SERIE SAFE AIR®

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.

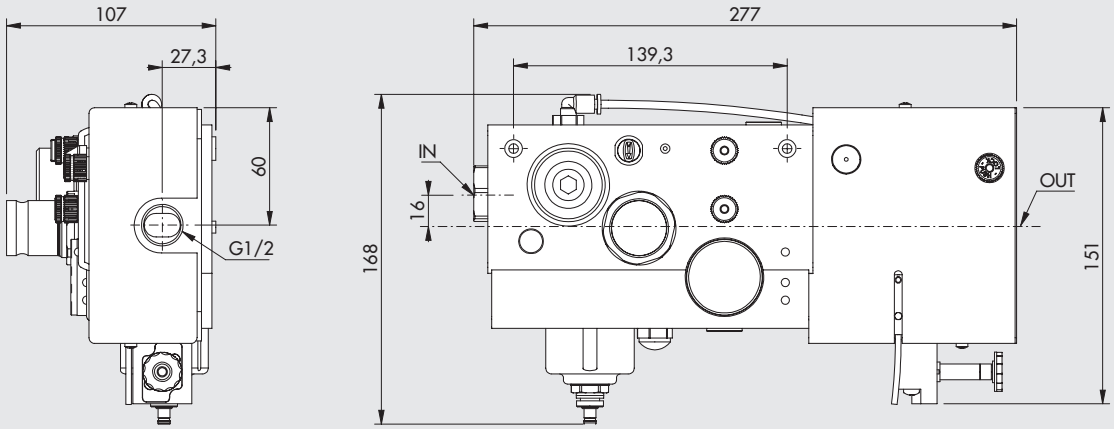
TECHNICAL DATA		
Operation	mm	Dual 3/2 monostable valve with pressure regulation
Fluid		Filtered unlubricated air (50 µm)
Operating temperature range	°C	-10 to +50
Operating pressure	bar	2.5 to 10
Delivery flow rate at 6.3 bar Δp 0.5 bar (with 1/2" input thread)	Nl/min	2900
Delivery flow rate at 6.3 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
		2 W - 24 VDC; 3.5 VA - 24, 110, 220 VAC 50/60 Hz
		22 mm side, Ø 8 hole
		2 W - 12, 24 VDC; 3.5 VA - 24, 110, 220 VAC 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 open (NO) and 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
Weigth	kg	2.5
Compatibility with oils		See **chapter Z1**
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.

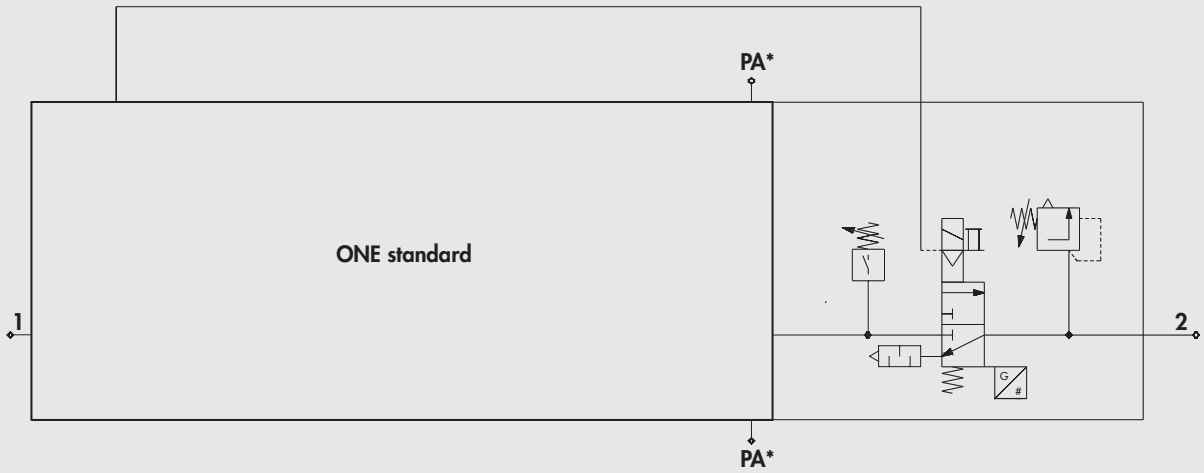
Please contact our sales offices for further information and quotation.

METAL WORK PNEUMATIC

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				

Please contact our sales offices for further information and quotation.

METAL WORK PNEUMATIC

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 elettric: 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 elettric: It's present only the electric soft start valve. Whent 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**

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_ _ _ _ _ _ _ 0S _

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.

BUREAU VERITAS ITALIA S.p.A. Via Miramar, 15 20126 Milano

ATTESTATO DI ESAME DELLA CONFORMITA'
Direttiva Macchine 2006/42/CE

CONFORMITY EXAMINATION CERIFICATE
Machinery Directive 2006/42/EC

N°CV 015-12-2014

BUREAU VERITAS ITALIA a seguito di verifica volontaria, attesta che il modello di seguito identificato, è stato esaminato secondo quanto previsto dalla Direttiva Macchine 2006/42/CE, e ne risulta conforme

Following the voluntary examination, Bureau Veritas Italia attests that type identified hereunder has been examined against the provisions of the Machinery Directive 2006/42/EC, and found to satisfy the provisions of the directive

Macchina/*Machine*:
Blocco logico con funzione di sicurezza /*Logic unit to ensure safety function*

Fabbricante / *manufacturer*

Metal Work S.p.A.

Modello / type

5_ _ _ _ _ _ _ _0S_

	ONE elettrico	Filetto in ingresso	Grado di filtrazione	Segnale filtro intasato	Scarico della condensa	Regolazione della pressione	Valvole	Pressostato	Filetto in uscita	Varie, versioni speciali	
	A	B	C	D	E	F	G	H	I	L	M
CODICE:											
Esempio di codice	5	4	3	2	1	1	8	7	1	0	S	0

5A : ONE elettrico	1: 1/4"	2 : 20 µm	0 : No	[illegible]	4: 0,5-4 bar	5: V3V manuale+V3Velettrica	0: No	0: Senza boccola	S: Safe air	0: Pressostato M8 + Valvola max + REED M8
	2: 3/8"	5 : 5 µm	1 : Si	[illegible]	8: 0,5-8 bar	6: V3V man luc e V3V elettr.	1: Si			1: Pressostato M8 + Valvola max + HALL M8
	3: 1/2"					7: V3V man. e APR elettr.				2: Pressostato M8 + Valvola max + REED 2F
	4:3/4					8: V3V man.lucc e APR elettr.				3: Pressostato M8 + Valvola max + HALL 3F
	5:1"					9: Solo V3V elettrica				4: Pressostato M8 + Valvola max + HALL ATEX
						A: Solo APR elettrico				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 + S/ZA Valvola max + REED M8
										B: Pressostato M8 + S/ZA Valvola max + HALL M8
										C: Pressostato M8 + S/ZA Valvola max + REED 2F
										D: Pressostato M8 + S/ZA Valvola max + HALL 3F
										E: Pressostato M8 + S/ZA Valvola max + HALL ATEX
										F: Pressostato 2m + S/ZA Valvola max + REED M8
										G: Pressostato 2m + S/ZA Valvola max + HALL M8
										H: Pressostato 2m + S/ZA Valvola max + REED 2F
										I: Pressostato 2m + S/ZA Valvola max + HALL 3F
										L: Pressostato 2m + S/ZA Valvola max + HALL ATEX

Questo certificato perde la sua validità, in caso di modifiche alla macchina che possano influire sulla conformità ai requisiti essenziali di sicurezza o sulle condizioni d'uso previste,dalla Direttiva 2006/42/CE del 9 giugno 2006 così come trasposto nelle leggi nazionali applicabili. La macchina presa in esame rientra nell'elenco dell'allegato V al punto 5.

This certificate shall be deemed to be void, in case of modification to the machinery where this may affect conformity with the essential safety requirements or the prescribed conditions of use of the machinery directive nr 2006/42/EC of 9 June 2006 as transposed in the applicable law(s). The machinery examined follow under the annex V list at point 5.

Luogo/*Place*: **Padova (Italy)** Data/*Date*: **03/12/2014**	Firmato da/ *Signed by*: **Massimo Capitozzo** Firma/ *Signature*:

ATTESTATO DI ESAME VOLONTARIO
VOLUNTARY EXAMINATION CERTIFICATE
TC1250/21/AD/ad

Titolare del certificato *Certificate Holder*	Metal Work S.p.A. Via Segni, 5/7/9 25062 Concesio (BS)
Prodotto *Product*	Gruppo trattamento aria Serie ONE, in serie ad una valvola 3/2 elettropneumatica monostabile con monitoraggio della spola e della pressione
Caratteristiche tecniche *Technical characteristics*	Vedi documenti di riferimento *Refers to relevant documents*
Norme di riferimento *Reference standards*	EN ISO 13849-1:2015 / EN ISO 13849-2:2012 ISO 19973-1:2015 / ISO 19973-2:2015/Amd.1:2019
Documenti di riferimento *Relevant documents*	Technical report n° TC1247/21/AD/ad rev.0 del 27/09/2021

A seguito del ri-esame dei seguenti documenti / *After re-examination of the following documents*

- *Design verification and test report n° P14101/14/PC/mc rev1 dated 28th May 2018*

non essendo intervenute modifiche sui suddetti prodotti / *without modifications has been carried out on the aforementioned products.*

Il prodotto descritto nei documenti di riferimento, per la funzione di interruzione dell'alimentazione e la messa a scarico del ramo di circuito pneumatico collegato con la porta 2 è idoneo all'impiego in SRP/CS (parti dei circuiti di comando con funzione di sicurezza) fino a PL=e (EN ISO 13849-1:2015) per le versione ONE SAFE AIR.

Si è determinato un B_{10d} di 20.000.000 di cicli mediante il metodo di determinazione descritto nella norma UNI EN ISO 13849-1:2015 (Allegato C).

Product described in relevant documents, for function of air supply interruption and exhaust of the line connected to port 2 is suitable for use in SRP/CS (safety related parts of control systems) up to PL=e (EN ISO 13849-1:2015) for version ONE SAFE AIR.

The B_{10d} has been assessed in 20.000.000 cycles with determination method stated in the standard UNI EN ISO 13849-1:2015 (Annex C).

Luogo *Place*	**Data** *Date*	**Emesso da** *Issued by*
Milano	**05/11/2021**	**Alessandro D'ACQUARICA**

Il presente documento è da intendersi come rinnovo del precedente certificato P14102/14/MC/mc rev1 datato 28/05/2018 / *This document is intended as a renewal of the previous certificate P14102/14/MC/mc rev1 dated 28/05/2018.*

Questo certificato perde la sua validità ed il titolare si farà esclusivo carico delle conseguenze del suo utilizzo in caso di modifiche al prodotto che possano influire sulla sua conformità alle norme o sulle condizioni d'uso previste / *This certificate shall be deemed to be void and the holder shall alone bear any consequences pursuant to its use, in case of modification to the product where this may affect its conformity with standards or the prescribed conditions of use.*

Questo certificato rimane valido a condizione che non intervengano significative variazioni alle norme applicabili e/o al prodotto / *This certificate remains valid on condition that no significant changes are made to relevant standards and/or to the product.*

Questo certificato rimane valido fino alla conclusione della campagna di prove avviata nel mese di settembre 2021, in accordo alle norme di riferimento, a seguito della quale il fabbricante fornirà relative test report e nuovo valore di B_{10D} / *This certificate remains valid until the end of tests started in September 2021, according to reference stadnards, after which the manufacturer will provide relevant test reports and new B_{10D} value.*

Validità del certificate / *Expiring date of certification*
23 Maggio 2024 / *23th May 2024*

ALLEGATO ALL'ATTESTATO DI ESAME VOLONTARIO

ANNEX TO VOLUNTARY EXAMINATION CERTIFICATE

TC1250/21/AD/ad

Il certificato è valido per le configurazioni come da codifica seguente.

The certificate is valid for configurations as per following codes.

ONE electrical	Air intake	Degree of filtration	Clogged filter signal	Condensate drain	Pressure regulation	Valves	Pressure switch	Air outlet	Miscellaneous, special version
A	B	C	D	E	F	G	H	I	L / M
5	4	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: Pressure switch M8 + Max pressure valve + HALL M8
	4:3/4	5: 5 µm	1: Yes	1: Automatic (RA)	8: 0.5 to 8 bar	6: V3V manual with padlock and V3V electric.	1: Yes		3: Pressure switch M8 + Max pressure valve + HALL 3F
	5:1"					7: V3V manual and APR electric.			6: Pressure switch 2m + Max pressure valve + HALL M8
						8: V3V manual with padlock and APR electric.			8: Pressure switch 2m + Max pressure valve + HALL 3F
						9: Only V3V electric.			
						A: Only APR electric.			

ONE elettrico	Filetto in ingresso	Grado di filtrazione	Segnale filtro intasato	Scarico della condensa	Regolazione di pressione	Valvole	Pressostato	Filetto in uscita	Varie, versioni speciali
A	B	C	D	E	F	G	H	I	L / M
5	4	3	2	1	1	8	7	1	0 / S / 1
54 ONE elettrico	3: 1/2"	2: 20 µm	0: No	0: RMSA	4: 0.5 - 4 bar	5: V3V manuale e V3V elettrica.	0: No	0: Senza boccole	S: Safe air / 1: Pressostato M8 + Valvola massima pressione + HALL M8
	4:3/4	5: 5 µm	1: Yes	1: Automatico (RA)	8: 0.5 - 8 bar	6: V3V manuale lucchetabile e V3V elettrica.	1: Si		3: Pressostato M8 + Valvola massima pressione + HALL 3F
	5:1"					7: V3V manuale e APR elettrica.			6:Pressostato 2m + Valvola massima pressione + HALL M8
						8: V3V manuale lucchetabile e APR elettrica.			8: Pressostato 2m + Valvola massima pressione + HALL 3F
						9: Solo V3V elettrica.			
						A: Solo APR elettrica.			