

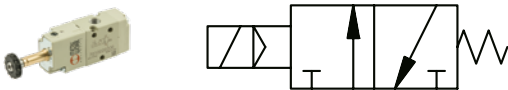
3/2-way valve

electropneumatic

PLUS ||

Art. No. 145697

Type No. 7040020200



Exemplary illustration

Traditional way valves of series 70 in electropneumatic version. These valves have a wide range of applications as bushing valves, direct mounting on the cylinder with special adapters or as series valves with multi-base plates and individual interlinking plates (supply strips).

Technical data

| | |
|-------------------------|--|
| Operating pressure | 2.5 - 10 bar |
| Medium temperature | -10 to 60 °C |
| Ambient temperature | -10 to 60 °C |
| Medium | Filtered compressed air with or without lubrication. If lubricated, then continuous. |
| Sealant | NBR |
| Flow rate measurement 1 | Flow rate at 6 bar and Δp 0.5 bar |
| Flow rate 1 | 1560 NI/min |
| Flow rate measurement 2 | Flow rate at 6 bar and Δp 1.0 bar |
| Flow rate 2 | 2150 NI/min |
| Connection | G 3/8 |
| DN | 13.3 |
| Operation | monostable |
| Function | 3/2 NC |
| Manual control | latching |
| Series | Valves series 70 |
| Scope of delivery | without connector and coil |
| TechnischerHinweis1 | Plug and coil are not included in delivery! |

Commercial data

| | |
|-------------------------|------------------|
| Customs tariff number | 84818079 |
| Country of origin | IT |
| eCl@ss 5.1.4 | 27291501 |
| eCl@ss 9.0 | 27291390 |
| UNSPSC_Code_v190501 | 40141603 |
| UNSPSC_CodeDesc_v190501 | Pneumatic valves |

VALVES SERIES 70

The Series 70 forms part of Metal Work's full range of traditional valves.

They are available in sizes 1/8", 1/4", 3/8" and 1/2", versions 3/2, 5/2, 5/3 and double 3/2, with mechanical, manual, pneumatic and electric drives.

They can be installed in line, onto a wall, on the cylinder (using a special bracket) or in series (on a multiple or modular base) to suit all possible applications.

A range of valves (Series 70 LT) designed using components for specific low-temperature applications is now available for the most commonly used types and sizes.

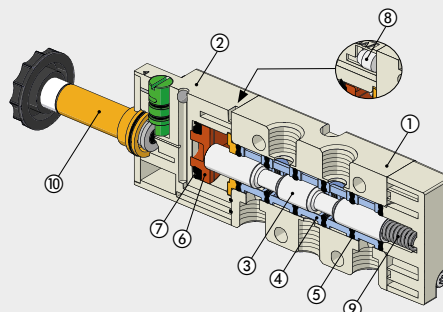
These highly reliable valves comply with the main applicable standards, including Atex, ISO 13489 and SIL, as stated in the documents and certificates available online.



| TECHNICAL DATA | | 1/8" | 1/4" | 3/8" | 1/2" |
|--|--------------------|---|--------|--------|--------|
| Thread on the valve ports | | 1/8" | 1/4" | 3/8" | 1/2" |
| Operating pressure series 70 versions | bar | 2.5 to 10 | | | |
| monostable and bistable differential | | 1 to 10 | | | |
| bistable | | vacuum to 10 | | | |
| asserved | | | | | |
| Operating pressure series 70 LT (low temperature) versions | bar | vacuum to 10 | | | |
| hand operated | | - | | | |
| pneumatic and solenoid/pneumatic | t = -40°C to -10°C | 5 to 10 | | | |
| | t = -10°C to +60°C | 3 to 10 | | | |
| Minimum pilot pressure | bar | 2.5 | | | |
| Operating temperature range | °C | -10 to +60 | | | |
| series 70 versions | | -40 to +60 | | | |
| series 70 LT (low temperature) versions | | | | | |
| Nominal diameter | mm | 5 | 7.5 | 13.3 | 15 |
| Conductance C | Nl/min · bar | 121.43 | 264.26 | 505.52 | 971.43 |
| Critical ratio b | bar/bar | 0.32 | 0.27 | 0.32 | 0.43 |
| Flow rate at 6 bar ΔP 0.5 bar | Nl/min | 400 | 750 | 1560 | 3200 |
| Flow rate at 6 bar ΔP 1 bar | Nl/min | 550 | 1100 | 2150 | 4600 |
| Installation | | In any position (vertical assembly is not recommended for bistable valves subjected to vibration) | | | |
| Fluid | | Filtered air without lubrication; lubrication, if used, must be continuous. | | | |
| Recommended lubricant | | For series 70 LT (low-temperature) versions, it is recommended to use of perferamente dried air. ISO and UNI FD 22 | | | |
| Maximum coil nut torque | Nm | For series 70 LT (low-temperature) it is not expected to be used with lubricated air. 1 | | | |
| Compatibility with oils | | See chapter Z1 | | | |

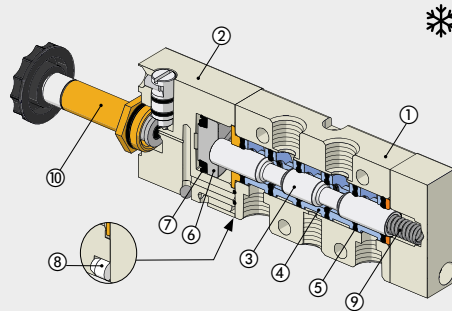
COMPONENTS SERIES 70

- ① VALVE BODY: Aluminium
- ② CONTROL/END CAP: plastic
- ③ SPOOL: chemically nickel-plated aluminium
- ④ DISTANCE PLATES: plastic
- ⑤ GASKETS: NBR
- ⑥ PISTONS: Hostaform®
- ⑦ PISTON GASKET: NBR
- ⑧ FILTER: plastic
- ⑨ SPRINGS: special steel
- ⑩ OPERATOR: Brass pipe - Stainless steel core



COMPONENTS SERIES 70 LT (LOW TEMPERATURE)

- ① ALVE BODY: aluminium
- ② CONTROL/END CAP: aluminium
- ③ SPOOL: chemically nickel-plated aluminium
- ④ DISTANCE PLATES: plastic
- ⑤ GASKETS: HNBR
- ⑥ PISTONS: aluminium
- ⑦ PISTON GASKET: HNBR
- ⑧ FILTER: plastic
- ⑨ SPRINGS: special steel
- ⑩ OPERATOR: brass pipe - Stainless steel core
(version specific for low-temperature applications)



VALVES

VALVES SERIES 70

FLOW CHARTS

VALVES SERIES 70 1/8"

Flow rates



VALVES SERIES 70 1/4"

Flow rates



VALVES SERIES 70 3/8"

Flow rates



VALVES SERIES 70 1/2"

Flow rates



VALVES SERIES 70, SOLENOID/PNEUMATIC

| TECHNICAL DATA | 1/8" | 1/4" | 3/8" | 1/2" | |
|--|---------------------------------------|--------|--------|--------|--------|
| Operating pressure: | | | | | |
| • monostable and bistable differential | bar 2.5 to 10 | | | | |
| • bistable | bar 1 to 10 | | | | |
| • asserved | bar Vacuum to 10 | | | | |
| Minimum pilot pressure | bar 2.5 | | | | |
| Operating temperature range | °C -10 to +60 | | | | |
| Nominal diameter | mm 5 | 7.5 | 13.3 | 15 | |
| Conductance C | Nl/min · bar | 121.43 | 264.26 | 505.52 | 971.43 |
| Critical ratio b | bar/bar | 0.32 | 0.27 | 0.32 | 0.43 |
| Flow rate at 6 bar ΔP 0.5 bar | Nl/min | 400 | 750 | 1560 | 3200 |
| Flow rate at 6 bar ΔP 1 bar | Nl/min | 550 | 1100 | 2150 | 4600 |
| TRA / TRR monostable at 6 bar | ms | 15/35 | 19/45 | 21/72 | 36/100 |
| TRA / TRR bistable at 6 bar | ms | 20/20 | 21/21 | 18/18 | 25/25 |
| Coil voltage values | 12; 24 VDC - 24; 110; 220V AC 50/60Hz | | | | |
| Power | 2 W (DC) 3.5VA (AC) | | | | |
| Voltage tolerance | % -10 to +15 | | | | |
| Insulation class | F 155 | | | | |
| Maximum coil nut torque | Nm 1 | | | | |
| Hand operator | Bistable | | | | |



VALVES

SYNOPTIC, SIZES AND VERSIONS

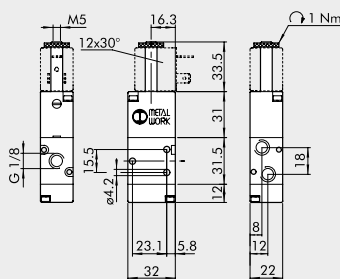
| SOV FAMILY | 2 DIMENSIONS | 3 FUNCTION | SO OPERATORS 14 | S RESETTING (12) | NC FURTHER DETAILS |
|-------------------------|--------------|------------|----------------------|---------------------------------|---|
| SOV solenoid/ pneumatic | 2 1/8" | 3 3/2 | SO solenoid | S mechanical springs | OO no indication |
| | 3 1/4" | 5 5/2 | SE solenoid assisted | B bistable | NC normally closed |
| | C 3/8" | 6 5/3 | | D differential | NO normally open |
| | 4 1/2" | ■ 8 2-3/2 | | P pneumatic | CC closed centres |
| | | | | ◆ A pneumatic/mechanical spring | OC open centres |
| | | | | | PC pressure centres |
| | | | | | ▲ NC-NO normally closed - normally open |

- Only available for size 1/8" and 1/4"
- ◆ On demand
- ▲ Only available for function 2-3/2

VALVES SERIES 70, PNEUMATIC

VALVES SERIES 70, SOLENOID/PNEUMATIC, PILOT-ASSISTED SOLENOID/PNEUMATIC, 1/8"

MONOSTABLE 3/2 NO, 1/8"



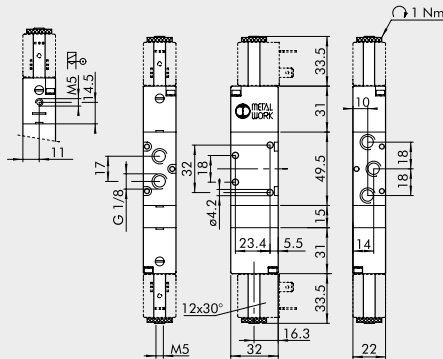
| Symbol | Code | Abbrev. | Weight [g] |
|--------|------------|---------------|------------|
| | 7010020400 | SOV 23 SOS NO | 100 |

MONOSTABLE 3/2 NC, 1/8"



| Symbol | Code | Abbrev. | Weight [g] |
|--------|------------|---------------|------------|
| | 7010020200 | SOV 23 SOS NC | 100 |
| | 7010020500 | SOV 23 SES NC | 100 |

MONOSTABLE 5/3, 1/8"

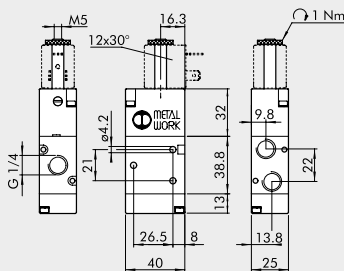


NOTES

| Symbol | Code | Abbrev. | Weight [g] |
|--------|------------|---------------|------------|
| | 7010022100 | SOV 26 SOS CC | 190 |
| | 7010022200 | SOV 26 SOS OC | 190 |
| | 7010022300 | SOV 26 SOS PC | 190 |
| | 7010022400 | SOV 26 SES CC | 188 |
| | 7010022500 | SOV 26 SES OC | 188 |
| | 7010022600 | SOV 26 SES PC | 188 |

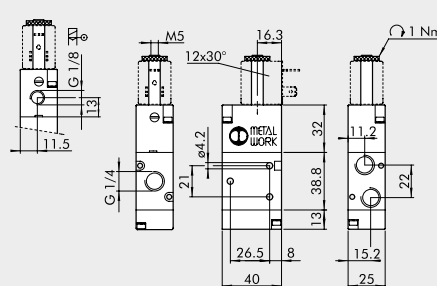
VALVES SERIES 70, SOLENOID/PNEUMATIC, PILOT-ASSISTED SOLENOID/ PNEUMATIC, 1/4"

MONOSTABLE 3/2 NO, 1/4"



| Symbol | Code | Abbrev. | Weight [g] |
|--------|------------|---------------|------------|
| | 7020020400 | SOV 33 SOS NO | 152 |

MONOSTABLE 3/2 NC, 1/4"



| Symbol | Code | Abbrev. | Weight [g] |
|--------|------------|---------------|------------|
| | 7020020200 | SOV 33 SOS NC | 152 |
| | 7020020500 | SOV 33 SES NC | 152 |

VALVES

VALVES SERIES 70, SOLENOID/PNEUMATIC

VALVES SERIES 70

The Series 70 forms part of Metal Work's full range of traditional valves.

They are available in sizes 1/8", 1/4", 3/8" and 1/2", versions 3/2, 5/2, 5/3 and double 3/2, with mechanical, manual, pneumatic and electric drives.

They can be installed in line, onto a wall, on the cylinder (using a special bracket) or in series (on a multiple or modular base) to suit all possible applications.

A range of valves (Series 70 LT) designed using components for specific low-temperature applications is now available for the most commonly used types and sizes.

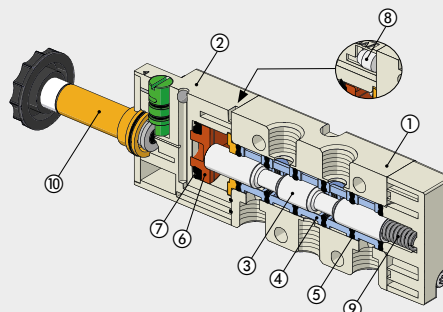
These highly reliable valves comply with the main applicable standards, including Atex, ISO 13489 and SIL, as stated in the documents and certificates available online.



| TECHNICAL DATA | | 1/8" | 1/4" | 3/8" | 1/2" |
|--|--------------------|---|--------|--------|--------|
| Thread on the valve ports | | 1/8" | 1/4" | 3/8" | 1/2" |
| Operating pressure series 70 versions | bar | 2.5 to 10 | | | |
| monostable and bistable differential | | 1 to 10 | | | |
| bistable | | vacuum to 10 | | | |
| asserved | | | | | |
| Operating pressure series 70 LT (low temperature) versions | bar | vacuum to 10 | | | |
| hand operated | | - | | | |
| pneumatic and solenoid/pneumatic | t = -40°C to -10°C | 5 to 10 | | | |
| | t = -10°C to +60°C | 3 to 10 | | | |
| Minimum pilot pressure | bar | 2.5 | | | |
| Operating temperature range | °C | -10 to +60 | | | |
| series 70 versions | | -40 to +60 | | | |
| series 70 LT (low temperature) versions | | | | | |
| Nominal diameter | mm | 5 | 7.5 | 13.3 | 15 |
| Conductance C | Nl/min · bar | 121.43 | 264.26 | 505.52 | 971.43 |
| Critical ratio b | bar/bar | 0.32 | 0.27 | 0.32 | 0.43 |
| Flow rate at 6 bar ΔP 0.5 bar | Nl/min | 400 | 750 | 1560 | 3200 |
| Flow rate at 6 bar ΔP 1 bar | Nl/min | 550 | 1100 | 2150 | 4600 |
| Installation | | In any position (vertical assembly is not recommended for bistable valves subjected to vibration) | | | |
| Fluid | | Filtered air without lubrication; lubrication, if used, must be continuous. | | | |
| Recommended lubricant | | For series 70 LT (low-temperature) versions, it is recommended to use of perferamente dried air. ISO and UNI FD 22 | | | |
| Maximum coil nut torque | Nm | For series 70 LT (low-temperature) it is not expected to be used with lubricated air. 1 | | | |
| Compatibility with oils | | See chapter Z1 | | | |

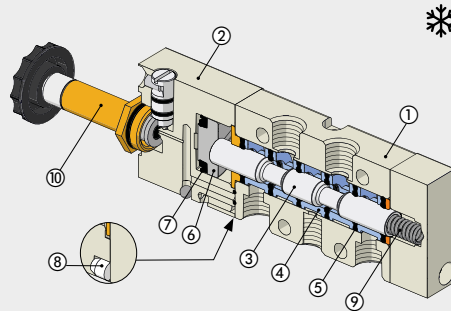
COMPONENTS SERIES 70

- ① VALVE BODY: Aluminium
- ② CONTROL/END CAP: plastic
- ③ SPOOL: chemically nickel-plated aluminium
- ④ DISTANCE PLATES: plastic
- ⑤ GASKETS: NBR
- ⑥ PISTONS: Hostaform®
- ⑦ PISTON GASKET: NBR
- ⑧ FILTER: plastic
- ⑨ SPRINGS: special steel
- ⑩ OPERATOR: Brass pipe - Stainless steel core



COMPONENTS SERIES 70 LT (LOW TEMPERATURE)

- ① ALVE BODY: aluminium
- ② CONTROL/END CAP: aluminium
- ③ SPOOL: chemically nickel-plated aluminium
- ④ DISTANCE PLATES: plastic
- ⑤ GASKETS: HNBR
- ⑥ PISTONS: aluminium
- ⑦ PISTON GASKET: HNBR
- ⑧ FILTER: plastic
- ⑨ SPRINGS: special steel
- ⑩ OPERATOR: brass pipe - Stainless steel core
(version specific for low-temperature applications)



VALVES

VALVES SERIES 70

FLOW CHARTS

VALVES SERIES 70 1/8"

Flow rates



VALVES SERIES 70 1/4"

Flow rates



VALVES SERIES 70 3/8"

Flow rates



VALVES SERIES 70 1/2"

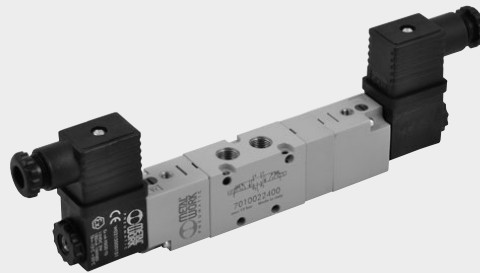
Flow rates





VALVES SERIES 70, SOLENOID/PNEUMATIC

| TECHNICAL DATA | 1/8" | 1/4" | 3/8" | 1/2" | |
|--|---------------------------------------|--------|--------|--------|--------|
| Operating pressure: | | | | | |
| • monostable and bistable differential | bar 2.5 to 10 | | | | |
| • bistable | bar 1 to 10 | | | | |
| • asserved | bar Vacuum to 10 | | | | |
| Minimum pilot pressure | bar 2.5 | | | | |
| Operating temperature range | °C -10 to +60 | | | | |
| Nominal diameter | mm 5 | 7.5 | 13.3 | 15 | |
| Conductance C | Nl/min · bar | 121.43 | 264.26 | 505.52 | 971.43 |
| Critical ratio b | bar/bar | 0.32 | 0.27 | 0.32 | 0.43 |
| Flow rate at 6 bar ΔP 0.5 bar | Nl/min | 400 | 750 | 1560 | 3200 |
| Flow rate at 6 bar ΔP 1 bar | Nl/min | 550 | 1100 | 2150 | 4600 |
| TRA / TRR monostable at 6 bar | ms | 15/35 | 19/45 | 21/72 | 36/100 |
| TRA / TRR bistable at 6 bar | ms | 20/20 | 21/21 | 18/18 | 25/25 |
| Coil voltage values | 12; 24 VDC - 24; 110; 220V AC 50/60Hz | | | | |
| Power | 2 W (DC) 3.5VA (AC) | | | | |
| Voltage tolerance | % -10 to +15 | | | | |
| Insulation class | F 155 | | | | |
| Maximum coil nut torque | Nm 1 | | | | |
| Hand operator | Bistable | | | | |



VALVES

SYNOPTIC, SIZES AND VERSIONS

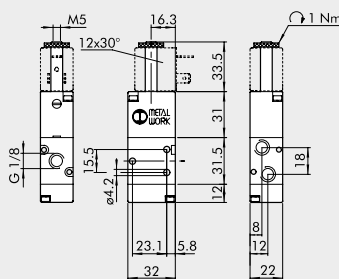
| SO V FAMILY | 2 DIMENSIONS | 3 FUNCTION | SO OPERATORS 14 | S RESETTING (12) | NC FURTHER DETAILS |
|-------------------------|--------------|------------|----------------------|---------------------------------|---|
| SOV solenoid/ pneumatic | 2 1/8" | 3 3/2 | SO solenoid | S mechanical springs | OO no indication |
| | 3 1/4" | 5 5/2 | SE solenoid assisted | B bistable | NC normally closed |
| | C 3/8" | 6 5/3 | | D differential | NO normally open |
| | 4 1/2" | ■ 8 2-3/2 | | P pneumatic | CC closed centres |
| | | | | ◆ A pneumatic/mechanical spring | OC open centres |
| | | | | | PC pressure centres |
| | | | | | ▲ NC-NO normally closed - normally open |

- Only available for size 1/8" and 1/4"
- ◆ On demand
- ▲ Only available for function 2-3/2

VALVES SERIES 70, PNEUMATIC

VALVES SERIES 70, SOLENOID/PNEUMATIC, PILOT-ASSISTED SOLENOID/PNEUMATIC, 1/8"

MONOSTABLE 3/2 NO, 1/8"



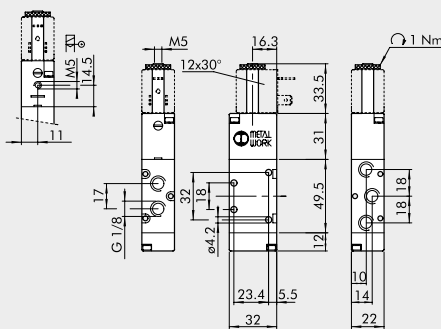
| Symbol | Code | Abbrev. | Weight [g] |
|--------|------------|---------------|------------|
| | 7010020400 | SOV 23 SOS NO | 100 |

MONOSTABLE 3/2 NC, 1/8"



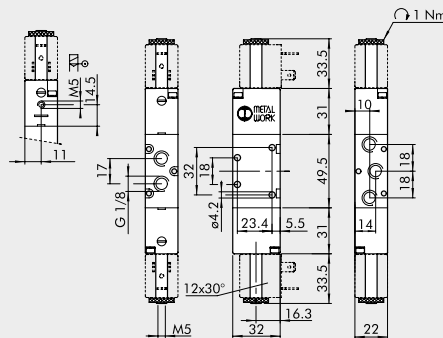
| Symbol | Code | Abbrev. | Weight [g] |
|--------|------------|---------------|------------|
| | 7010020200 | SOV 23 SOS NC | 100 |
| | 7010020500 | SOV 23 SES NC | 100 |

MONOSTABLE 5/2, 1/8"



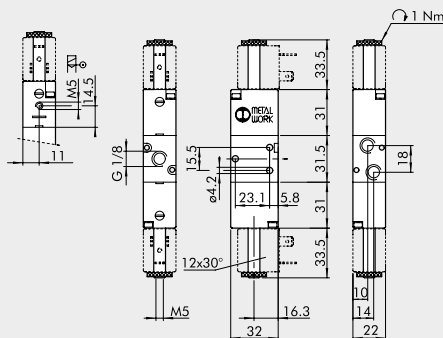
| Symbol | Code | Abbrev. | Weight [g] |
|--------|------------|---------------|------------|
| | 7010021100 | SOV 25 SOS OO | 128 |
| | 7010021500 | SOV 25 SES OO | 129 |

BISTABLE 5/2, 1/8"



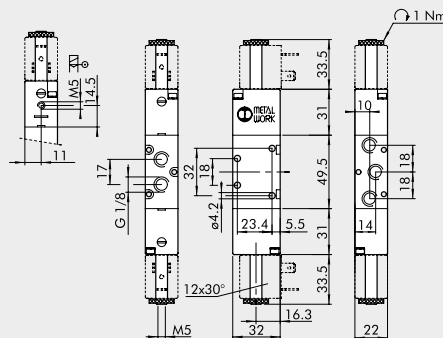
| Symbol | Code | Abbrev. | Weight [g] |
|--------|------------|---------------|------------|
| | 7010021200 | SOV 25 SOB OO | 160 |
| | 7010021300 | SOV 25 SOD OO | 166 |
| | 7010021600 | SOV 25 SEB OO | 160 |

BISTABLE 3/2, 1/8"



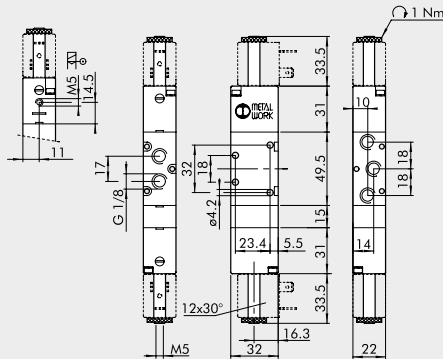
| Symbol | Code | Abbrev. | Weight [g] |
|--------|------------|---------------|------------|
| | 7010020100 | SOV 23 SOB OO | 135 |
| | 7010020300 | SOV 23 SEB OO | 136 |

DOUBLE 3/2, 1/8"



| Symbol | Code | Abbrev. | Weight [g] |
|--------|------------|------------------|------------|
| | 7010023100 | SOV 28 SOS NC | 186 |
| | 7010023200 | SOV 28 SOS NO | 186 |
| | 7010023300 | SOV 28 SOS NC-NO | 186 |
| | 7010023400 | SOV 28 SES NC | 186 |
| | 7010023500 | SOV 28 SES NO | 186 |
| | 7010023600 | SOV 28 SES NC-NO | 186 |

MONOSTABLE 5/3, 1/8"

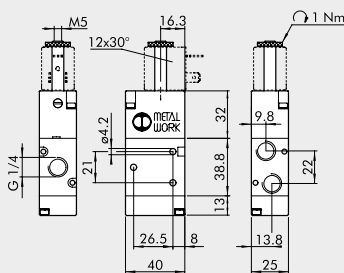


NOTES

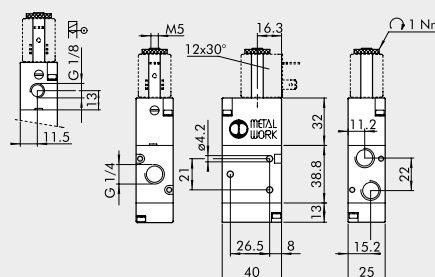
| Symbol | Code | Abbrev. | Weight [g] |
|--------|------------|---------------|------------|
| | 7010022100 | SOV 26 SOS CC | 190 |
| | 7010022200 | SOV 26 SOS OC | 190 |
| | 7010022300 | SOV 26 SOS PC | 190 |
| | 7010022400 | SOV 26 SES CC | 188 |
| | 7010022500 | SOV 26 SES OC | 188 |
| | 7010022600 | SOV 26 SES PC | 188 |

VALVES SERIES 70, SOLENOID/PNEUMATIC, PILOT-ASSISTED SOLENOID/ PNEUMATIC, 1/4"

MONOSTABLE 3/2 NO, 1/4"



MONOSTABLE 3/2 NC, 1/4"



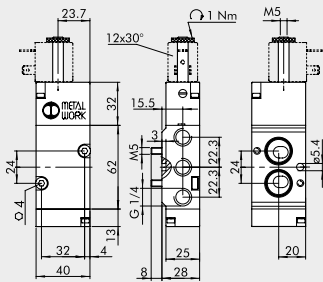
| Symbol | Code | Abbrev. | Weight [g] |
|--------|------------|---------------|------------|
| | 7020020400 | SOV 33 SOS NO | 152 |

| Symbol | Code | Abbrev. | Weight [g] |
|--------|------------|---------------|------------|
| | 7020020200 | SOV 33 SOS NC | 152 |
| | 7020020500 | SOV 33 SES NC | 152 |

VALVES

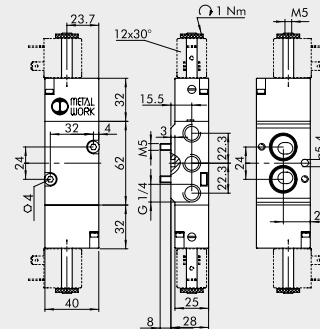
VALVES SERIES 70, SOLENOID/PNEUMATIC

MONOSTABLE, SOLENOID/PNEUMATIC 5/2



| Symbol | Code | Abbrev. | Weight [g] |
|--------|------------|---------------|------------|
| | 7021020100 | SOV A5 SOS OO | 234 |

BISTABLE, SOLENOID/PNEUMATIC 5/2



| Symbol | Code | Abbrev. | Weight [g] |
|--------|------------|---------------|------------|
| | 7021020200 | SOV A5 SOB OO | 270 |

ACCESSORIES FOR NAMUR VALVES SOV, SOLENOID/PNEUMATIC

Refer to page B1.60 for coils and connectors



NOTES

VALVES

VALVES NAMUR

Accessories

| | Art. No. | Type No. |
|--|----------|----------------|
| Solenoid 12 V DC, 2 W | 118631 | 400-514-41 |
| Solenoid 24 V DC, 2 W | 118632 | 400-514-42 |
| Solenoid 24 V AC, 50/60 Hz, 3,5 VA | 118628 | 400-514-01 |
| Solenoid 110 V AC, 50/60 Hz, 3,5 VA | 118629 | 400-514-07 |
| Solenoid 230 V AC, 50/60 Hz, 3,5 VA | 118630 | 400-514-17 |
| Solenoid 12 V DC, 5 W | 118636 | 400-517-41 |
| Solenoid 24 V DC, 5 W | 118637 | 400-517-42 |
| Solenoid 24 V AC, 50/60 Hz, 5 VA | 118633 | 400-517-01 |
| Solenoid 110 V AC, 50/60 Hz, 5 VA | 118634 | 400-517-07 |
| Solenoid 230 V AC, 50/60 Hz, 5 VA | 118635 | 400-517-17 |
| Plug connector, standard, industrial form B, black | 117313 | 1920.9P |
| Plug connector with LED, 24 V, transparent | 117316 | 1920.9PL.42 |
| Plug connector with LED, 110 V, transparent | 151011 | 1920.9PL110 |
| Plug connector with LED, 230 V, transparent | 117314 | 1920.9PL.17 |
| Plug connector with LED, varistor 24 V, transparent | 117318 | 1920.9PLV42 |
| Plug connector with LED, varistor 110 V, transparent | 129849 | 1920.9PLV110 |
| Plug connector with LED, varistor 230 V, transparent | 117317 | 1920.9PLV17 |
| Plug connector, ATEX II 2 GD, black | 123182 | 1920.9PL2GD-EX |