



ONE SAFE AIR® is a pneumatic safety component consisting of a ONE air treatment unit arranged in series with a 3/2 electro-pneumatic valve with spool monitoring.

A pressure switch is placed between the ONE unit and the monitored valve to indicate the presence of pressure.

The safety function consists of discharging the circuit downstream the component.

A maximum pressure valve is installed after the monitored valve.

ONE SAFE AIR® comes in various configurations, all based on electric ONE units.

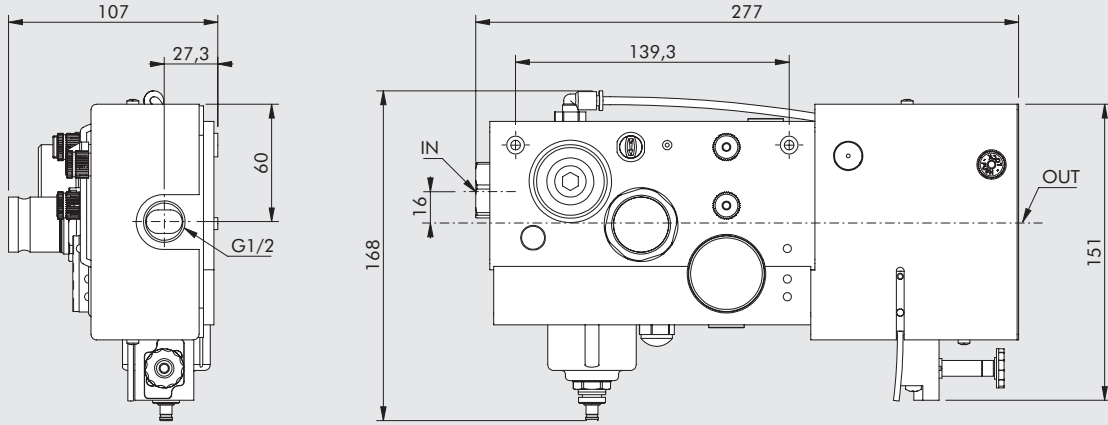


TECHNICAL DATA

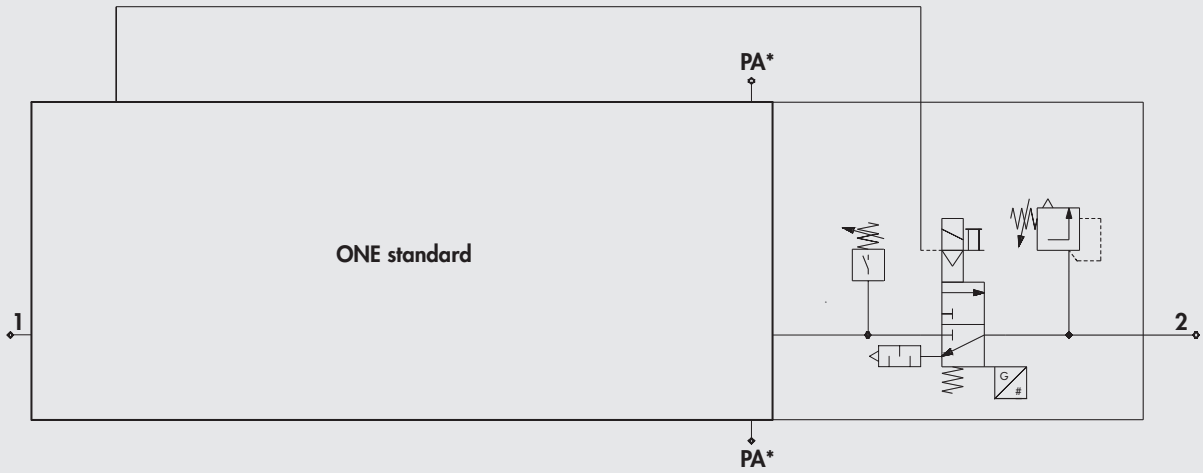
Operation	mm	Dual 3/2 monostable valve with pressure regulation
Fluid		Filtered unlubricated air (50 µm)
Operating temperature range	°C	-10 to +50
Operating pressure	bar	2.5 to 10
Delivery flow rate at 6.3 bar Δp 0.5 bar (with 1/2" input thread)	Nl/min	2900
Delivery flow rate at 6.3 bar Δp 1 bar (with 1/2" input thread)	Nl/min	3600
Flow rate on free exhaust silencer (ONE) at 6.3 bar	Nl/min	1600
Flow rate on free exhaust silencer (valve) at 6.3 bar	Nl/min	4600
TRA/TRR at 6.3 bar (safety valve)	ms/ms	36/60
TRA/TRR at 6.3 bar	ms/ms	Depending on the APR/60
Solenoid pilot		According Cnomo
Manual actuator		Monostable on solenoid pilot
Coils		30 mm side, Ø 8 hole
		4 W - 24 VDC, 4 VA - 24 VAC, 110 VAC, 220 VA 50/60 Hz
		22 mm side, Ø 8 hole
		2 W - 12 VDC, 24 VDC, 3.5 VA - 24 VAC, 110 VAC, 220 VA 50/60 Hz
		Certified EN 60204.1 and VDE 0580*
Max coil ring nut torque	Nm	1
Maximum safety pressure switch current	A	2
Maximum safety pressure switch voltage	V	250
Pressure switch contacts		Normally closed (NC)
Insulation class of the solenoid ONE		F155
Switching time		100% ED
Electrical connector		M12x1, 5-PIN 90°, according to CEI IEC 60947-5-2 *
Power solenoid ONE	W	3/0.3
Voltage solenoid ONE	V	24VDC ±10%
Type of sensor used		Hall effect
Wall fixing (max. panel thickness 10 mm)		Front, with M5x75 screws or back, with M6x70 screws. The screws are included in the supply.
Maximum torque screws ONE	Nm	3.5 ±0.5
Mounting position		Vertical
Direction of flow		From left to right
Weight	kg	2.5
Compatibility with oils		https://www.metalwork.it/pneumatic-components/compatibility-materials-0001408.html
Class of protection		IP65 with coil and connector mounted
Noise level		Max. 78 dBA with silenced relief
B10d		20 x 10 ⁶ cycles
Categoria - ISO EN 13849		4
DC Low		High (>99 %)
CCF		90
PL - ISO EN 13849		Suitable for use in safety circuits up to PL=e

* To avoid malfunctions, we recommend using Metal Work accessories.

DIMENSIONS



OVERALL DIAGRAM



* No safety function is provided for PA.

NOTES

ORDERING CODES

	A	B	C	D	E	F	G	H	I	L	M
	ONE electric	Air intake	Degree of filtration	Clogged filter signal	Condensate drain	Pressure regulation	Valves	Pressure switch	Air outlet	Various	
EXAMPLE	54	3	2	1	1	8	7	1	0	S	1
54	ONE electric	3 1/2"	2 20 µm	0 NO	0 RMSA	4 0.5 to 4 bar	5 V3V manual and V3V electric	0 NO	0 Without bushing	S Safe air®	1 M8 pressure switch (0.3 m) + M8 sensor (0.3 m)
		4 3/4"	5 5 µm	1 YES	1 auto-matic (RA)	8 0.5 to 8 bar	6 V3V manual with padlock and V3V electric	1 YES			3 M8 pressure switch (0.3 m) + 3 wire sensor (2 m)
	5 1"						7 V3V manual and APR electric				6 2 m pressure switch + M8 sensor (0.3 m)
							8 V3V manual with padlock and APR electric				8 2 m pressure switch + 3 wire sensor (2 m)
							9 only V3V electric				
							A only APR electric				

- A ONE electric**
- B Air intake**
There are 3 different gas cylindrical threads: 1/2", 3/4" and 1".
- C Degree of filtration**
A cartridge with a degree of filtering of 5 µm (yellow) or 20 µm (white) is available. This value is marked on the plug.
- D Clogged filter signal**
If the filter gets so clogged up that it causes an excessive drop in pressure as the air passes through, the orange indicator will project from the body by a few millimetres.
- E Condensate drain**
RMSA: the condensate is drained out automatically only by relieving the air pull the knurled knob for having the same result.
Automatic (RA): a floating system that automatically drains the condensate out whenever the level of water in the bowl reaches the set value.
- F Pressure regulation**
There are 2 possible regulation fields.
The value is marked on the regulation knob.
- G Valves**
There are 6 different combinations.
- **5 - V3V manual and V3V electric:** two V3V in series are present, one is manual the other electrical. By operating both the valve the air flow is allowed. If one or two are switched OFF, the air downstream is relieved. The electrical one can also be operated manually by reefing pushed the "TEST" button.
 - **6 - V3V manual with padlock and V3V electric:** like the previous, with the padlock device in "OFF" position.
 - **7 - V3V manual and APR electric:** One manual V3V and one soft start valve are present. When both are operated, the pressure starts to increase slowly, with a fine adjustable ramp, and when it reaches about 30-40% of the set value, the valve opens completely and the pressure rises to the set value.
 - **8 - V3V manual with padlock and APR electric:** like the previous, with the padlock device on the manual V3V in "OFF" position.
 - **9 - V3V electric:** It's present only the electrical V3V. The valve will open if it is powered on. When the power supply is switched off, the valve closes and air downstream is relieved. The valve can also be operated manually by keeping pushed the test button.
 - **A - APR electric:** It's present only the electric soft start valve. When it is powered ON, the pressure starts to increase slowly, with a fine adjustable ramp, and when it reaches about 30-40% of the set value, the valve opens completely and the pressure rises to the set value.
- H Pressure switch**
The pressure switch has a switching contact, which means you can have a normally-open signal or a normally-close signal. It is also connected to the NC and NO LEDs which come on if the actual pressure is less or greater than the set pressure, respectively. The LEDs only come on if an electric charge is connected to them.
- I Air outlet without bushings**
- L Safe air® versions**
- M Type sensors**

Dichiarazione di Conformità Prodotto

alla Direttiva 2006/42/CE
e successive modifiche

La Ditta

METAL WORK S.p.A.
Via Segni 5 - 25062 Concesio (BS) - ITALIA

dichiara sotto la propria esclusiva responsabilità che, i seguenti prodotti:

- ONE - SERIE SAFE AIR[®]

codice: 54_ _ _ _ _ OS _

sono conformi alla Direttiva Macchine 2006/42/CE.

Sono state applicate le seguenti norme armonizzate:

EN 13849	Sicurezza del macchinario. Parti di sistemi di comando legate alla sicurezza.
EN ISO 4414: 2010	Pneumatica - Regole generali e requisiti di sicurezza per i sistemi ed i loro componenti.

Metal Work ha costituito e detiene il Fascicolo Tecnico.

Concesio, Ottobre 2015

Responsabile di prodotto



Ing. Giorgio Guzzoni.

Declaration of Products Conformity

Pursuant to Directive 2006/42/EC
and subsequent amendments

The Company

METAL WORK S.p.A.
Via Segni 5 - 25062 Concesio (BS) - ITALY

declares under its own responsibility that the following products:

- ONE - SAFE AIR® SERIES

code: 54_ _ _ _ _ OS _

comply with the Machinery Directive 2006/42/EC.

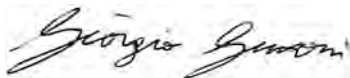
The following harmonised standards are applied:

EN 13849	Safety of machinery. Safety-related parts of control systems.
EN ISO 4414: 2010	Pneumatic - General rules and safety requirements for systems and the components.

Metal Work has drawn up and keeps the Technical File.

Concesio, October 2015

Chief engineer



Ing. Giorgio Guzzoni.



INDUSTRY & FACILITIES

TYPE APPROVAL CERTIFICATE n° P14102/14/MC/mc rev 1
Certificato d'approvazione del tipo n° P14102/14/PC/mc rev 1

1. General (Generale):

Name and address of the factory:
Nome ed indirizzo del fabbricante

Metal Work S.p.A. Via Segni 5-7-9 25062 Concesio (BS)

Type(s) of product and component manufactured:
Tipologia(e) di prodotti e componenti realizzati:

Air treatment unit in the ONE Series plus a 3/2 monostable electropneumatic valve with spool and pressure monitoring
Gruppo trattamento aria Serie ONE piu una valvola 3/2 elettropneumatica monostabile con monitoraggio della spola e della pressione.

Production site
Stabilimento di produzione

Metal Work S.p.A. Via Segni 5-7-9 25062 Concesio (BS)

Activity carried out on:
Prove di tipo presenziate da:

between May 2014 and November 2014
da Maggio 2014 a Novembre 2014

2. Type description (Descrizione del tipo):

5 _ _ _ _ _ OS _

	ONE elettrico	Filetto in ingresso	Grado di filtrazione	Segnale filtro intasato	Scanco della condensa	Regolazione della pressione	Valvole	Pressostato	Filetto in uscita	Vant. versioni speciali	
	A	B	C	D	E	F	G	H	I	L	M
CODICE:											
Esempio di codice	5	4	0	2	1	1	0	7	1	0	S
	04 ONE elettrico	1: 1/4"	2: 20 µm	0: No	0: 0/05"	4: 0.5-4 bar	5: V3V manuale+V3Velettrica 6: V3V man luc. e V3V elettr.	0: No 1: SI	0: Senza boccola	5: Safe air	0: Pressostato M8 + Valvola max + REED M8 1: Pressostato M8 + Valvola max + HALL M8 2: Pressostato M8 + Valvola max + REED 2F 3: Pressostato M8 + Valvola max + HALL 3F 4: Pressostato M8 + Valvola max + HALL ATEX 5: Pressostato 2m + Valvola max + REED M8 6: Pressostato 2m + Valvola max + HALL M8 7: Pressostato 2m + Valvola max + REED 2F 8: Pressostato 2m + Valvola max + HALL 3F 9: Pressostato 2m + Valvola max + HALL ATEX A: Pressostato M8 + SIZA Valvola max + REED M8 B: Pressostato M8 + SIZA Valvola max + HALL M8 C: Pressostato M8 + SIZA Valvola max + REED 2F D: Pressostato M8 + SIZA Valvola max + HALL 3F E: Pressostato M8 + SIZA Valvola max + HALL ATEX F: Pressostato 2m + SIZA Valvola max + REED M8 G: Pressostato 2m + SIZA Valvola max + HALL M8 H: Pressostato 2m + SIZA Valvola max + REED 2F I: Pressostato 2m + SIZA Valvola max + HALL 3F L: Pressostato 2m + SIZA Valvola max + HALL ATEX
		2: 3/8"	5: 5 µm	1: SI	1: 0.05mm (0.01")	8: 0.5-8 bar	7: V3V man. e APR elettr. 8: V3V man.lucc e APR elettr. 9: Solo V3V elettrica A: Solo APR elettrico				
		3: 1/2"									
		4: 3/4"									
		5: 1"									



INDUSTRY & FACILITIES

TYPE APPROVAL CERTIFICATE n° P14102/14/MC/mc rev 1
Certificato d'approvazione del tipo n° P14102/14/PC/mc rev 1

Reference standards (Norme di riferimento):	UNI EN ISO 13849-1:2015
	UNI EN ISO 13849-2:2012

3. Conclusion (Conclusion):

After re-examination of the following documents:
A seguito del riesame dei seguenti documenti:

- Design verification and test report n° P14101/14/PC/mc rev1 dated 28th May 2018
Rapporto verifica documentazione e test n° P14101/14/PC/mc datato 28 Maggio 2018

the undersigned, Inspector to Bureau Veritas, certifies that the above type meets the applicable requirements, and for the function of air supply interruption and exhaust of the line connected to port 2 are suitable for application up to PL "e" for the One Safe Air versions. The B10d in 20x10⁶ cycle value has been assessed with the B10 determination method stated in the standard EN 13849-1 (annex C).

Il sottoscritto ispettore del Bureau Veritas, certifica che i suddetti tipi sono conformi ai requisiti applicabili, e per la funzione di interruzione dell'alimentazione e la messa a scarico del ramo di circuito pneumatico collegato con la porta 2 sono idonei all'impiego in circuiti fino a PL "e" per le versioni One Safe Air. Si è determinato un B10d di 20x10⁶ di cicli mediante il metodo di determinazione del B10 indicato nella norma EN 13849-1 (annex C)..

This approval remains valid for 3 years on condition that no significant changes are made to the product, facility, production rate and its quality system.

Questo certificato di approvazione rimane valido per 3 anni a condizione che non intervengano significative variazioni al bene oggetto dell'audit, alla scala produttiva ed al suo sistema qualità.

This approval is an integral part of the certification process managed by Bureau Veritas as defined in BV procedure GM SI 210.

Questo certificato è una parte integrante del processo di certificazione realizzato da Bureau Veritas, così come specificato nella procedura GM SI 210.

Attachments (Allegati): Technical Dossier ONE Safe Air
Design verification report n° P14101/14/PC/mc rev 1 issued on 28th May 2018

All the examined documents with "BV reviewed" stamp
Tutti i documenti oggetto di riesame riportano il timbro "BV Verificato"



Inspected by:

Name: M. Cencio

Checked by:

Name: P. Capellini

Date of issue: 28th May 2018

Inspection centre: BV Milano

Distribution: CLIENT MANUFACTURER