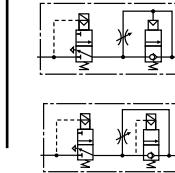


PRESENTATION

- This unit provides two main functions:
 - Pneumatic system venting.
 - Gradual pressurisation after an outage leading to venting of the system.
- This product allows for machines and installations to conform to the European Directives.



OPERATING PRINCIPLE

■ SHUT-OFF VALVE

The 3/2 NC shut-off valve, controlled by a solenoid valve of the CNOMO pad-mounting type, vents the system by de-energising the solenoid valve.

■ SOFT-START DEVICE

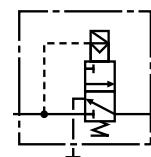
Upon pressurisation, when the soft-start device is in its initial position, an adjustable air flow ensures gradual filling of the downstream circuit, so that the actuators move slowly. The transition to the full flow position depends on which of the following soft-start devices is chosen:

• AUTOMATIC SOFT-START DEVICE (Modulair 107-112)

Automatic switch-over to the full flow position as soon as the downstream pressure reaches 60 to 70% of the supplied pressure (upstream pressure). Operating cycles take place at normal speed thereafter.

The soft-start device remains in the full flow position as long as the upstream pressure is maintained.

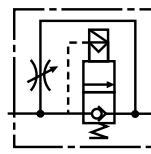
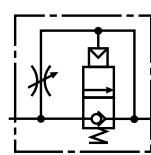
The device returns into its initial position when the air supply is cut off.



• SOLENOID/AIR CONTROLLED SOFT-START DEVICE (Modulair 112)

This device, which complies to technical CNOMO specifications (E05.03.135.N), can be used to gradually feed air into the system whenever restarting after a shutdown or pressure cut-off. The system is slowly returned into the end-of-cycle position. As soon as this condition is reached, the solenoid pilot valve is energised in accordance with the automatic control **specified by the user**. The soft-start device then switches to the full-flow position allowing the subsequent operating cycles to take place at normal speed.

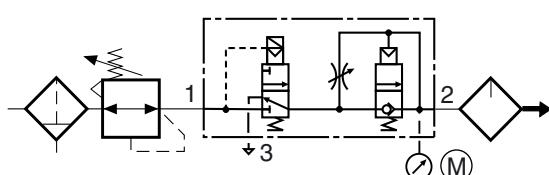
The solenoid pilot valve must be kept energised under normal operating conditions. Any de-energisation of the solenoid pilot valve sets the soft-start device into the low-flow position.



Note: In both soft-start device versions, the filling rate, i.e. the pressure build-up in the downstream circuit, is adjusted by means of a fine-thread screw with can be locked to prevent unauthorised adjustment of regulated pressure.

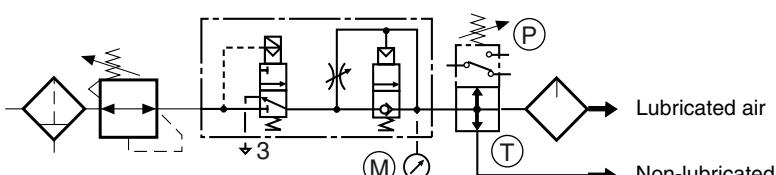
MOUNTING AND OPERATING RECOMMENDATIONS

- The shut-off and soft-start valve unit must be mounted first in the pneumatic system, **after** the filter, filter/regulator or filter + regulator and **before** any lubricator (see examples below). The standard assembly kit (see accessories) enables direct connection of the unit to a FRL system of the MODULAIR type 107 or 112.



(M) Matching pressure gauge for monitoring downstream pressure build-up (see accessories).

A pressure gauge can also be mounted at the outlet of the shut-off valve.



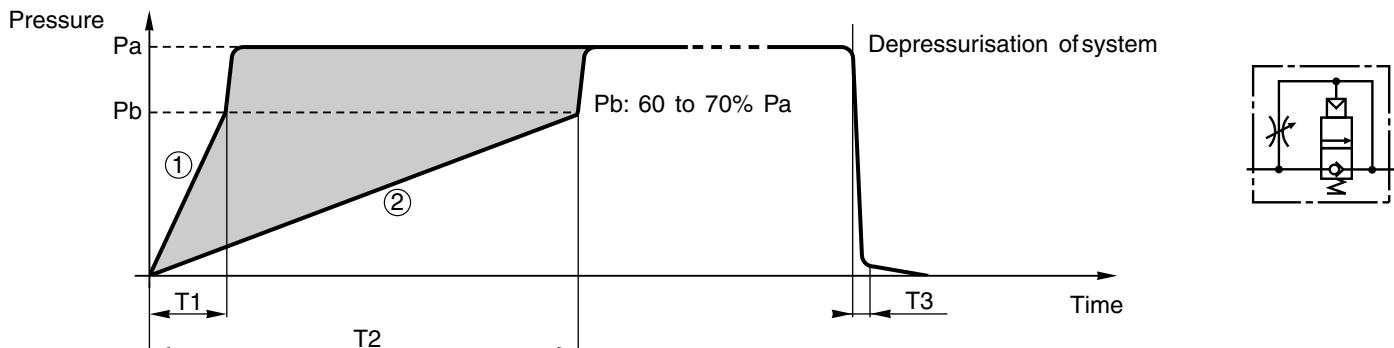
(P) Matching pressure switch

(T) By-pass module

- **Do not obstruct exhaust port 3.** It is recommended to mount an exhaust silencer (available as accessory, see page 38).
- **The shut-off valve must only be de-energised in case of need** when the system is generally shutdown or in case of power supply failure.
- For systems which are operated only infrequently, **the correct functioning of the shut-off and soft start valve unit must be regularly checked - at least once per month -** (full exhaust and gradual pressurisation of the system).

SYSTEM PRESSURISATION AND DEPRESSURISATION CURVES

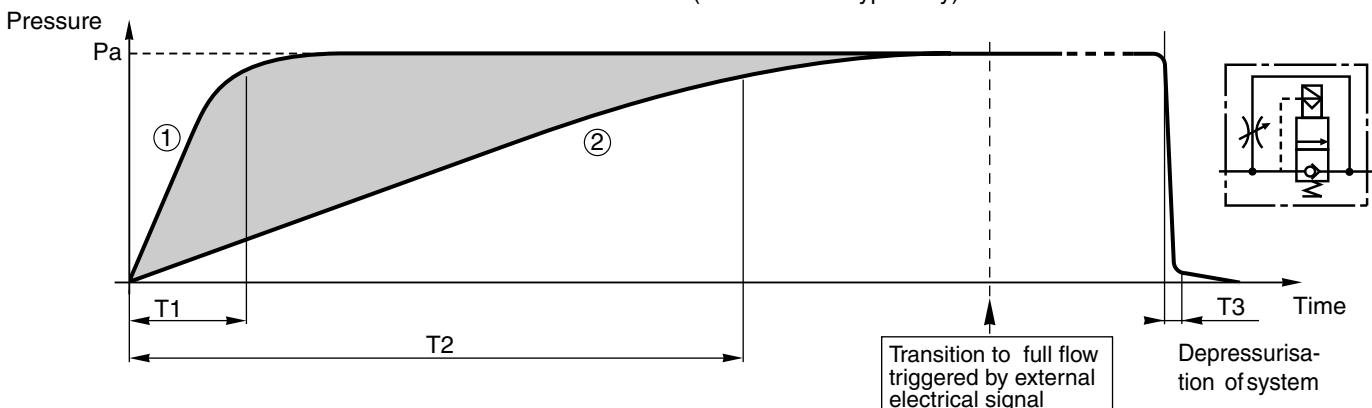
- WITH AUTOMATIC SOFT-START DEVICE



	Modulair 107	Modulair 112
T1 (with screw loosened by 6 turns).	11,5	8
T2 (with screw loosened by 1 turn).	250	75
T3 (venting time)	6,5	2

These times correspond to a supply pressure (Pa) of 6.3 bar, a transition pressure (Pb) of 60% to 70% Pa (not adjustable) and a downstream system capacity of **10 litres**

- WITH A SOLENOID/AIR CONTROLLED SOFT-START DEVICE (Modulair 112 type only)

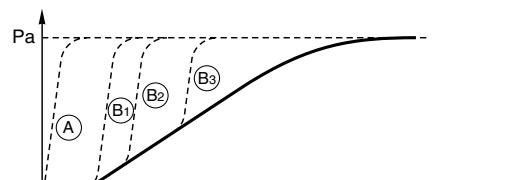


	Modulair 112
T1 (with screw loosened by 6 turns)	12
T2 (with screw loosened by 1 turn)	110
T3 (venting time)	2

These times correspond to a supply pressure (Pa) of 6.3 bar, a downstream system capacity of **10 litres** and a pressure of 90% Pa.

The full flow position is determined by the solenoid pilot valve which must be energised after checking that all the end-of-cycle sensors are activated. It also enables fast initiation of pressurisation if an emergency shutdown occurs at end of cycle (see curve A) or near end of cycle (see curves B₁, B₂, B₃, etc.)

Minimum pressurisation time (curve A): 1s with an upstream pressure of 6.3bar and a capacity of 10 litres.



— : curve for pressurisation of downstream system via jet (soft-start device in inactive position)

The solenoid/air controlled soft-start device also enables:

- Full flow operation in an "automatic" mode and slow speed operation in an "adjustment" mode for step-by-step manual setup.
- On returning to the "automatic" mode, carrying out one or more cycles at low speed (while the solenoid pilot valve is not energised).

SPECIFICATIONS

	MODULAIR 107	MODULAIR 112
FLUID PORTS	: air filtered 25 µm, non-lubricated	: air filtered 25 µm, non-lubricated
OPERATING PRESSURE	: G 1/8 - G 1/4	: G 1/4 - G 3/8 - G 1/2
MAX. FLOW (at 6.3 bar)	: 2.5 to 10 bar	: 3 to 10 bar
AMBIENT TEMPERATURE	: 1000 l/min (G1/8-G1/4)	: 1800 l/min (G1/4) : 2700 l/min (G3/8-G3/4)
		: 0°C to + 50°C

CONSTRUCTION

VALVE AND SOFT-START DEVICE

Metal body

Internal parts: brass and acetal resin (POM), nitrile seals (NBR)

Steel micrometric screw and locking pin of steel

Air flow direction indicated by arrow

PILOT SOLENOID VALVE CONSTRUCTION

Series 302

Body	: filled 6/6 polyamide (PA)
Seals	: nitrile (NBR)
Electric equipment standards	: NF C 79300
Coil and magnetic circuit	: moulded monobloc type
Exhaust connection	: not collectable
Connector	: size 15
Protection class	: IP65

Series 189/190

filled 6/6 polyamide (PA)
nitrile (NBR)
NF C 79300
moulded monobloc type
M5 (+ drain protector - 190)
size 22 (189) - 30 (190)
IP65

Series 192

filled polyarylamide (PAM)
nitrile (NBR) and polyurethane (PUR)
NF C 79300
moulded monobloc type
G 1/8 (+ drain protector)
size 30
IP65

ELECTRICAL CHARACTERISTICS

CNOMO mating surface	valve serial No.	Modulair 107 112	voltage	consumption inrush	consumption holding	insulation class	connection
Size 15 (E06.36.120N)	302	●	~ 24 V, 115 V, 230 V - 50/60 Hz = 24 V	2,6 VA (2 W) 1 W		F	Spade plug size 15 connector, DIN43650, 9,4 mm, industry standard B, rotatable by 90°
	189	● ●	~ 24 V, 115 V, 230 V - 50 Hz = 24 V	6 VA 2,5 W	3,5 VA (2,5 W)	F	Spade plug size 22 connector, DIN43650, 11 mm, industry standard B, rotatable by 180°
Size 30 (E06.05.80)	190 ⁽¹⁾	● ●	~ 24 V, 48 V, 115 V, 230 V - 50 Hz = 12 V, 24 V, 48 V, 110 V	9 VA 3 W	4 VA (3 W)	F	Spade plug size 30 connector, ISO4400/EN175301-803, form A, rotatable by 90°
	192	●	~ 24 V, 115 V, 230 V - 50 Hz = 24 V	12 VA 5 W	6 VA (4 W)	F	

(1) The type 190 solenoid valve is dual voltage: (24 V~, 12 V)=(48 V~, 24 V)=(115 V~, 48 V)=(230 V~, 110 V=). Other voltage and 60Hz frequency, consult us.

CHOICE OF COMPOSITION (Shut-off valve + soft-start units)

Products can be ordered separately (see page 41)

fonction symbol	description	MODULAIR type	CNOMO pilot	Ø port ^t	2 codes ⁽²⁾ for ordering	
					shut-off valve + soft-start units	+ series 302,189,190 or 192 (M) solenoid valve ~ / =
107	3/2 NC shut-off valve and automatic NC 2/2 soft-start device (without silencer)	107	size G 1/8 15 size G 1/4	34394013 34394014	+ 1 x { 30211112-A (~) ▼	30211112-D (=) ▼
				34394005 34394006	+ 1 x { 18900007 19000005 19000017	19000017 ▼
		112	size G 1/4 size G 3/8 size G 1/2 size G 3/4 (3)	34393107 34393108 34393109 34393204	+ 1 x { 18900007 19000005 19000017 19201007 19201009	19000005 ▼ 19201007 ▼ 19201009 ▼
				34393200		
112	3/2 NC shut-off valve and solenoid/air operated NC 2/2 soft-start device (without silencer)	112	size G 1/4 size G 3/8 size G 1/2 size G 3/4 (3)	34393110 34393111 34393112 34393206	+ 2 x { 18900007 19000005 19000017 19201007 19201009	19000005 ▼ 19201007 ▼ 19201009 ▼
				34393200		

(2) The unit (shut-off valve + soft-start device) and the solenoid valve(s) are ordered separately stating the quantity and code of each component. The solenoid valves are not supplied pre-installed on the system.

(M) Manual operator X : none ▼ : impulse. **Do not use locking manual operator**NOTE: These products can be **pneumatically piloted** in which case it is necessary to separately order the pneumatic connection flange(s) (G1/8), code 881 26 401 instead of the above solenoid valves

(3) Version intended for the combination of various functions (FRL - isolation valve etc ...), select the desired functions and obtain the necessary assembly kits and mounting brackets (see page 42)

accessories	Modulair 107	code	Modulair 112
Assembly kit for connection to FRL	34304001		34303001
Set of 2 side mounting brackets	34304003		34303003
Pressure gauge 0-12 bar (Mod. 107: Ø40 mm - Mod. 112: Ø50 mm)	34300041		34200062
Sintered bronze silencer (to be placed under the shut-off valve)	34600002		34600004
Porous plastic silencer (to be placed under the shut-off valve)	34600407		34600409

OPTION

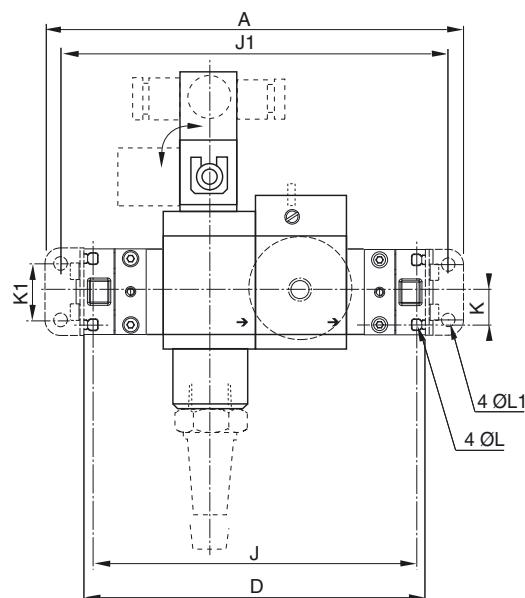
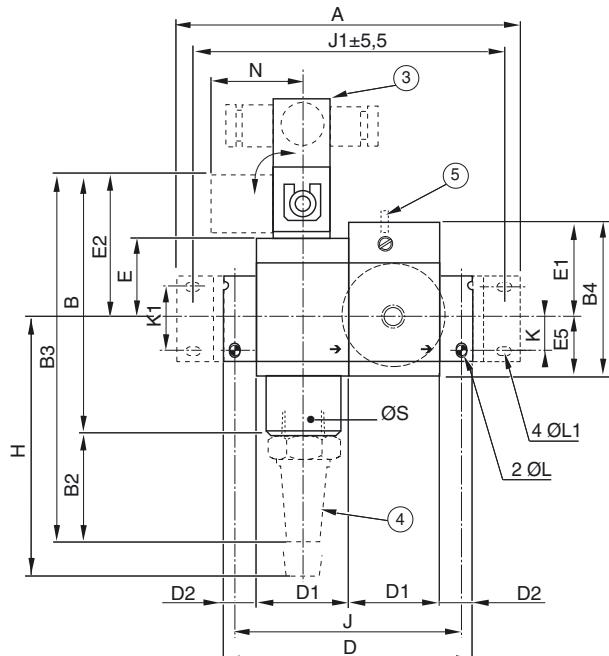
- For equipment and pilot valves intended for use in potentially **explosive atmospheres**, caused by gases or dusts, in accordance with ATEX Directive 94/9/EC, consult our ATEX - X019 catalogue



SHUT-OFF VALVE + AUTOMATIC SOFT-START DEVICE (MODULAR 107 and 112)

G1/8 to G1/2

G3/4



Note: Solenoid valve coils and connectors rotatable by 90° and 180° increments

- connector size 15 - series 302 pilot
- connector size 22 - series 189 pilot
- connector size 30 - series 190 or 192 pilot

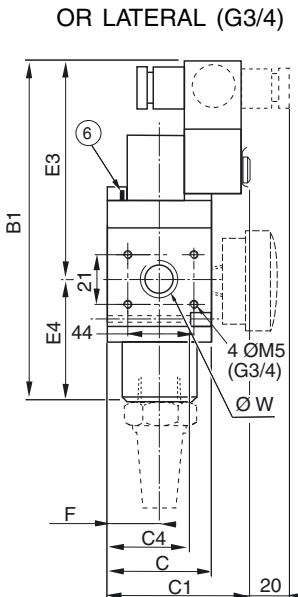
Modular range		
107	112	112
G1/8	G1/4	
Ø W	G1/4	G3/8
		G1/2
A	125	171
B	122	140,5 (146,5)
B1	173 [147]	182,5 (179,5)
B2	34	56
B3	158	196,5 (202,5)
B4	71	80
C	42	55
C1	74 [54]	73 (100)
C2	93 [73]	92 (119)
C4	38	47,5
D	84	125
D1	-	46
D2	-	16,5
E	45 [55]	41
E1	45	49
E2	75	73 (79)
E3	126 [100]	115 (112)
E4	47	67,5
E5	26	31
F	21	27,5
F1	40	46
H	89	135,5
J	74	116
J1	110,5	155
K	10	17
K1	28	33,5
Ø L	4,1	5,5
ØL1	4,5	5,5
M	3	4
N	57 [37]	57 (56)
ØS	G1/4	G1/2
Weight	0,800	1,400
(kg)	[0,670]	(1,550)
		(1,880)

Standard weights and dimensions correspond to a series 190 solenoid valve.

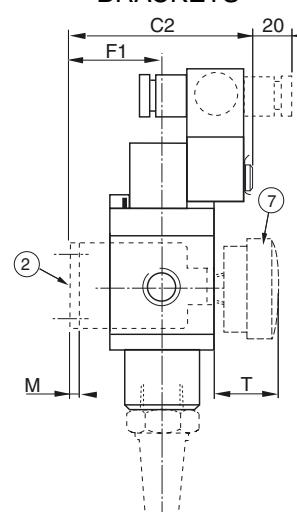
[] : dimensions and weight with series 302 solenoid valve

() : dimensions and weight with series 192 solenoid valve

DIRECT FRONTAL
MOUNTING ①
OR LATERAL (G3/4)



MOUNTING WITH
BRACKETS



① Direct frontal mounting (G1/8 - G1/2) : 2 holes ØL and depth C4

② Mounting with 2 side brackets (accessory)

③ Pilot (supplied separately): série 302,189 or 190 (Mod. 107) - série 189,190 or 192 (Mod. 112)

④ Matching silencer (accessory)

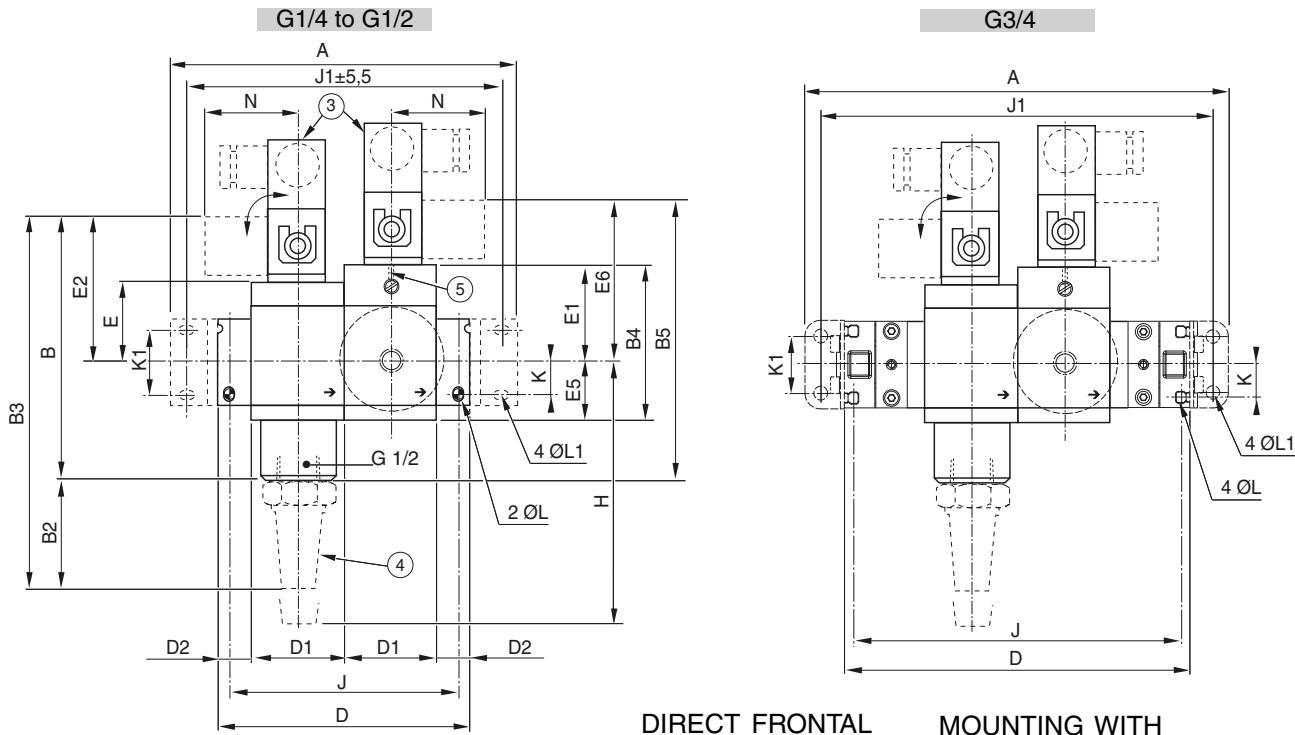
⑤ Adjustment locking pin

⑥ Solenoid valve installation polariser

⑦ Pressure gauge or electronic pressure switch on front of soft-start device or shut-off valve.
(dimension T : gauge = 34 ; pressure switch = 50)



SHUT-OFF VALVE + SOLENOID/AIR CONTROLLED SOFT-START DEVICE (MODULAIR 112)

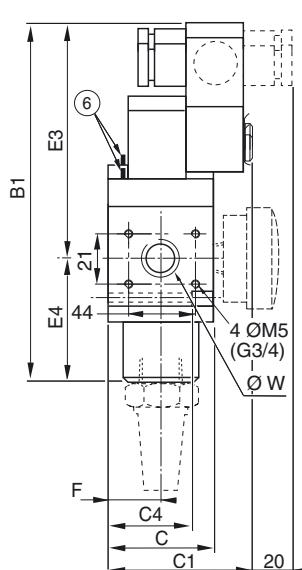


Note: Solenoid valves and connectors rotatable by 90° increments, size 30 connector

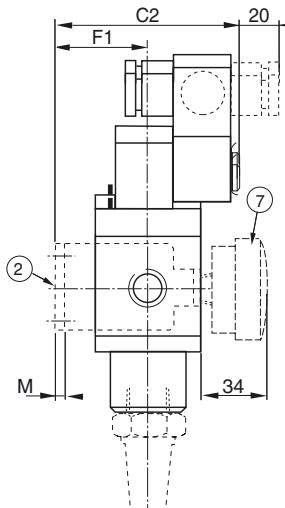
type Modulair	
	112
G1/4	
Ø W	G3/8 G3/4
A	171 213
B	140,5 (146,5) 140 (146,5)
B1	190,5 (187,5) 190,5 (187,5)
B2	56 56
B3	196,5 (202,5) 196,5 (202,5)
B4	80 80
B5	148,5 (154,5) 148,5 (154,5)
C	55 55
C1	73 (100) 73 (100)
C2	92 (119) 88 (115)
C4	47,5 55
D	125 173
D1	46 46
D2	16,5 -
E	41 41
E1	49 49
E2	73 (79) 73 (79)
E3	123 (120) 123 (120)
E4	67,5 67,5
E5	31 31
E6	81 (87) 81 (87)
F	27,5 27,5
F1	46 42
H	135,5 135,5
J	116 164
J1	155 197
K	17 17
K1	33,5 29
Ø L	5,5 4
ØL1	5,5 7
M	4 2
N	57 (56) 57 (56)
Weight (kg)	1,520 (1,820) 1,850 (2,150)

() : dimensions and weight with series 192 solenoid valve

DIRECT FRONTAL MOUNTING ①
OR LATERAL (G3/4)



Mounting with brackets



① Direct frontal mounting (G1/4 - G1/2) : 2 holes ØL and depth C4

② Mounting with 2 side brackets (accessory)

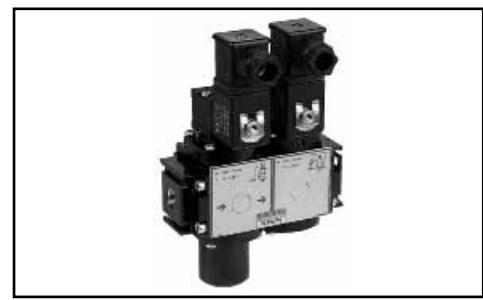
③ 190 ou 192 series pilot solenoid valves (supplied separately)

④ Matching G 1/2 silencer (accessory)

⑤ Adjustment locking pin

⑥ Solenoid valve installation polariser

⑦ Pressure gauge on front of soft-start device or shut-off valve



SPECIFICATION OF EQUIPMENT SUPPLIED SEPARATELY

MODULAIR type	CNOMO pilot	port sizes	shut-off valve (‡)		automatic soft-start device	solenoid/air controlled soft-start device (‡)
			solenoid valve			
107	size 15	G1/8	34394009	+ } 30211112--A (‐) (▼)	34304021	-
		G1/4	34394010	+ } 30211112--D (=) (▼)	34304022	-
	size 30	G1/8	34394001	+ } 18900007 (x)	34304021	-
		G1/4	34394002	+ } 19000005 (x) + } 19000017 (▼)	34304022	-
112	size 30	G1/4	34393101	+ } 18900007 (x)	34303019	34393004
		G3/8	34393102	+ } 19000005 (x)	34303020	34393005
		G1/2	34393103	+ } 19000017 (▼)	34303021	34393006
	non intended for the combinaison	G3/4 (1)	34393194	+ } 19201007 (x)	34303198	34393198
		G3/4	34393192	+ } 19201009 (▼)	34303196	34393196

(‡) The products + solenoid pilot valve must be ordered separately stating the quantity and code of each component, the solenoid valves are not supplied pre-installed on the system.

- For Size 15 series 302 valves, the codes of the AC and DC versions are different.

- For Size 30 series 189 and 192, the codes vary with the type of manual operator: (x) = none, (▼) = impulse

NOTE: These products can be **pneumatically piloted** in which case it is necessary to separately order the pneumatic connection flange(s) (G1/8), code **88126401**, instead of the above solenoid valves.

(1) Version intended for the combination of various functions (FRL - isolation valve etc ...), select the desired functions and obtain the necessary assembly kits and mounting brackets (see page 42)

OPTION: • For equipment and pilot valves intended for use in potentially **explosive atmospheres**, caused by gases or dusts, in accordance with ATEX Directive 94/9/EC, consult our ATEX - X019 catalogue

DIMENSIONS

SHUT-OFF VALVE

Weights:
 Modulair 107 avec pilote 302: 0,350 kg
 Modulair 107 avec pilote 189: 0,450 kg / 190: 0,510 kg
 Modulair 112 avec pilote 189: 0,810 kg
 pilote 190: 0,870 kg / 192: 0,990 kg

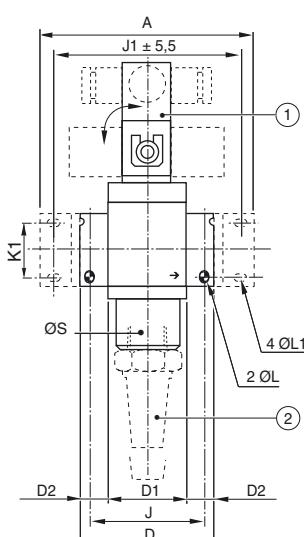
SOFT-START DEVICE

AUTOMATIC

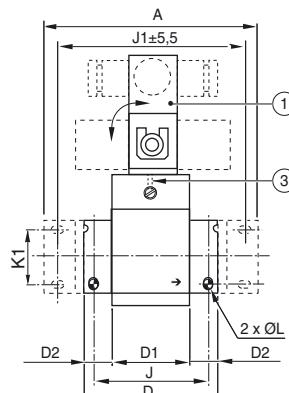
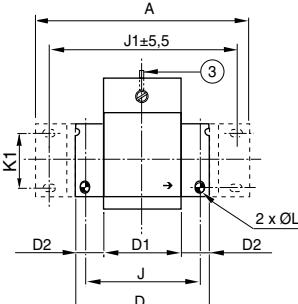
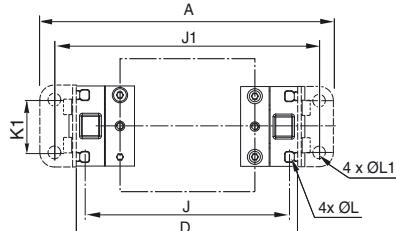
0,290 kg
0,750 kg

SOLENOID/AIR CONTROLLED

(Modulair 112 only)
189: 0,810 kg
190: 0,870 kg / 192: 0,990 kg



G3/8 to G1/2 versions

G3/4 VERSION
(all versions)

① Pilot (supplied separately): série 302,189 or 190 (Mod. 107) - série 189,190 or 192 (Mod. 112)

② Matching silencer (accessory)

③ Adjustment locking pin

Note: Solenoid valve coils and connectors rotatable by 90° and 180°increments

- connector size 15 CM6 (Pg 7P) series 302 pilot

- connector size 22 CM8 (Pg 9P) series 189 pilot

- connector ISO 4400 CM10 (Pg 11P) series 190 or 192 pilot

For overall dimensions of direct frontal or bracket mounting, see preceding pages.

ASSEMBLY OPTION FOR VALVE AND SOFT-START DEVICES ORDERED SEPARATELY

It is possible to combine components ordered separately using the assembly kit and side-mounting brackets for installation. Accessories needed (see page 38)

range	Modulair		
	107	112	112
G1/4			
Ø W	G1/8	G3/8	G3/4
	G1/4	G1/2	
A	83	125	191
D	42	79	127
D1	-	46	46
D2	-	16,5	-
J	32	70	118
J1	68,5	109	151
K1	28	33,5	29
Ø L	4,1	5,5	4
ØL1	4,5	5,5	7
ØS	G1/4	G1/2	G1/2