly above flow body.		**TFTRD** Backlit color TFT digital display connected to flow body via shielded ribbon cable. Specify the cable length (max. 12') as an adder.	
O No display	Gas select and tare functions must be accessed remotely via computer.	**RD:#'(")** Cable length adder	*This is the final adder. *For –RD and -REMOTE units, specify each cable length. *Example:* REM: 3', RD: 8'

Communication Options

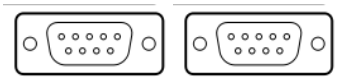
[Instrument Type] — [Stock Instrument Range] — [Display Option] — **[Communication Option]** *— [Valve Option] — [Build Option]*

DIN Connectors	Notes	D-Sub Connectors	Notes
[no notation **]** 8-pin mini-DIN and power jack 	This is the default connector.	**DB15** 15-pin D-Sub connector (male) and power jack, without mini-DIN 	Specify desired pin-out configuration: **DB15** – Alicat **DB15A** – Aalborg **DB15B** – Brooks **DB15O** – Brooks 2 **DB15H** – Hastings **DB15HD –** High Density *(different pinout)* **DB15K** – MKS **DB15S** – Sierra **DB15HDS** – Sierra

DIN Connectors	Notes	D-Sub Connectors	Notes
I 6-pin locking industrial connector next to 8-pin mini-DIN and power jack 	Secondary outputs not available.	**DB9** 9-pin D-Sub connector (female) and power jack, without mini-DIN (DB9M male 9-pin D-Sub available) 	Specify desired pin-out configuration: **DB9** – Alicat (female) **DB9A/DB9G** – Aera **DB9K –** MKS **DB9M** – Alicat (male) **DB9N** – Pneutronics **DB9T** – Tylan **DB9U** – Unit Instruments
IO 6-pin locking industrial connector only; no power jack or mini-DIN 	Secondary outputs not available.	**ISC** PC/PC3/PCD EXTSEN 4-pin locking industrial connector for pressure signal, next to 8-pin mini-DIN and power jack 	
M12 8-pin threaded M12 Connector 		**RJ45** RJ45 for RS-232 serial communications.  RJ45 Device	

Communications Protocols

[no notation] RS-232 communications standard	RS-232 is the default that comes standard on all Alicat devices.	**485** RS-485 communications standard, includes any connector in the price.	This code is added to the preceding connector code. *Example: DB9-485*

MODBUS	Over RS-232 or RS-485	**PROFIBUS** Process Field Bus PROFIBUS communications 	**Top:** 9-pin D-Sub connector, no mini-DIN or power jack. **Side**: 9-pin male D-Sub connector for power and RS-232 protocol.
EIP Ethernet/IP	Includes two RJ-45 connectors on top with green and amber status lights.	**ECAT** EtherCAT	Includes two RJ-45 connectors on top with green and amber status lights.
DNET 5-pin locking DeviceNet	M12 Micro Connector on top, no mini-DIN or power jack; 9-pin male D-Sub (DB9) connector on side for power and RS-232 protocol.		

Valve Options

(Controllers Only)

[Instrument Type] — [Stock Instrument Range] — [Display Option] — [Communication Option] — **[Valve Option]** *— [Build Option]*

[no notation **]** Default valve		**BV** Integrated bleed valve	0.5 SCCM up to 2 SLPM Whisper mass flow controllers only.
DS MC/PC Downstream valve position.	Stainless steel only valve upgrade for small Pneutronics valves Not compatible with P valves (MCP/PCP units). Standard in non-Rolamite LC units and S series.	**NO** Normally open valve.	
PCA# MC/PC/LC Custom orifice sizes for ASCO valves	**PCA10** – 0.0012 in. **PCA11** – 0.0020 in. **PCA12** – 0.0031 in. **PCA13** – 0.0079 in. **PCA14** – 0.0157 in. **PCA15** – 0.0315 in. **PCA16** – 0.0472 in. **PCA17** – 0.0551 in. **PCA18** – 0.0709 in.	**PCV#** MC/PC Custom orifice sizes for small Pneutronics valves.	**PCV03** – 0.003 in. **PCV10** – 0.010 in. **PCV30** – 0.030 in. **PCV50** – 0.050 in. **PCV65** – 0.065 in. **PCV90** – 0.090 in.

RV

Detached remote valve.

Valve assembly is not physically connected to flow body, allows for operation of the valve at a different point in the system

SV MC/PC

Stainless steel only valve upgrade for small Pneutronics valves

Not compatible with P valves (MCP/PCP units). Standard in non-Rolamite LC units and S series.

PAR

Rolamite valve parallel wound cable.

#X#

Rolamite valve hole pattern.

20x32
20x63
20x124
40x55
54x54
67x51 – Default size
67x86
128x27

Build Options

[Instrument Type] — [Stock Instrument Range] — [Display Option] — [Communication Option] — [Valve Option] — **[Build Option]**

All following part number codes are generally applied in the following grouped order: *build options – sensor options – flow body options – process connections (including flow body threading and vacuum component fittings) – elastomers - customization.* However, many variations exist. When building a part number for a complex unit, search through the calibration reports for the option code to determine its appropriate place in the part number before creating a NEWBOM request.

Build Options

IPC MC/PC/LC

Integrated Potentiometer Control

Allows set-point control of full analog input range via knob on top of unit.

For controllers only. This code usually appears at the end of a part number.



X

Conforms to CSA (Canadian Standards Association) Class 1 Division 2 and ATEX (ATmosphères EXplosives) Class 1 Zone 2 standards for use in hazardous environments.

Built with industrial connector but no power jack (IO) and separate ground (SG). Not compatible with TFT or remote displays (RD/TFTRD), or remote electronics (REMOTE).

*Cable not included.



Sensor Options

[no notation **]**

Standard sensor for mass flow devices.
M: All Sensors 160 PSIA
Whisper: 60 PSIA

30PSIA M/MC

30-PSIA pressure sensor option, improves resolution for low pressure applications. For mass (M) units only, ≤ 30 PSIA common mode feed pressure.

Flow Body Options

NESSI

NeSSI (New Sampling/Sensor Initiative) compatible flow body.

Available in 0.5SCCM – 10SLPM.

Not compatible with R-/H-/D- controllers.



AL(UMINUM)

Aluminum flow body (custom order).

Extends lead time.

Process Connections

DPORT

Down port connections.

TMDPORT

Top-mount down port connections.

Flow Body Threading

[no notation **]** **[NPT]**

Female NPT (National Pipe Thread) threading in flow body ports, Viton elastomers. This is the default threading for all units.

SAE

SAE (Society of Automotive Engineers) threading instead of NPT threading in the flow body ports.

#BSP

BSP (British Standard Pipe) threading instead of NPT threading in the flow body ports.

.375, .5, .75

#NPT

Non-standard NPT threads.

.125NPT

1/8" female NPT flow body threads, for units normally fitted with M-5 (10-32) female thread plus 1/8" NPT fittings (M≤50SCCM, L≤1CCM).

1.25[NPT]

1-1/4" female NPT threading option, replaces standard 3/4" NPT thread on M(C)-2000SLPM units.

(Standard on 3000SLPM units.)

Vacuum Component Fittings

#COMP

Welded compression fittings.

#VCRF

Female VCR (Vacuum Component, metal Ring) fittings, welded to flow body ports

.125VCRF

1/8" female VCR (0.5-50 SCCM)

#VCRM

Male VCR (Vacuum Component, metal Ring) fittings, welded to flow body ports

.25VCRM

1/4" male VCR (100 SCCM–20 SLPM)

-.5VCRM

1/2" male VCR (50-250 SLPM)

-1.0VCRM

1" male VCR (500-3000 SLPM)

#VCO

VCO (Vacuum Component, O-ring) fittings screwed into NPT or SAE threading

VCO

VCO fittings screwed into NPT or SAE threading

.25VCO

1.0VCO

Elastomers

VITON

Viton seals (gaskets and o-rings, Rolamite belt or Pneutronics valve seal), default option for most units.

FFKM

FFKM seals (gaskets and o-rings, Rolamite belt or Pneutronics valve seal), default for S-series units.

EPDM

EPDM seals (gaskets and o-rings, Rolamite belt; not available for Pneutronics valve seal).

SILICONE

Silicone Elastomers

Customizations

Remote Electronics

REMOTE M/MC/P/PC

Electronics head assembly connected to flow body via shielded cable, max 6' cable length. Not available on X (ATEX/CSA approved).

Allows temperatures to 85°C ambient and 100°C internally, not available for Liquid units.

*Specify the cable length (max. 6') as an adder (REMOTE: x').

RD

Remote display.

See example on page 19.

D-REMOTE

Monochrome LCD backlit digital display integrated in remote head assembly.

RD-REMOTE

Remote display connected via shielded ribbon cable to remote electronics casing.

Additional customizations	
IB	Integrated barometer and allows display and control in gauge pressure.
IP#	Available for >50 slpm flows, and no display. Ingress protection rating of IP65.
SG	Separate Ground: electronics ground is separated from the flow body.
CC Contamination-resistant acrylic Mil-Spec dielectric Conformal Coating of internal circuitry.	
SIL Silconert coating on flow body and elements. Does not coat the valve or sensor package.	Flow body and elements are coated with an inert silicon coating to prevent absorption of active compounds.
G	*Alicat* not named in on-board programming options or external labeling.
Specialty Units Units made with custom options or groups of options for specific companies.	Check the DOC-NOTES-[company] file for descriptions; do not add part number codes or adder codes for options included within the specialty part number.

Adder Codes

Analog Signals

The signal output and input adder codes are the first adders after the forward slash (/) in the Alicat part number. These signals are described in relation to the electrical ground, so a 0-5 V output is 0-5 V above the ground, where 5 V represents 100% signal strength. All meters and controllers must have at least one specified analog output (5M is default for M units, 5V for L units and 5P for P units). All controllers must have a specified analog input (5IN is default).

The order for the output and input adders is as follows:

.../ [Output 1], [Output 2], [Default Input], [Analog Input]

Example: ***/5M, 52V, LIN, 5IN***

Primary Analog Outputs (required)	Secondary Analog Outputs (optional)	Output Configurations
1x 1-5 V DC output	12x 1-5 V DC 2nd output	**1M (12M)** – Gas Mass Flow Output **1V (12V)** – Fluid Volumetric Flow Output **1P (12P)** – Pressure Output **1T (12T)** – Temperature Output
5x 0-5 V DC output	52x 0-5 V DC 2nd output	**5M (52M)** – Gas Mass Flow Output **5V (52V)** – Fluid Volumetric Flow Output **5P (52P)** – Pressure Output **5T (52T)** – Temperature Output
10x 0-10 V DC output	102x 0-10 V DC 2nd output	**10M (102M)** – Gas Mass Flow Output **10V (102V)** – Fluid Volumetric Flow Output **10P (102P)** – Pressure Output **10T (102T)** – Temperature Output
Cx 04-20 mA output, (true, not loop-powered)	C2x 04-20 mA 2nd output, (true, not loop-powered)	**CM (C2M)** – Gas Mass Flow Output **CV (C2V)** – Fluid Volumetric Flow Output **CP (C2P)** – Pressure Output **CT (C2T)** – Temperature Output

Analog Inputs

xIN

Setpoint input.

A note about input selection:
All controllers have three signal inputs available at any time: analog, serial (232 and 485) and on-screen. Choosing one of the four analog input options determines the build of the electronics package. Choosing RIN or LIN determines the default input setting when the unit is turned on.

Default Set-Point Input

Notes for RIN:
Must also specify an analog input, which follows RIN directly.
Example: 5M, RIN, 5IN

RIN
Serial digital input

Notes for LIN:
Must also specify an analog input, which follows LIN directly.
Example: 5M, LIN, 5IN

LIN
Local (onscreen) input

SENIN: PC only

External sensor input for EXTSEN units

Notes for SENIN:
Must specify a sensor input signal (0-5V, 0-10V or 4-20mA). This signal is a dedicated analog input signal for the external sensor reading only. You must still specify an analog input signal for the controller as a whole.
Example: CP, CIN, SENIN: 4-20mA

Primary Gas Selection

All gas units come with Alicat's Gas Select lineup of over 98 gases and gas mixtures. For every M or MC unit, you must specify the primary gas to be used with the unit, which will be the initial selection on power-up. Specify the primary gas according to this format: *GAS: [code]*.

Gas select menu is set to chosen primary gas when unit is shipped; unit does not reset to this gas if another gas has been selected prior to being power-cycled.

GAS: x

Pure Non-Corrosives	Pure Corrosives	Refrigerants	Welding Gases
C2H2 **Acetylene**	NH_3 **Ammonia**	R-11 **Trichlorofluoromethane**	C-2 2% CO_2 / 98% Ar
Air	1-Butene **Butylene**	R-115 **Chloropentafluoroethane**	C-8 8% CO_2 / 92% Ar
Ar **Argon**	c-Butene **Cis-Butene**	R-116 **Hexafluoroethane**	C-10 10% CO_2 / 90% Ar
iC4H10 **i-Butane**	i-Butene **Iso-Butene**	R-124 **Chlorotetrafluoroethane**	C-15 15% CO_2 / 85% Ar
n-C4H10 **n-Butane**	t-Butene **Trans-Butene**	R-125 **Pentafluoroethane**	C-20 20% CO_2 / 80% Ar
CO_2 **Carbon Dioxide**	COS **Carbonyl Sulfide**	R-134A **Tetrafluoroethane**	C-25 25% CO_2 / 75% Ar
CO **Carbon Monoxide**	Cl_2 **Chlorine**	R-14 **Tetrafluoromethane**	C-50 50% CO_2 / 50% Ar
D_2 **Deuterium**	CH_3OCH_3 **Dimethyl Ether**	R-142b **Chlorodifluoroethane**	C-75 75% CO_2 / 25% Ar
C_2H_6 **Ethane**	H_2S **Hydrogen Sulfide**	R-143a **Trifluoroethane**	He-25 25% He / 75% Ar
C_2H_4 **Ethylene (Ethene)**	NF_3 **Nitrogen Trifluoride**	R-152a **Difluoroethane**	He-50 50% He / 50% Ar
He **Helium**	NO **Nitric Oxide**	R-22 **Difluoromonochloromethane**	He-75 75% He / 25% Ar
H_2 **Hydrogen**	C_3H_6 **Propylene**	R-23 **Trifluoromethane**	He-90 90% He / 10% Ar
Kr **Krypton**	SiH_4 **Silane**	R-32 **Difluoromethane**	A1025 90% He / 7.5% Ar / 2.5% CO_2
CH_4 **Methane**	SO_2 **Sulfur Dioxide**	RC-318 **Octafluorocyclobutane**	Stargon CS 90% Ar / 8% CO_2 / 2% O_2
Ne **Neon**		R-404A 44% **R-125** / 4% R-134A / 52% **R-143A**	
N_2 **Nitrogen**		R-407C 23% **R-32** / 25% R-125 / 52% **R-134A**	
N_2O **Nitrous Oxide**		R-410A 50% **R-32** / 50% **R-125**	
O_2 **Oxygen**		R-507A 50% **R-125** / 50% **R-143A**	
C_3H_8 **Propane**			
SF_6 **Sulfur Hexafluoride**			
Xe **Xenon**			

Primary Gas Selection

BREATHING GASES	FUEL GASES	LASER GASES	O2 CONCENTRATOR GASES
EAN-32 32% O_2 / 68% N_2	Syn Gas-1 40% H_2 + 29% CO + 20% CO_2 + 11% CH_4	LG-4.5 4.5% CO_2 / 13.5% N_2 / 82% He	OCG-89 89% O_2 / 7% N_2 / 4% Ar
EAN 36% O_2 / 64% N_2	Syn Gas-2 64% H_2 + 28% CO + 1% CO2 + 7% CH_4	LG-6 6% CO_2 / 14% N_2 / 80% He	OCG-93 93% O_2 / 3% N_2 / 4% Ar
EAN-40 40% O_2 / 60% N_2	Syn Gas-3 70% H_2 + 4% CO + 25% CO_2 + 1% CH_4	LG-7 7% CO_2 / 14% N_2 / 79% He	OCG-95 95% O_2 / 1% N_2 / 4% Ar
HeOx-20 20% O_2 / 80% He	Syn Gas-4 83% H_2+ 14% CO+ 3% CH_4	LG-9 9% CO_2 / 15% N_2 / 76% He	
HeOx-21 21% O_2 / 79% He	Nat Gas-1 93% CH_4 / 3% C_2H_6 / 1% C3H8 / 2% N_2 / 1% CO_2	HeNe-9 9% Ne / 91% He	**STACK GASES**
HeOx-30 30% O_2 / 70% He	Nat Gas-2 95% CH_4 / 3% C2H6 / 1% N_2 / 1% CO_2	LG-9.4 9.4% CO_2 / 19.25% N_2 / 71.35% He	FG-1 2.5% O_2 / 10.8% CO_2 / 85.7% N_2 / 1% Ar
HeOx-40 40% O_2 / 60% He	Nat Gas-3 95.2% CH_4 / 2.5% C_2H_6 / 0.2% C_3H_8 / 0.1% C_4H_{10} / 1.3% N_2 / 0.7% CO_2		FG-2 2.9% O_2 / 14% CO_2 / 82.1% N_2 / 1% Ar
HeOx-50 50% O_2 / 50% He	Coal Gas 50% H_2 / 35% CH_4 / 10% CO / 5% C_2H_4	**CHROMATOGRAPHY GASES**	FG-3 3.7% O_2 / 15% CO_2 / 80.3% N_2 / 1% Ar
HeOx-60 60% O_2 / 40% He	Endo 75% H_2 + 25% N_2	P-5 5% CH_4 / 95% Ar	FG-4 7% O_2 / 12% CO_2 / 80% N_2 / 1% Ar
HeOx-80 80% O_2 / 20% He	HHO 66.67% H_2 / 33.33% O_2	P-10 10% CH_4 90% Ar	FG-5 10% O_2 / 9.5% CO_2 / 79.5% N_2 / 1% Ar
HeOx-99 99% O_2 / 1% He	HD-5 LPG 96.1% C_3H_8 / 1.5% C_2H_6 / 0.4% C_3H_6 / 1.9% n-C_4H_{10}		FG-6 13% O_2 / 7% CO_2 / 79% N_2 / 1% Ar
EA-40 Enriched Air-40% O_2	HD-10 LPG 85% C_3H_8 / 10% C_3H6 / 5% n-C_4H_{10}		
EA-60 Enriched Air-60% O_2			
EA-80 Enriched Air-80% O_2			
Metabol Metabolic Exhalant (16% O_2 / 78.04% N2 / 5% CO_2 / 0.96% Ar)			

Range Options

RANGE(x) Alternative full-scale range for the device.	Must specify units: *Example: RANGE(18 SCFH)* For pressure units with external pressure sensor (EXTSEN), use this to specify sensor pressure range.	May be used to: 1) Increase the actual range of a unit up to 28% (excluding over 5000 SLPM). 2) Decrease the actual range of a unit. 3) Change the units by which the range is measured. 4) Select multiple ranges.

Calibration Adders

Adder Code	Order Notes	Application Notes
STP:x Alternate Standard Temperature and Pressure for flow calibration.	Must specify units: *Example: STP 20°C and 1013 mbar*	Applies only to Standard units of measure.
NTP:x Alternate Normal Temperature and Pressure for flow calibration.	Must specify units: *Example: NTP: O°C and 1013 mbar*	Applies only to Normal units of measure.
BD M/P/L/PCD/MCD Bi-Directional analog output signal with +/- readings via display or RS-232, includes full scale calibration in both directions.	For meters, gauges, and dual-valve mass flow controllers and pressure controllers.	Analog signal: no flow (0) is in the middle of the output signal range; e.g. 2.5 V for 0-5 V DC output.
HC High-accuracy calibration.	Accuracy is (+/- 0.4% of reading +0.2% of full scale) **Standard calibration is +/-(0.8% of reading and + 0.2% full scale) ** Available on 5SCCM-500SLPM units.	Higher accuracy at standard calibration points: 25%, 50%, 75%, 100%. Not available for L/LC.
APC Absolute Pressure Calibration; mass flow units or -100PSIG liquid units only.	Accuracy is 0.25% of full scale.	Second calibration sheet for PSIA: barometer, 25%, 50%, 75%, 100%.
APHC High-accuracy Absolute Pressure Calibration; mass flow units or -100PSIG liquid units only.	Accuracy is 0.125% of full scale. *Recommended for flow meters < 4 PSIA	Second calibration sheet for PSIA: barometer, 25%, 50%, 75%, 100%.

Adder Code	Order Notes	Application Notes
CPNT(x,y,z) Additional calibration points	Must specify units or percentage: *Example:* *CPNT (5, 10, 15%)*	Adds additional calibration points to the standard 4 points: 25%, 50%, 25%, 100%.
RTL Right to left flow calibration	Changes default flow direction from left → right to right ← left.	For mass flow devices only.
P1:x, P2:x Calibration pressures	Custom calibration pressures for mass flow, liquid, and pressure controllers.	Example: P1: 100 PSIG, P2: 50 PSIG
LIQUID:x Custom liquid calibration	For liquid and pressure series only. If not specified on a liquid flow device, the device will be calibrated for water by default. Must specify on a pressure unit to ensure compatibility (water included).	L/LC with on-water applications. P/PC with any liquid applications.
RCPNT (x,y,z) Replacement calibration points	Must specify units or percentage. Please specify at least 5 including a 0 for best result. *Example RCPT(0, 5, 10, 12.5 SLPM)*	Replaces traditional calibration points and only includes those specified.
Non-Calibration Adder Codes		
DS MC/PC Downstream valve position; controllers only (default for LC units)	Default on MCEs, MCVs and some high flow instruments. PCR's and NESSI bodies require this in the top level part number instead.	For MCs, typically used in vacuum applications to reference the inlet pressure for mass flow calculations. For PCs, changes the device to a back pressure controller.
ID: # RS-232/485 unit address	Specify ID A-Z for serial communication.	Factory preset of unit ID for convenience.
BAUD: # Baud rate	Available for RS485, RS232, Modbus RTU or DNET communication. Typical configurations include 9600 and 38400.	Factory preset of baud rate for convenience.

Adder Codes	Order Notes	Application Notes
VOL: Expected closed volume	For PCDs and any MCDs controlling pressure in closed system. Must be used in combination with P1/P2. Must specify units. *Example:* *VOL: 1 L*	For controlling pressure in a closed volume.
OPL **OPLG** **OPL(CA)** Over pressure limit	Must specify units Example OPL: 10 Bar	OPL will close the valve after exceeding the specified absolute pressure. (Use OPLG for gauge pressure). The valve will remain closed until the alarm is canceled by the user. OPL(CA) is similar to OPL with added functionality of automatically resuming active control.
PD (p,d) Custom PD valve tuning	Available for any single valve controller. If not specified, Alicat will custom tune each device.	Factory preset of P and D values for PID control for convenience.
PD2I (p,d,i) Custom PD2I valve tuning	Available for any controller (single or dual valve). If not specified, Alicat will custom tune each device.	Factory preset of P, D and I values for PD2I control for convenience.
POP Power over PROFIBUS	By default power will be available on the side port only.	Enables power through the PROFIBUS connector on the top.
PROFIBUS: # PROFIBUS unit address	Please specify address 1-125.	Factory preset of PROFIBUS address for convenience.
SR # Streaming rate in milliseconds	If not specified, devices will ship with a streaming rate of 50ms Must specify in ms.	Factory preset of streaming rate address for convenience.

Certification

17025HF

17025 (L.A.B.) high-flow certification
*Adds 10 business days to lead time.

17025LF

17025 (L.A.B.) low-flow certification.
*Adds 10 business days to lead time.

OXC

Oxygen (O2) Cleaning certification
*Adds 15 business days to lead time.

OXC EXP FEE

Oxygen (O2) Cleaning certification.
Expedited O2 cleaning adds 5 days to lead time.

Alarms and Totalizers

Alarm Options

ALLx:y M/P/L

Low Alarm, sends output signal when flow falls below user-defined alarm setting; meters and gauges only.

ALL5: 5 V DC output
ALL12: 12 V DC output
ALL24: 24 V DC output
ALLOD: 500 mA open drain
*Cannot also have Pulse or 2nd Output

ALHx:y M/P/L

High Alarm, sends output signal when flow rises above user-defined alarm setting; meters and gauges only.

ALH5: 5 V DC output
ALH12: 12 V DC output
ALH24: 24 V DC output
ALHOD: 500 mA open drain
*Cannot also have Pulse or 2nd Output

Totalizer Options

PUL:x M/MC/L/LC

Pulse: simplified totalizer function

Pulses output signal between no signal and full signal each time half of specified flow passes through the unit. Specify pulse flow cycle amount:
Example: PUL: 5 SCC
*Cannot also have Alarm or 2nd Output

TOT(x,y, R/F/E)

Integrated flow totalizer

M/MC/L/LC
Totalizer function with 7-digit counter for measuring cumulative flow.
Example: TOT (99999.99 SCC, R, E)
*Specify count resolution up to 4 decimals.

Rollover options (when max count is reached):
N, E: No Rollover, Alarm
R: Rollover, no Alarm
R, E: Rollover, Alarm
F: Freezes and flashes OVR error at mass count
*No rollover: counter stops counting.
*Rollover: counter restarts counting from zero.

TOTAVG

Totalizer averaging.

TOTBD#

Bi-Directional totalizer function with 7-digit counter for measuring cumulative flow.
Example: TOTBD2 (99999.99 SCC, R, E)
*Specify count resolution up to 4 decimals.

TOTBD1 (x): Neg. values subtract from total.
TOTBD2 (x): Neg. values subtract from total, zero floor.
TOTBD3 (x): Neg. values ignored.
TOTBD4 (x): Neg. values reset totalizer to 0.

Loop Adders

CLP MC

Closed-loop pressure: sets control loop to absolute pressure.

For customers who want to control pressure instead of mass flow.

CLV MC

Closed-Loop Volumetric: sets control loop to volumetric flow.

For customers who want to control volumetric flow instead of mass flow.

CLPG MC

Closed-loop pressure: sets control loop to gauge pressure.

For customers who want to control pressure instead of mass flow.

Calculation Adders

MAXAVG

Geometric running averaging set to highest level (5 sec), lessens volatility of measurements; option is user-selectable.

DB:#

Unit shipped with no dead band set for the device. Dead band is range below the bottom of the turn-down ratio (0.5% of full scale).

AVG OFF

When there is no average used.

EPROM Adders

EPROM adders all move certain pieces of information from EPROM memory, which retains the specified settings, to RAM memory, which is emptied when the device is turned off.

PUSP:#

MC/PC/LC

Power-Up Set-Point:
Device powers up to same set-point every time.
Example: PUSP: 5 SLPM
*Must specify set-point

PUT:#

Not for PC-*x*PSID

Power-Up Tare:
Device delays auto-tare by same amount every time.
Example: PUT: 5 sec
*Must specify delay time (0.1-25.4 seconds).

PUGS:x

M/MC

Power-Up Gas Select:
Device powers up to same gas selection every time.
Example: PUGS: H2
*Must specify primary gas.

PU:x

Power-Up Display Reading:
Selects parameter at power up every time. Mass Flow (M), Volumetric (V), Temperature (T), Pressure (P).

Legacy Part Numbers and Adder Codes

MLD-

Low pressure drop mass flow device. Whisper series replaced this.

ROHS

RoHS compliant device. All Alicat products are not RoHS2 compliant.

LRV

Old Large Rolamite Valve part format.
Includes: -LRV, -HRV, -MPD, -LPD, -ERV, -TDR

EPOLISH

Electropolished unit.

100PSIG

Options 100 PSIG sensor for liquid units. All liquid units are now equipped with a pressure sensor.

.288

.288" flow body used in the MC-30SLPM model.

FR

A mass, liquid, or pressure controller tuned for the fastest response using the PID terms.

SSP

Optional stainless steel sensor for pressure controllers.

Accessories

Power Supplies

Universal Power Supplies

PVPS24U

The **PVPS24U** is a variable power supply that accepts 100-240 Vac at 50-60 Hz and delivers 24 Vdc at 1.0 amp. It plugs into a barrel-type power jack and includes four interchangeable prong configurations for easy access to power outlets around the world. The PVPS24U is also compatible with our BB3 and BB9 multi-drop breakout boxes. With a maximum output of 1.0 amp (1000 mA), a single PVPS24U can power as many as 25 meters or 6 non-Rolamite controllers when connected together.

PVPS5USBU

The **PVPS5USBU** is a variable power supply that accepts 100-240 Vac at 50-60 Hz and delivers 24 Vdc at 2.0 amps. It plugs into a micro-USB power jack and includes four interchangeable prong configurations for easy access to power outlets around the world.

High-Current Power Supply

PS24VHC

The PS24VHC is an excellent power supply solution for instrument installations that require higher total current output than what the PVPS24U provides. It is well-suited for permanent installations of our instruments, or for powering large controllers connected to a BB3 or BB9 multi-drop breakout box. The PS24VHC accepts 100-120 Vac and 200-240 Vac at 50-60 Hz and delivers 24 Vdc at 6.5 amps.

Legacy Accessories

LSPM

Local set-point module, includes DC-62 (Not compatible with DC62RS or DC32RS).
Replaced by IPC

BPACK

9Volt battery pack for portable use.
Replaced by xB series.

Industrial Carrying Cases

Industrial carrying cases are watertight (IP67), dust tight and crush proof.

PCASE

Generic industrial carrying case.

- Includes pick-and-pluck foam for easy personalization.



SCASE

Industrial carrying case for FP-25 only.

- Includes custom foam inserts for FP-25 and its accessories.



Filters, Fittings and Adaptors

For flow body process connections.

Swagelok Adapters	#10-32 UNF	1/8" MNPT	1/4" MNPT	1/2" MNPT	3/4" MNPT
1/8"	SS-200-1-0157	SS-200-1-2	SS-200-1-4	SS-200-1-8	-
1/4"	SS-400-1-0256	SS-400-1-2	SS-400-1-4	SS-400-1-8	SS-400-1-12
3/8"	-	SS-600-1-2	SS-600-1-4	SS-600-1-8	-
1/2"	-	SS-810-1-2	SS-810-1-4	SS-810-1-8	SS-810-1-12
3/4"	-	-	-	SS-1210-1-8	SS-1210-1-12
3mm	-	SS-3M0-1-2	SS-3M0-1-4	-	-
4mm	-	SS-4M0-1-2	SS-4M0-1-4	-	-
6mm	-	SS-6M0-1-2	SS-6M0-1-4	SS-6M0-1-8	-
8mm	-	SS-8M0-1-2	SS-8M0-1-4	SS-8M0-1-8	-
12mm	-	SS-12M0-1-2	SS-12M0-1-4	SS-12M0-1-8	SS-12M0-1-12
16mm	-	-	-	SS-16M0-1-8	SS-16M0-1-12

NPT Adapter:	#10-32 Male UNF to 1/8" Female NPT (replacement adapter for 10-32/M5 flow bodies)	**410133**

Filters:	5µ: **510053** 20µ: **510054**	20µ: **ILF-1/8-20**	40µ: **ILF-1/4-40**	40µ: **ILF-1/2-40**	40µ: **ILF-3/4-40**
Elements:	#10-32 elements not replaceable	20µ: **ILFE20**	40µ: **ILFE40**	Large 40µ: **ILFE40L**	

Cables

Alicat Scientific offers many cable types and lengths to connect your mass flow meter, pressure gauge or controller to a computer or programmable logic controller (PLC). Many cables are available in both single-ended and double-ended variations. Custom cable lengths are available for all single-ended cables.

8-pin mini-DIN cables (DC series)

Wire colors for 8-pin mini-DIN cables are labeled according to our standard 8-pin mini-DIN pinout:

Black – primary 4-20 mA current analog output
Brown – secondary analog output (if used, DC only)
Red – RS-232 digital serial input
Orange – setpoint input or remote tare (via grounding)
Yellow – RS-232 digital serial output
Green – primary 0-5, 1-5 or 0-10 volt DC analog output
Blue – DC power input
Purple/White – ground

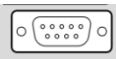
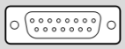
 **8-pin mini-DIN**	6 feet	25 feet	50 feet	75 feet	100 feet
Single-ended Male:Blunt	**DC-61**	**DC-251**	**DC-501**	**DC-751**	**DC-1001**
Double-ended Male:Male	**DC-62**	**DC-252**	**DC-502**	**-** DC-751+$10	**-** DC-1001+$10

6-pin locking industrial cables (IC series)
Wire colors for 6-pin locking industrial cables are labeled according to our standard 6-pin industrial pinout:

Black – ground
Brown – primary DC voltage or 4-20 mA current analog output
Red – DC power input
Green – setpoint input or remote tare (via grounding)
Blue – RS-232 digital serial output
White – RS-232 digital serial input

 **6-pin Industrial**	10 feet	20 feet	50 feet
Single-ended Male:Blunt	**IC-10**	**IC-20**	**IC-50**
Double-ended Male:Male	**IC-102**	**-** IC-20+$10	**-** IC-50+$10

9-pin and 15-pin D-sub cables (DB series) and Conversion cables

 **9-pin D-sub (DB9)**	 **15-pin D-sub (DB15)**	**Converters**
510199 Double-ended DB9 Female:Female (3m)	**510368** Double-ended DB15 Female:Female (15ft)	**MD8DB9** 8-pin mini-DIN Male to 9-pin D-sub Female (6ft)
DB9MDB9F Double-ended DB9 Male:Female (3m)	**DBC-251** Single-ended DB15 Female:Blunt (25ft)	**USB-MD8-232, USB-MD8-485** 8-pin mini-DIN Male to USB (6ft)

Note: Alicat instruments equipped with 9-pin D-sub connectors do not have the same pinouts as common serial cables. Proper connection to computer serial ports is accomplished via our MD8DB9 8-pin mini-DIN to serial adapter cable.

Multi-Drop Breakout Boxes

Alicat's BB3 and BB9 multi-drop breakout boxes make building your own local flow control network easy. Control up to 9 Alicat flow or pressure instruments from a single computer or programmable logic controller (PLC) connection. Breakout boxes also distribute power to all connected devices from a single power source. Each BB3 and BB9 is built into a light, yet rugged, composite chassis that can be mounted in any orientation via 3/16" diameter mounting holes.

- Compatible with instruments that have 8-pin mini-DIN or 6-pin locking industrial connectors.
- Communicate with all devices digitally via a single USB or serial cable.
- Distribute power to all devices with a single power source.
- Multiple breakout boxes can be daisy-chained to control up to 26 instruments.



BB9-232



BB3-232

Multi-drop breakout boxes

BB9-232	For Alicat instruments equipped with our standard 8-pin mini-DIN connector. Use double-ended DC-62RS cables to connect your instruments to the BB9.
BB9-I-232	For Alicat instruments equipped with our 6-pin locking industrial connector. Use double-ended IC102 cables to connect your instruments to the BB9.
BB9-485	For Alicat instruments equipped with our standard 8-pin mini-DIN connector. Use double-ended DC-62RS cables to connect your instruments to the BB9.
BB9-I-485	For Alicat instruments equipped with our 6-pin locking industrial connector. Use double-ended IC102 cables to connect your instruments to the BB9.
BB3-232	For Alicat instruments equipped with our standard 8-pin mini-DIN connector. Use double-ended DC-62RS cables to connect your instruments to the BB3.
BB3-I-232	For Alicat instruments equipped with our 6-pin locking industrial connector. Use double-ended IC102 cables to connect your instruments to the BB3.
BB3-232-KIT	Includes the BB3-232 breakout box plus three 6-foot 8-pin mini-DIN cables for digital communications and power.
BB3-I-232- KIT	Includes the BB3-I-232 breakout box plus three 6-foot 6-pin locking industrial cables for digital communications and power.

Software

System Requirements

- Microsoft Windows 7, Windows 8/8.1, Windows 10
- Microsoft .NET Framework
- 18 MB hard disk space

LabVIEW

LabVIEW is a software program developed by National Instruments for the monitoring and control of instruments in engineering and research applications. Alicat has developed several virtual instrument (VI) drivers for easy integration of our flow and pressure instruments with LabVIEW.

If you do not have LabVIEW, you can download a stand-alone interface that runs on the free LabVIEW 2014 Run-Time Engine. This interface is also available without the Run-Time Engine if you have it installed already.

Flow Vision SC™

Flow Vision SC™ manages up to 26 Alicat flow and pressure instruments at a time to help you create your own local network. The program interfaces with either RS-232 (Alicat's default protocol) or RS-485 communications protocols. The Graphical User Interface (GUI) in Flow Vision SC provides:

- automatic configuration
- session saving for easy configuration and experiment setup reloads
- data capturing and logging (including a graphing tool)
- simple and advanced script building for automating meter and control command sequences
- software alarms
- support for multiple devices

Flow Vision SC™ also provides easy access to the gas calibration selector, address assignment to individual devices and PID loop tuning. Adjustments to the PID control loop can increase speed of response and stability for your application.

Flow Vision MX™

Flow Vision MX is a low-cost option for setting up a basic gas-mixing station. It allows users to easily configure up to six mass flow controllers. Within Flow Vision MX™, you can save individual mixtures for easy loading, log your data to review mixture accuracy and performance and adjust the total mixture percentage or the percentage of a single controller or multiple controllers.

Note: We can offer a 30 day free demo version of Flow Vision SC™ but not Flow Vision MX™.

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