Technical Data Sheet

COLTRI COMPRESSORS

EFFICIENT LINE

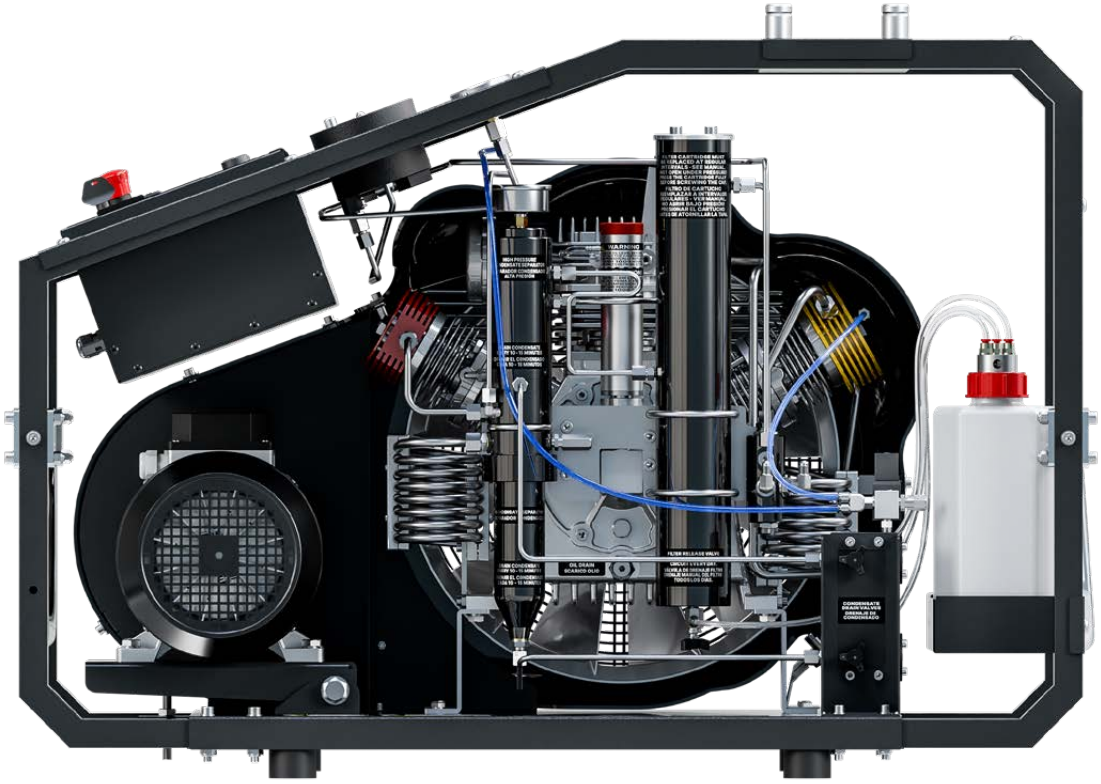
ERGO

ELECTRIC

Contact

Maximum efficiency in motion

Practical and lightweight, **ERGO** combines robustness and great operational efficiency. Equipped with two different pumping units, powered by electric motor, mono-phase or single-phase. It is equipped with a monitoring panel complete with interstage pressure gauges, autostop with adjustable pressure switch, automatic condensate drain and rotation direction control. There are two connections for high pressure hoses (from 232 to 330 bar) and a Maxifilter filter system. The Remote charging pannels, the C-Monitor and the Multi-gas analysis system (SAM) are available as optional



Technical data

Type of gas	Breathing air EN 12021 - Nitrox 40% max O_2 - Helium - Nitrogen
Intake pressure	Atmospheric max 300 mbar
Nominal pressure	250 bar / 330 bar / 360 bar
Working pressure	232 bar / 300 bar / 330 bar
Max working pressure	232 bar / 420 bar
Permissible ambient temperature range	-10° C ÷ +40° C
Permissible altitude	0 ÷ 1.500 m SLM
Max permissible tilt	6°
Design	Fully protective cage
Operating voltage, standard	230 V, 60 Hz / 400 V, 50 Hz
Other operating voltage	230 V, 50 Hz / 440 V, 60 Hz / 230 V, 60 Hz
Oil	Synthetic Coltri Oil ST 755
Oil change interval	1 year / 1.000 h
Frame	Steel - Colour Black RAL 9005 - Powder coating painting - Scratch proof

Compressor

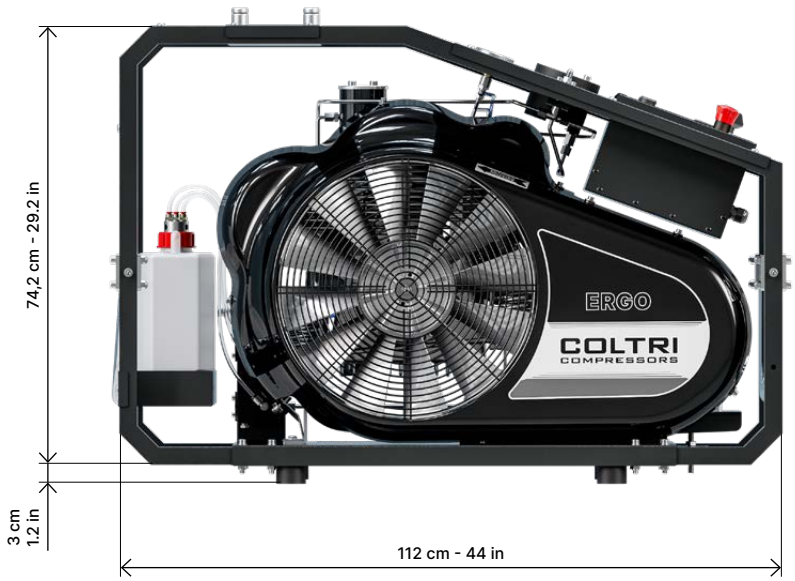
	210 EM	270 EM	235 ET	315 ET
Charging rate Measured during 10 liters cylinder filling from 0-200 bar tolerance +/- 5% at + 20 ° C ambient temperature.	210 l/min 12.6 m³/h 7.4 cfm	270 l/min 16.2 m³/h 9.5 cfm	235 l/min 14.1 m³/h 8.3 cfm	315 l/min 18.9 m³/h 11.1 cfm
Purification System	Maxifilter			
Cooling air flow	1.240 m³/h	2.180 m³/h	1,440 m³/h	2.180 m³/h
Weight[1]	159 kg - 350 lb	147 kg - 324 lb	159 kg - 350 lb	152 kg - 335 lb
Dimensions (W x D x H)[1]	112 × 63 × 77 cm - 44.1 × 24.8 × 30.3 in			
Noise				LpA 78.4 dB

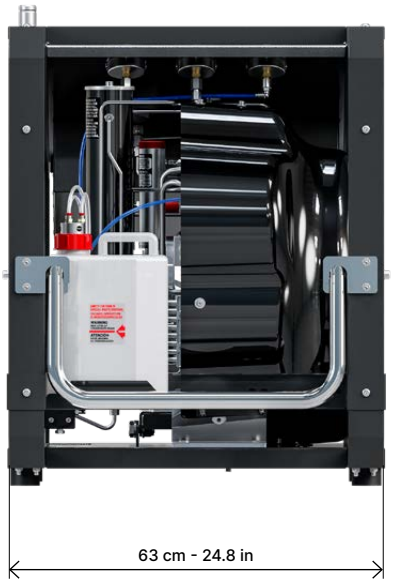
1 Standard model. Dimensions and weight may vary depending on accessories.

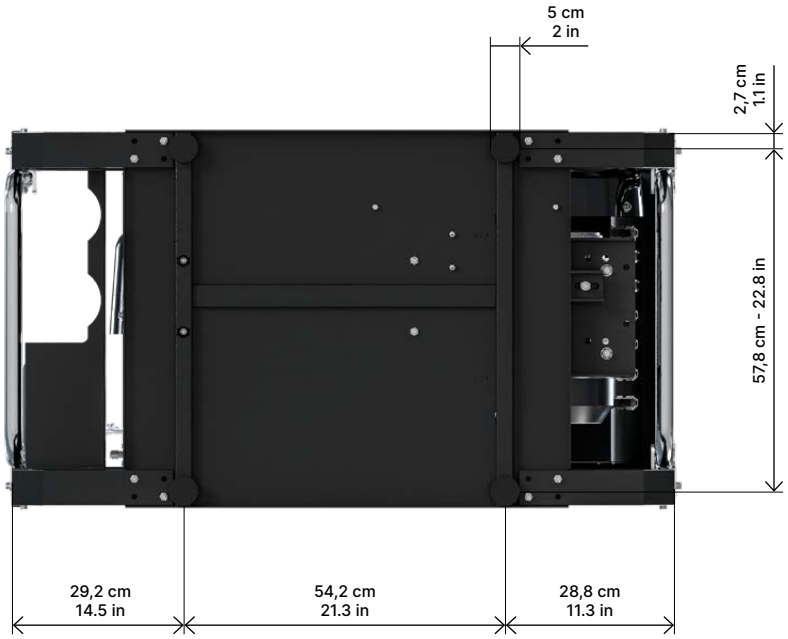
Electric motor

	210 EM	270 EM	235 ET	315 ET
Power	4 kW - 5.5 Hp	5,5 kW - 7.5 Hp	4 kW - 5.5 Hp	5,5 kW - 7.5 Hp
Type	Single-phase electric		Three-phase electric	
Operating voltage/frequency Different voltage / frequency available on request.	230 V, 60 Hz		400 V, 50 Hz	
Rated current	25,2 A	29,7 A	16,8 A	12,6 A
Speed (RPM)	2.850	3.510	2.840	2.850
Protection class	IP54	IP55	IP54	IP55

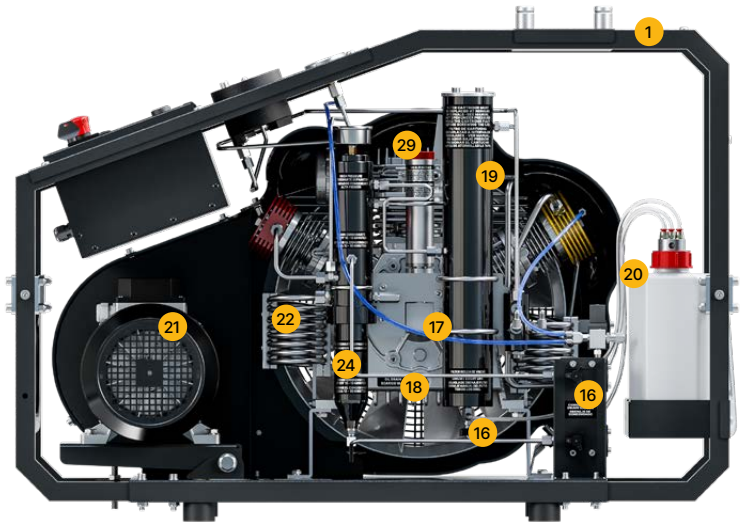
Dimensions

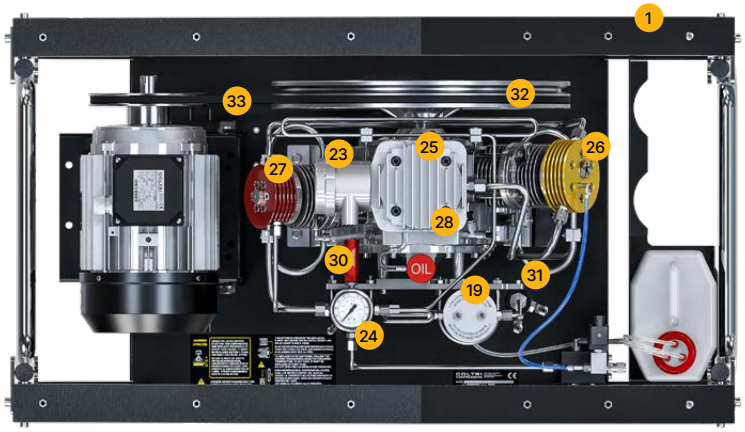

74,2 cm - 29.2 in
3 cm
1.2 in
112 cm - 44 in
ERGO
COLTRI
COMPRESSORS

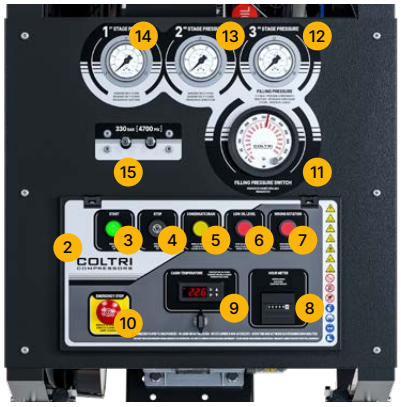

63 cm - 24.8 in


5 cm
2 in
2,7 cm
1.1 in
57,8 cm - 22.8 in
29,2 cm
14.5 in
54,2 cm
21.3 in
28,8 cm
11.3 in

Components

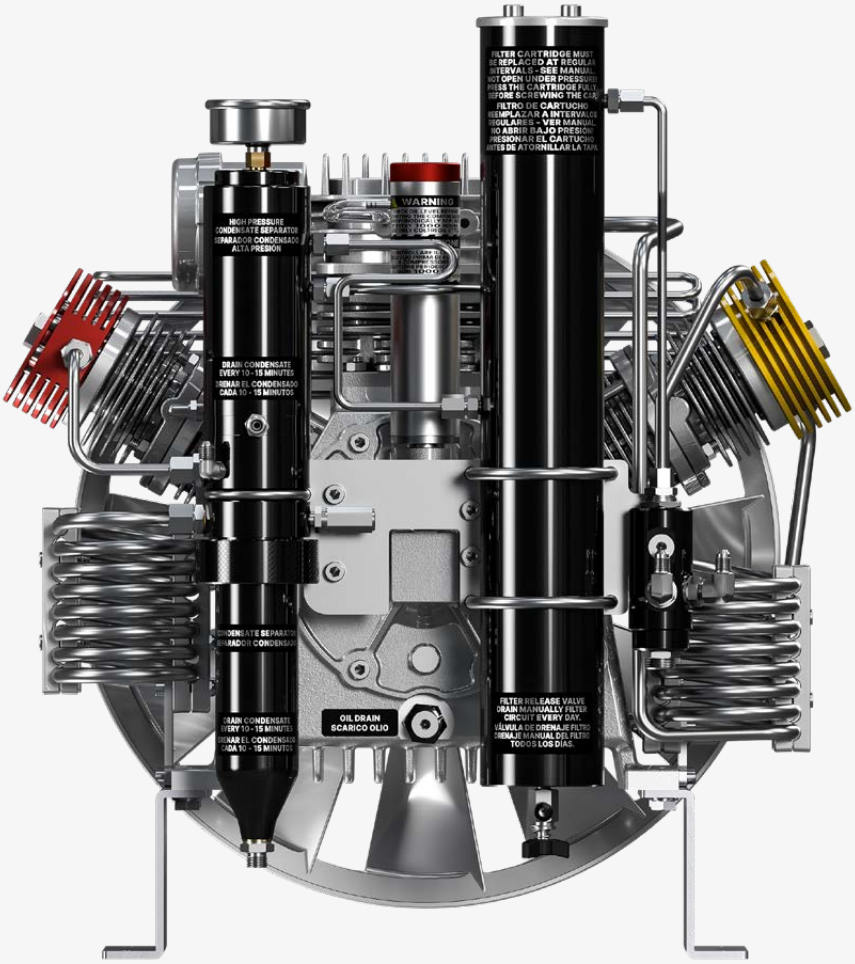






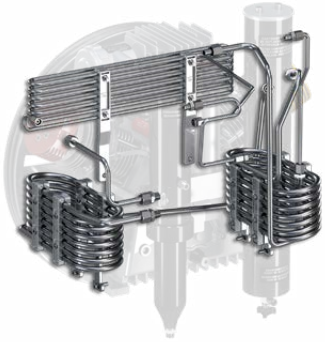
1. Frame
2. Control panel
3. ON pushbutton
4. Stop pushbutton
5. Condensate discharge pushbutton
6. Oil level warning light
7. Direction of rotation indicator light
8. Hour counter
9. Cabinet interior/cooling air temperature
10. Emergency pushbutton
11. Automatic shut off pressure switch
12. 3rd stage pressure gauge
13. 2nd stage pressure gauge
14. 1st stage pressure gauge
15. Refill hoses connection
16. Condensate discharge valves
17. Oil level
18. Oil discharge valves
19. Purifier filter
20. Condensate collection tank
21. Motor
22. Compressor
23. Intake air filter
24. Intermediate condensate separator
25. 1st stage
26. 2nd stage
27. 3rd stage
28. Monoblock crankcase
29. Oil filler plug
30. Safety valve
31. Pressure maintenance valve
32. Cooling fan
33. Belt

Pumping unit MCH 16

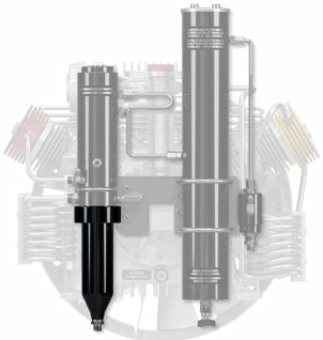


Splash lubrification with conrod pin immersed in oil

Suction filter:
10 µm



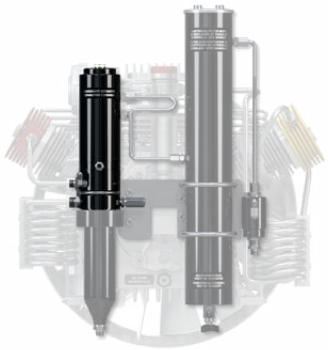
Pipes, fitting and nuts in stainless steel AISI 316



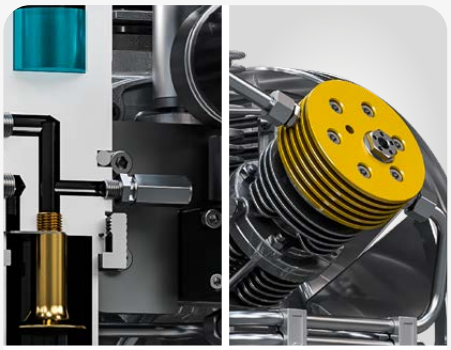
Intermediate condensate separator after the second stage

Synthetic Oil Coltri ST 755 with special formulation for HP compressors

Discover more on Coltri Oil ST 755



High pressure final condensate separator

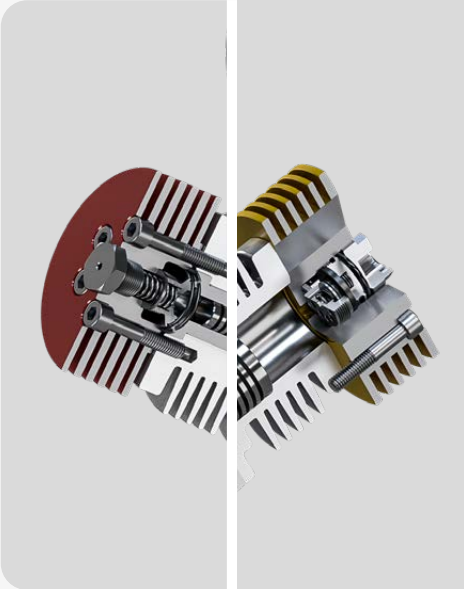


Safety valves after each stage of compression

Die-cast aluminium cylinders with barrel coating in nicasil

Forged aluminum connecting rods

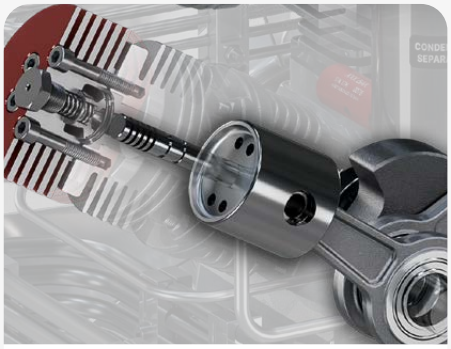
Forged steel crankshaft



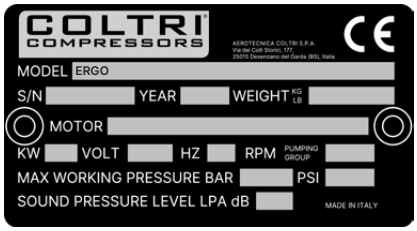
Stainless steel second and third stage valves

Roller Bearings for intensive work load

Third stage in tempered steel with 5 piston rings in special cast iron



Second and third stage with pushing pistons to eliminate lateral forces on the pistons



CE certification

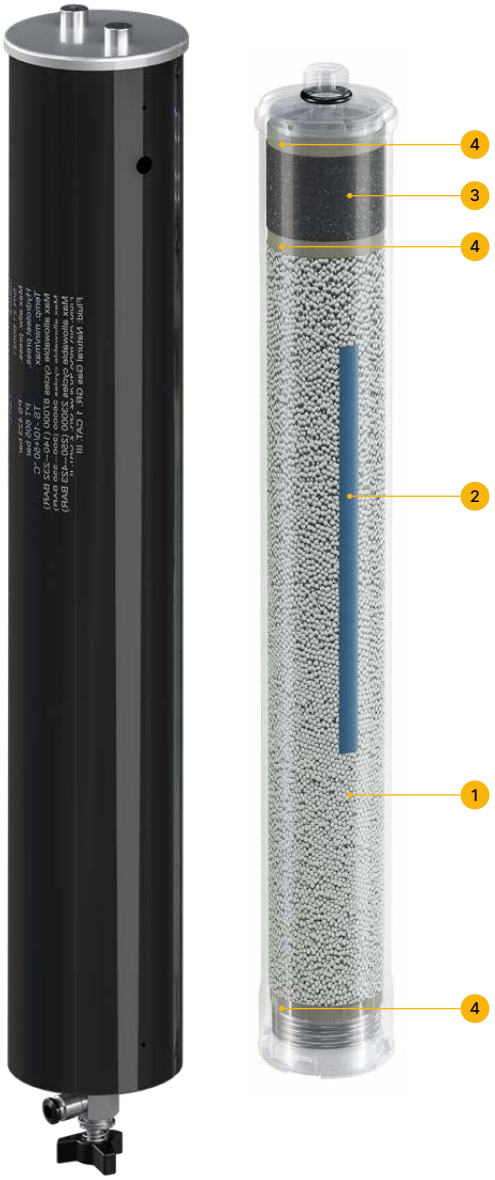
Technical data pumping unit MCH 16

	210 EM	270 EM	235 ET	315 ET
Charging rate Measured during 10 liters cylinder filling from 0-200 bar tolerance +/- 5% at + 20 ° C ambient temperature.	210 l/min 12.6 m^3/h 7.4 cfm	270 l/min 16.2 m^3/h 9.5 cfm	235 l/min 14.1 m^3/h 8.3 cfm	315 l/min 18.9 m^3/h 11.1 cfm
Speed (RPM)	1.040	1.600	1.240	1.600
Number of stages	3			
Number of cylinders	3			
Cylinder bore 1st stage	95 mm			
Cylinder bore 2nd stage	38 mm			
Cylinder bore 3rd stage	14 mm			
Stroke	40 mm			
Direction of rotation (from flywheel side)	Counter clockwise (left)			
Drive type	V-belt A type			
Intermediate pressure 1st stage	~ 6 bar			
Intermediate pressure 2nd stage	~ 45 bar			
Oil sump capacity	1,8 liters			
Max intake pressure	1,3 bar_a – 300 mbar			

Standard equipment

Purification system Maxifilter

MAXIFILTER polypropylene cartridge repackable or disposable



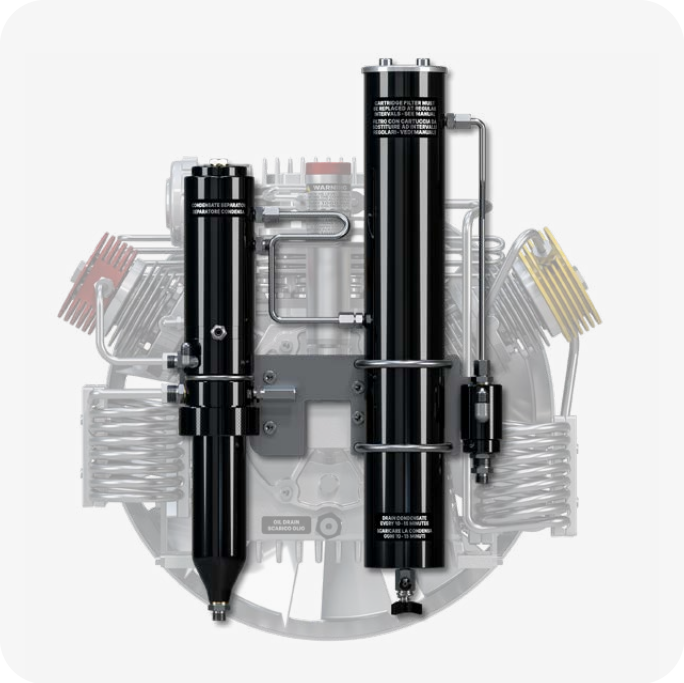
1. Moisture saturation indicator stripe
2. Molecular sieve
3. Activated carbon
4. Felt disc

Purification system	Maxifilter
Operating pressure (Standard)	250 bar / 330 bar / 360 bar
Operating pressure max. (PS)	420 bar
Processable air capacity (air inlet temperature in the filter 20° C at 300 bar)[1]	890 m^3

1 When using a cartridge with CO-removal, the processable air capacity is reduced by ca. 20%.

Separator system

- Interstage separator after 2nd stage ,stainless steel AISI 316.
- Final separator for the removal of oil/water condensate.
- Final safety valve, fitted to separator housing.
- Pressure maintaining/non return valve, fitted to filter bracket.



Contamination	Maximum content as per DIN EN 12021:2014	Air quality*
H_2O	25 mg/m³	≤ 10 mg/m³
CO	5 ppm(v)	≤ 4
CO_2	500 ppm(v)	≤ 500
Oil	0,5 mg/m³	≤ 0,5 mg/m³

* Measured at our facility using ASCO HORA 160 ANALYZER.
1 Only with special filter cartridge with HOPCALITE CO CATALYST. and up to a maximum concentration of 25 ppm CO in intake air.
The compressed clean breathing air then contains a maximum of 5 ppm CO.
2 The level of CO2 in the intake air must not exceed the maximum level of CO2 as per EN 12021:2014
3 Reported values exceed ISO 8573-1 standards.

Filling connection

2 Filling connection to choose from: DRV DIN 232 bar and DRV DIN 300 bar.

Filling connection DRV DIN 232 bar

COD. DRV232

Filling connection DRV DIN 300 bar

COD. DRV300

Filling device	DRV DIN 232	DRV DIN 300
Nominal pressure (PN)	250 bar	330 bar
Technical Specifications	Filling valve with integrated ventilation, with connection for G 5/8" cylinders to EN 144-2 and 477 PN232	Filling valve with integrated ventilation, with cylinder connector G 5/8" according to EN 144-2 and 477 PN300

Compressor control and automatic condensate drain system

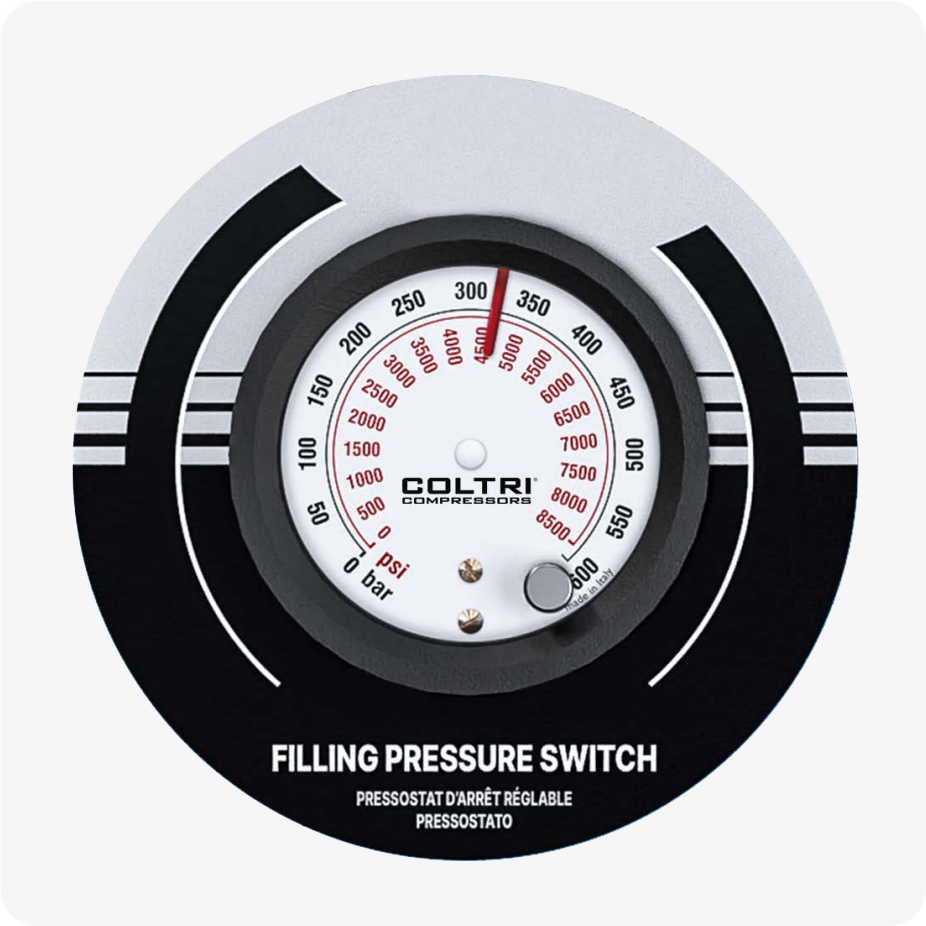
- ON/OFF switch with motor protection switch.
- Optional: autostart at 60 bar hysteresis.
- Transformer.
- Pressure switch stops compressor at final pressure.
- Drainage of all separators between the individual stages and also of the final separator during compressor operation (standard drain interval every 15 minutes for a period of 6 seconds).
- Timer for automatic condensate drainage device.
- Integrated vacuum start-up (automatic drain when the unit is switched off).
- Condensate collection tank 5 liters, with silencer; capacity approx. 3 liters, for environmentally friendly disposal of condensate.
- Interstage pressure gauges display the operating pressure for the individual compression stages. This pressure information allows you to check the tightness of the valves (inlet and outlet) of each stage and quickly identify potential sources of failure.

The interstage pressure gauges are mounted in the compressor frame.

1. Power button
2. Stop button
3. Condensate drain button
4. Oil level warning light
5. Wrong direction indicator light
6. Emergency button
7. Inside temperature cabin/cooled air
8. Operating hour meter

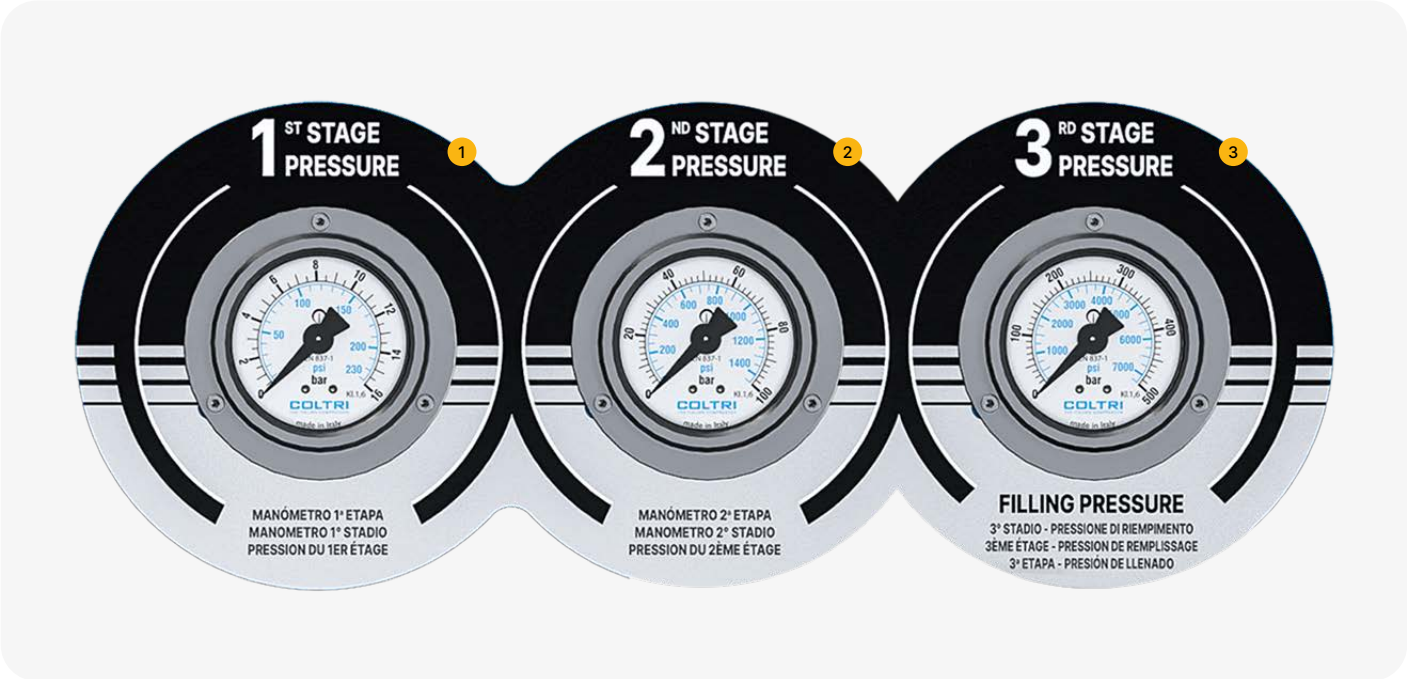
Electromechanical pressure switch

The instrument allows to display the pressure expressed in bar/ psi. Through the adjustment knob it allows to set the maximum pressure of automatic switch-off.



Interstage pressure gauges

The function of the interstage pressure gauges is to show the operating pressure of the individual compression levels. This information is indispensable because it allows to quickly recognize a possible error by checking the tightness of the respective level valves (inlet and outlet). The interstage pressure gauges are mounted on the control panel of the compressor.



2 1st stage pressure gauge

3 2nd stage pressure gauge

4 3rd stage pressure gauge

Plugs available according to electric motor

230 V single-phase electric motor

6h/200 - 250V~

50÷60 Hz

32 A

2P+⏚

230 V three-phase electric motor

9h/200 - 250V~

50÷60 Hz

32 A

3P+⏚

400 V three-phase electric motor

6h/380 - 415V~

50÷60 Hz

16 A

3P+⏚

400 V three-phase electric motor

6h/380 - 415V~

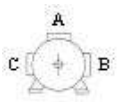
50÷60 Hz

32 A

3P+⏚

Data sheet single-phase electric motor 4 kW

soga®	**SPECIFICA TECNICA MOTORE EL.** *Electric motor technical data sheet*	**Potenza/** *Power* (kW) **4**	**Poli/** Poles **2**
		Data 25/06/2015	Rev. 0

No	Descrizione/*Description*	Dati/Data			*U.d.m.*
1	**Codice Soga** / *ref.code*	125413			
2	**Modello /** *Motor type*	MM1 100LC/2			
3	**Descrizione** / *Description*	Single-phase motor with starting capacitor 4kW 2 Poles 220V 50Hz			
4	**Carcassa motore** / *Framesize*	100L			
5	**Poli** / *Poles*	2			
6	**Forma di costruzione** / *Mounting type*	IM B3			
7	**Potenza nominale** / *Rated output*	4			[kW]
8	**Fattore di servizio** / *Service factor*	1.0			
9	**Tipo di servizio** / *Duty type*	S1			
10	**Tensione** / *Rated voltage*	220			[V]
11	**Frequenza** / *Rated frequency*	50			[Hz]
12	**Corrente nominale** / *Rated current*	25,2			[A]
13	**Velocità nominale** / *Rated speed*	2850			[min^{-1}]
14	**Fattore di potenza** / *Power factor*	0,92			
15	**Coppia nominale motore**/ *Rated motor torque*	13,4			[Nm]
17	**Corrente avviamento / Corrente nominale** *Starting current / Rated current*	3,9			Isp/In
18	**Coppia avviamento / Coppia nominale** *Starting torque/Rated torque*	1,9			Msp/Mn
19	**Classe d'isolamento** / *Insulation class*	F			
20	**Grado di protezione** / *Enclosure*	IP54			
21	**Posizione scatola morsettiera** (motore con piedini) *Terminal box position (motor with feet)* 	A			
22	**Terminali potenza** / *Power leads terminal*	CAVO/ *CABLE*			
23	**Peso /** Weight	18			[kg]
24	**Cuscinetti** /bearings	Drive end	6206		
		Non drive end	6203		

Note/remarks:
Motore con condensatore permanente 80μF e disgiuntore elettromeccanico e condensatore di spunto 160μF.
Motor with 80μF permanent capacitor and centrifugal switch plus 160μF starting capacitor.
Targa con logo Coltri Compressors.

Data sheet single-phase electric motor 5,5 kW

DATA SHEET

Single Phase Induction Motor - Squirrel Cage

Customer	: FERRARI SRL
Sales document	: 21112150
Product line	:

Frame	: 112M	Locked rotor time	: 6 s (hot)
Output	: 5.5 kW (7.5 HP)	Duty cycle	: S1
Poles	: 2	Ambient temperature	: -20 °C to +40 °C
Frequency	: 60 Hz	Altitude	: 1000 m.a.s.l
Rated voltage	: 230 V	Degree of protection	: IP55
Rated current	: 29.7 A	Cooling method	: TEFC
L. R. Amperes	: 223 A	Mounting	: B3L(D)
LRC (p.u.)	: 7.5	Direct of rotation¹	: Both
No load current	: 10.5 A		
Rated speed	: 3510 rpm	Starting method	: Direct On Line
Slip	: 2.50 %	Approx. weight³	: 50.5 kg
Rated torque	: 15.0 Nm		
Locked rotor torque	: 220 %		
Pull up torque	: 185 %		
Breakdown torque	: 260 %		
Insulation class	: F		
Service factor	: 1.15		
Moment of inertia (J)	: 0.0095 kgm²		

Output	50%	75%	100%
Efficiency (%)	81.5	85.5	86.5
Power factor	0.83	0.90	0.93

Load type: -
Load torque: -
Load inertia (J=GD²/4): -

	Drive end	Non drive end
Bearing type	6207-ZZ	6206-ZZ
Lubrication interval	-	-
Lubricant amount	-	-
Lubricant type	MOBIL POLYREX EM	

Foundation loads
Maximum traction : -
Maximum compression : -

Notes:
W22 Single Phase - Start and Run Capacitor

CERTIFIED
WEG MOTORES
Certified document.
Not subject to changes.

Standards

Specification	: IEC 60034-1	Vibration	: -
Tests	: IEC 60034-2	Tolerance	: IEC 60034-1
Noise	: IEC 60034-9		

This revision replaces and cancels the previous one, which must be eliminated.

(1) When viewed from the drive end.

(2) Measured at 1m and with tolerance of +3dB(A).

(3) Approximate weight subject to changes after manufacturing process.

(4) At the rated point.

These are average values based on tests with sinusoidal power supply, subject to the tolerances stipulated in IEC 60034-1.

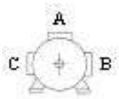
Rev.	Summary of changes	Performed	Checked	Date

Performed by	rjunior		196649/2021	
Checked by	giovanin		Page	Revision
Date	23/07/2021		1/2	1

This document is exclusive property of WEG S/A. Reprinting is not allowed without written authorization.

Data sheet three-phase electric motor 4 kW

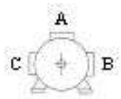
soga®	**SPECIFICA TECNICA MOTORE EL.** *Electric motor technical data sheet*	**Potenza/** *Power* (kW) **4**	**Poli/** Poles **2**
		Data 07/09/2015	Rev. 1

No	Descrizione/*Description*	Dati/Data			*U.d.m.*
1	**Codice Soga** / *ref.code*	124341			
2	**Modello /** *Motor type*	MT1 100LB/2			
3	**Descrizione** / *Description*	Three-phase asynchronous motor 4kW 2 Poles 230/400V 50Hz			
4	**Carcassa motore** / *Framesize*	100L			
5	**Poli** / *Poles*	2			
6	**Forma di costruzione** / *Mounting type*	IM B3			
7	**Potenza nominale** / *Rated output*	4	4	4,8	[kW]
8	**Fattore di servizio** / *Service factor*	1.0			
9	**Tipo di servizio** / *Duty type*	S3-75%			
10	**Tensione** / *Rated voltage*	230/400	230/400	440-480 Y	[V]
11	**Frequenza** / *Rated frequency*	50	60	60	[Hz]
12	**Corrente nominale** / *Rated current*	16,8/9,7	16,8/9,7	9,7	[A]
13	**Velocità nominale** / *Rated speed*	2840	3410	3410	[min^{-1}]
14	**Fattore di potenza** / *Power factor*	0,85	0,85	0,85	
15	**Coppia nominale motore**/ *Rated motor torque*	13,5	11,2	13,4	[Nm]
17	**Corrente avviamento / Corrente nominale** *Starting current / Rated current*	5,5			Isp/In
18	**Coppia avviamento / Coppia nominale** *Starting torque/Rated torque*	2,8			Msp/Mn
19	**Classe d'isolamento** / *Insulation class*	F			
20	**Grado di protezione** / *Enclosure*	IP54			
21	**Posizione scatola morsettiera** (motore con piedini) *Terminal box position (motor with feet)* 	A			
22	**Terminali potenza** / *Power leads terminal*	M5			
23	**Peso /** Weight	22			[kg]
24	**Cuscinetti** /bearings — Drive end	6206			
	Cuscinetti /bearings — Non drive end	6206			

Note/remarks:
Targa con logo Coltri Compressors.

Data sheet three-phase electric motor 5,5 kW

soga®	**SPECIFICA TECNICA MOTORE EL.** *Electric motor technical data sheet*	**Potenza/** *Power* (kW) **5,5**	**Poli/** Poles **2**
		Data 24/06/2015	Rev. 0

No	Descrizione/*Description*	Dati/Data			*U.d.m.*
1	**Codice Soga** / *ref.code*	124421			
2	**Modello /** *Motor type*	MT1 112MB/2			
3	**Descrizione** / *Description*	Three-phase asynchronous motor 5,5kW 2 Poles 400/690V 50Hz			
4	**Carcassa motore** / *Framesize*	112M			
5	**Poli** / *Poles*	2			
6	**Forma di costruzione** / *Mounting type*	IM B3			
7	**Potenza nominale** / *Rated output*	5,5	5,5	6,5	[kW]
8	**Fattore di servizio** / *Service factor*	1.0			
9	**Tipo di servizio** / *Duty type*	S3-75%			
10	**Tensione** / *Rated voltage*	400/690	400/690	Δ 440-480	[V]
11	**Frequenza** / *Rated frequency*	50	60	60	[Hz]
12	**Corrente nominale** / *Rated current*	12,6/7,3	12,6/7,3	12,6	[A]
13	**Velocità nominale** / *Rated speed*	2850	3420	3420	[min^{-1}]
14	**Fattore di potenza** / *Power factor*	0,86	0,86	0,86	
15	**Coppia nominale motore**/ *Rated motor torque*	18,4	15,4	18,2	[Nm]
17	**Corrente avviamento / Corrente nominale** *Starting current / Rated current*	7,6			Isp/In
18	**Coppia avviamento / Coppia nominale** *Starting torque/Rated torque*	3,1			Msp/Mn
19	**Classe d'isolamento** / *Insulation class*	F			
20	**Grado di protezione** / *Enclosure*	IP55			
21	**Posizione scatola morsettiera** (motore con piedini) *Terminal box position (motor with feet)* 	A			
22	**Terminali potenza** / *Power leads terminal*	M5			
23	**Peso /** Weight	28			[kg]
24	**Cuscinetti** /bearings — Drive end	6206			
	Cuscinetti /bearings — Non drive end	6206			

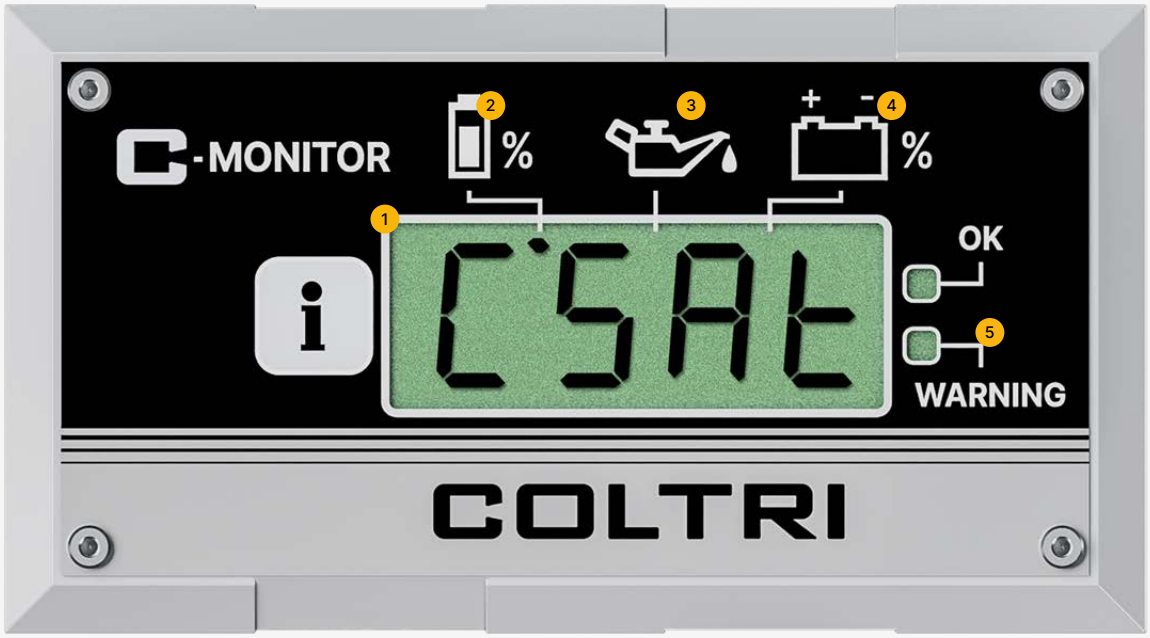
Note/remarks:
Targa con logo Soga.

Optional

C - Monitor

Final filter monitoring system, oil change and technical interface.

The interface consists of an LCD display, a button and two indicators (O,●). The decimal points next to the digits are indicator lights to indicate alarms or warnings in progress. Each dot is associated with an explanatory icon (, ,). The icon ● indicates an alarm condition while the symbol O indicates normal operation. Press the button to scroll through the different functions of the menu. When pressed, the function is displayed the function and after two 2 seconds the related data.



COD. SC001200

1. Display
2. Cartridge saturation
3. Service indication
4. Battery charge level
5. Operation indicator

Multi-Gas Analysis System (SAM)

The Coltri Multi-Gas Analysis System is a measuring instrument capable of monitoring air quality. Its application includes continuous monitoring of environmental gases, hyperbaric chambers, safety, medical, air quality.

If you choose the SAM System,
you cannot also install the Presec System

Available sensors:
- Oxygen O_2
- Carbon dioxide CO_2
- Carbon Monoxide CO
- Humidity H_2O
- Gas Temperature
- VOC (Volatile Organic Compound)
- Helium in Air

Sensor CO + CO_2 + H_2O
COD. SC000727/A

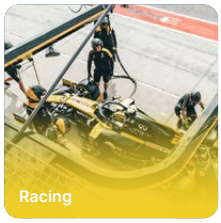
Sensor CO + CO_2 + H_2O with VOC
COD. SC000727/B

General specifications

Input voltage requirement	10-35 Vdc
Internal Battery	Rechargeable lithium-ion battery. One cell 1400 mAh Li ion 3.7 V
Sensors	Up to 6 sensors
Output	Acoustic alarm
Serial Connection	1 RS232 interface. Transmission speed up to 115000 baud, on request RS485 interface
Measurement resolution	Bipolar 24-bit A/D converter. Drift in automatic temperature compensation.
Conversion rate	10 ms
Sampling time	100 ms (min) for each channel
Signal measurement accuracy	0.1% Full scale +/- ½ LSB
Input device	Rotary knob with central push
Color Display	TFT 320 × 240 dot resolution, LED backlighting
Display light intensity	600 nits (cd/m2)
Memory	Micro SD card writer/reader
Microprocessor	Cortex M4

Buzzee Alarm	There is an audible warning alarm on board.
Serial Interface	Standard RS232 interface for connection to PC. it is possible to read measurements remotely and to program the instrument, software is available on request.
Non-volatile Memory	SAM features non-volatile memory that retains configuration data and settings for 10 years without power.

Application fields



Aerotecnica Coltri S.p.A.

Via dei Colli Storici, 177
25015 Desenzano del Garda - Brescia - Italy

Tel. +39 030 9910301
+39 030 9910297

info@coltri.com

DT-TDS-ERGO-25-V2

QUALITY SYSTEM CERTIFICATION DNV ISO 9001

ENVIRONMENTAL SYSTEM CERTIFICATION DNV ISO 14001

SAFETY SYSTEM CERTIFICATION DNV ISO 45001

Printed on paper from
sustainably managed forests

Visit our showroom in Virtual Reality

coltri.com

coltri.com/showroom

COLTRI® COMPRESSORS