What is an ER3000 Series?
- An electropneumatic device
- A PID controller
- A low pressure, low flow, pressure reducing regulator

What is an electropneumatic device?
The user inputs an electronic signal, the device gives a pneumatic output.

What are PIDs?
P=proportional, I=integral, D=derivative PID is one of the oldest controls algorithm, which is commonly used in different industries.

What should you have in order to run an ER3000 Series?
- 24 VDC power supply
- A setpoint signal
- A feedback signal

Can you operate an ER3000 Series without a computer?
Yes. The computer MAY be used to send the setpoint signal (digital), but there are other options (analog signal or a profile already onboard the ER).

Can you tune the ER3000 Series without a computer?
No.

What is "tuning"?
Tuning is the selection of the proper values for your P, I, and D gains so that the system gives you the optimal performance characteristics that include speed, stability, and agility.

Do you have to tune the ER3000 Series periodically?
No. Once the ER3000 Series is tuned for a system in the setup phase, there is no need to re-tune the system, unless the system's conditions and characteristics change so severely that the existing P, I, D values do not deliver the performance goals anymore.

How does ER3000 Series communicate with a computer?
RS485 communication.

What is an A/D and its resolution in the ER3000 Series?
An analog to digital converter and the resolution is 12 bits.

Can one use a digital transducer for feedback to the ER?
No, unless it is converted to an analog signal using a D/A.

What kind of analog signals can I send to the ER3000 Series?
4-20 mA or 1-5 VDC for both setpoint and/or feedback (ER3000XI-X) 0-10 VDC for both setpoint and feedback (ER3000XV-X).

What kind of overall accuracy can I expect from a system with ER3000 Series?
0.1% of the range of the transducer if the transducer has a 0.1% accuracy or better. Otherwise as accurate as the transducer.

What does an ER3000 Series do for my system?
- Control pressure (or flow, etc.) to the given setpoint
- The ER automatically compensates for the changes in the system
- No operator needed in the system once the setpoint is sent
- Easy downloadable profiles eliminate PC or PLC for cycling applications

Accuracy
- Closed loop control
- Every 25 m/sec the ER looks at the setpoint and feedback and goes through the PID loop
- User configurable PID parameters

Communications
- Use Labview, Visual Basic, C
- Use ER3000's software package
- Data connection
- Monitoring using a PC

What does 1 "bit" in the system amount to (w.r.t. pressure or other control variable)?
1 bit is equal to 0.03% of the sensor's range (the sensor that is used for feedback). You can never do better than 1 bit.

Do you lose your PID parameters on the ER when power is lost (or ER is unplugged)?
No.

Do you lose communication with the PC in case of a power loss?
Yes.

Do you lose your communication with the PC, if you are sending an analog setpoint to the ER?
No.

What happens to pressure when power is lost?
For the first 250 m/sec, the ER goes into the failsafe mode. After that since the solenoid valves in the ER are normally closed, the valves will close and the pressure is either trapped (in case the ER3000 Series is mounted into a dead headed system e.g. dome of a regulator) or the pressure would be lost if the ER is in flowing conditions.

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What does "failsafe" mean in the ER3000 Series?
The computer may be used to configure the ER so that the system is driven into the failsafe mode if one or more of the following 5 parameters fall below or go beyond their minimum and maximum values. Notice that the user has the option of changing these minimum and maximum values, or disabling that parameter(s) so that regardless of its value the unit does not go into the failsafe mode. The 5 parameters are: analog setpoint, internal sensor, external sensor, inner error, and outer error. The failsafe mode can also be configured by the user to be one of the following 4 conditions: inlet closed/exhaust open, inlet closed/exhaust closed, inlet open/exhaust open, inlet open/exhaust closed. Once the ER is in the failsafe mode, the PID controller is disabled and the mode stays on until the parameter that caused the condition falls back into its "working" range.

What happens when you lose your analog setpoint source?
If a failsafe range has already been established, once the setpoint goes below its minimum, the ER will go into the failsafe mode (the valves will be open or closed depending on the user selection). If failsafe is disabled for the analog setpoint, then losing the setpoint will be translated into asking for 0 setpoint. The ER will open the exhaust valve, and the pressure is lost.

What happens if the feedback signal is lost?
If a failsafe range has already been established, once the feedback goes below its minimum, the ER will go into the failsafe mode (the valves will be open or closed depending on the user selection). If failsafe is disabled for the feedback, then losing the feedback will be translated into having 0 feedback. The ER will open the inlet valve to bring the feedback up to the setpoint value (if the setpoint is not zero) but obviously the feedback will not change. So the ER will stay full open.

What happens if the pneumatic signal is lost (0-120 psig into the ER)?
The pressure is eventually lost if either solenoid valve opens.

What happens if the communications with PC is lost?
- If the PC was sending a constant setpoint to the unit, the unit will continue on with the last setpoint it received and try to hold the feedback at that level (no major change).
- If the PC was sending a varying setpoint to the ER, the ER will take the very last setpoint (before communication is lost) and hold that as the setpoint.
- If the PC had already downloaded the profile into the ER and started the profile, the profile will continue without interruptions if communication is lost.

- If an analog setpoint was being sent to the ER, the ER3000 Series will not be affected by the loss in communications.

Can the user adjust the PID parameters on the board using pots or jumpers?
No.

What are the things I can do with the boards to setup the system?
Proper jumper position to select between current and voltage setpoint and feedback. You may also use the zero and span push buttons to calibrate the system, but this can be done more easily through the software.

How durable are the solenoid valves?
Clippard (the manufacturer of our valves) cycled them over 100,000,000 times. They stopped not because the valve failed, but because they got tired of running it.

What is the C_V of the solenoid valves?
0.01

Can I use the ER3000 for High Purity applications?
Yes, you will need to couple it with a high purity regulator/transducer.

Can I use it for hydraulic applications?
Yes, you will need to couple it with a hydraulic regulator/transducer.

What is the maximum flow and pressure that I can use the ER for?
As high of a flow and pressure that your mechanical regulator is capable of delivering. If the ER3000 Series is used as a standalone unit, it is a pressure reducing regulator with the following characteristics: P_1(max)= 120 psig / 8.2 bar, P_2(max)=100 psig / 6.9 bar, C_V=0.01, media compatibility: dry clean air, N_2, Argon, loading mechanism: analog or digital setpoint, closed loop system.

Can I use the ER with a back pressure regulator?
Yes. The transducer needs to be on the inlet side of the regulator in this case.

Can I use the ER3000 Series in vacuum service?
- If the ER3000 Series is used as a standalone, connect the vacuum pump to its exhaust port, put the absolute transducer on the outlet of the ER, and operate in the external feedback mode. The inlet may be open to atmosphere, or you may apply up to 120 psig / 8.2 bar, depending on availability of your supply and the flow needed in the system.
- If the ER3000 Series is used with a vacuum service regulator (Type 44-4600, 44-4700, 44-5000, FR, or DV) then the ER3000 Series will act as the pilot to the regulator.

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ER3000 Series
Electropneumatic Controllers/Motors

Description

TESCOM ER3000 Electropneumatic Controller, combined with a wide range of pressure regulators and an external transducer, provides true distributed control of gases or liquids from vacuum to 20,000 psig / 1379 bar. As a stand alone unit, the ER3000 can control the pressure of dry, clean inert gases from 0-100 psig / 0-6.9 bar. It will give your system closed loop feedback control with exceptional accuracy and response time.

Applications

- Test equipment
- Calibration stands
- Production equipment

Features and Benefits

ER3000SI - Standard ER3000

- Precise accuracy
- Compatible pressure regulators available from vacuum to 20,000 psig / 1379 bar with flow capacities of C_V = 0.02 to 45
- Control algorithms for I/P, external feedback, or cascade control modes
- Selectable setpoint signal source
  - External analog: 4-20 mA or 1-5 VDC
  - Digital RS485 (no A/D or D/A boards necessary)
  - Downloaded profile (runs independent of PC)
- Selectable feedback signal source
  - Internal 0-100 psig / 0-6.9 bar sensor
  - External analog: 4-20 mA or 1-5 VDC
- Selectable failsafe features
  - Programmable limits for analog setpoint, feedback, and error signals
  - Failsafe states: hold last pressure, vent, or full open
- Non-interacting zero and span
- Watertight, corrosion resistant NEMA 4X enclosure
- Software provided for data acquisition, PID tuning (real time graphic display of setpoint and feedback), debugging, and pressure profiles
- Protocol software provided for easy customization as a DLL in Windows®, 'C' library in MS-DOS®
- Software examples are provided for LabVIEW™, Visual Basic®, LabWindows/CVI™, and Visual C++®
- As many as 32 ER3000 Controllers can be networked at a distance up to 4000 feet away via a 2-wire RS485 link
- Vacuum may be controlled by only using the ER3000 and a subatmospheric transducer

All ER3000 Series units have CE approval when wired per CE approved wiring instructions in the manual.

Windows®, Visual Basic®, and MS-DOS® are registered trademarks of Microsoft Corp. LabVIEW™ and LabWindows/CVI™ are trademarks of National Instruments.

ER3000SV - Standard ER3000

- All features of the ER3000SI except analog setpoint and feedback signals are 0-10 VDC

ER3000FI and ER3000FV - Enhanced ER3000

- All features of the ER3000SI and ER3000SV are included
- Two additional analog/digital inputs allow the user to:
  - Monitor an external signal in addition to feedback (e.g. flow, temperature)
  - Start/stop (or resume/stop) and pause pressure profiles
  - Alternate between two separate external feedback sources
  - Wait for an event to occur before proceeding to the next step in a downloaded profile (digital input)
  - Indicate that a step has occurred in a downloaded profile (digital output)
- Analog sensor output

ER3000EX and ER3000GX - FM Explosion Proof

- Explosion proof versions of ER3000SX and ER3000FX have Factory Mutual (FM) approval for use in Class I, Division I, Groups B, C, and D areas
- Approvals: FM, CSA, and CE*

ER3000MX and ER3000NX - ATEX Explosion Proof

- Explosion proof versions of ER3000SX and ER3000FX have approval for use in areas per ATEX marking: II 2 G EEx d IIB + H_2 T4
- Approvals: DEKRA/CENELEC and CE*

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ER3000 Series Electropneumatic Controller

Specifications

For other materials or modifications, please consult TESCOM.

ELECTRICAL

Power Requirement
20.5 to 28.5 VDC, 340 mA maximum, 180 mA nominal

Turn-on Time
< 240 milliseconds

Restart from Power Interruption
< 1.9 seconds

SUPPLY REQUIREMENT

Media Type
Clean, dry inert gas, or shop air

Pressure
Minimum: Outlet pressure 1 psig / 0.07 bar
Maximum: 120 psig / 8.3 bar
Nominal: 110 psig / 7.6 bar

Temperature[1]
-20°F to 170°F / -29°C to 77°C (dry media required below 32°F)

Filter
In line 40 micron filter recommended

INPUT SIGNAL

Setpoint
4-20 mA, 1-5 VDC, or Digital RS 485 (0-10 VDC for ER3000XV)

Feedback (external)
4-20 mA or 1-5 VDC (0-10 VDC for ER3000XV)

PERFORMANCE

Accuracy
Linearity: ± 0.05% Full Scale Output (FSO)
Hysteresis: ± 0.05% (FSO)
Repeatability: ± 0.05% (FSO)
Resolution Sensitivity: ± 0.03% (FSO)
Measured Reference Accuracy (total accuracy all effects including zero and span error): ± 0.10 % (FSO)
Temperature Effect
 ± **0.002%:** degrees F of FSO (-20°F to 170°F)
 ± **0.0036%:** degrees C of FSO (-30°C to 77°C)
Low Pressure Capability with External Transducer
 ± 0.25 inches water (0.635 g/sq. cm) into 2 liter volume

Response Time
Lift Off: < 70 milliseconds
Rise Time (10-90 psig / 0.69-6.2 bar): 350 milliseconds (1 cubic inch volume / 32.8 cc)
Fall Time (90-10 psig / 6.2-0.69 bar): 650 milliseconds (1 cubic inch volume / 32.8 cc)
Frequency Response
 Amplitude Attenuation: -3db at 2 Hz
 Phase Shift: -90 degrees at 2 Hz

Flow Capacity: C_V = 0.01 (Maximum Flow = 18 LPM)

Solenoid Valve Rated Cycle Life: > 150 million cycles

1. All temperature conditions for Explosion Proof versions must satisfy:
   -4°F ≤ T ≤ 140°F / -20°C ≤ T ≤ 60°C.
2. Explosion proof versions only.

PHYSICAL

Size
Gas Port (Inlet, Exhaust and Gauge): 1/8 inch - 27 NPTF
Controlled Outlet Port: 1/4 inch - 18 NPTF
Internal Volume: 16.3 cubic inches / 267 cc
Length: 4.2 inches / 107 mm
Diameter: 3.72 inches / 95 mm
Conduit Openings: Two, 1/2 inch NPTF

Weight
34.8 oz / 1.0 kg

House Rating
Standard: NEMA 4X (cast aluminum and epoxy polyester paint)
Explosion Proof Version: CSA and FM approval for Class I, Division I, Groups B, C, and D locations
European Explosion Proof Version: Approved per ATEX (EEx d llB + H_2 T4)

Flow Stream Materials
Solenoids: Nickel-plated Brass, FKM Seat and O-rings
Sensor: Glass, Ceramic, Silicon, RTV, Nickel
Manifold: Glass Filled PET[2]
Tubing: Polyurethane
Plug: Brass
O-Rings: Silicone, Buna-N, FKM

Mounting
Four 8-32 UNC holes

Mounting Orientation Effect
None

ENVIRONMENT

Temperature Range[1]
-20°F to 170°F / -29°C to 77°C

Relative Humidity
98% at 65°C (cover off-no effect)

Vibration
Resonance Sweep: 5-2000 Hz at 0.5 g constant acceleration
Resonance Dwell: 5 minutes at each resonance point (3 axis)
Sine Sweep: 0.5 octaves/minute, 5-2000 Hz (3 axis)
 5-10 Hz at 10 mm constant displacement
 10-2000 Hz at 2.0 g constant acceleration (No effect)

Storage Temperature
-58°F to 200°F / -50°C to 93°C

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ER3000 Series Electropneumatic Controller Installation Drawing

INSTALLATION DIMENSIONS
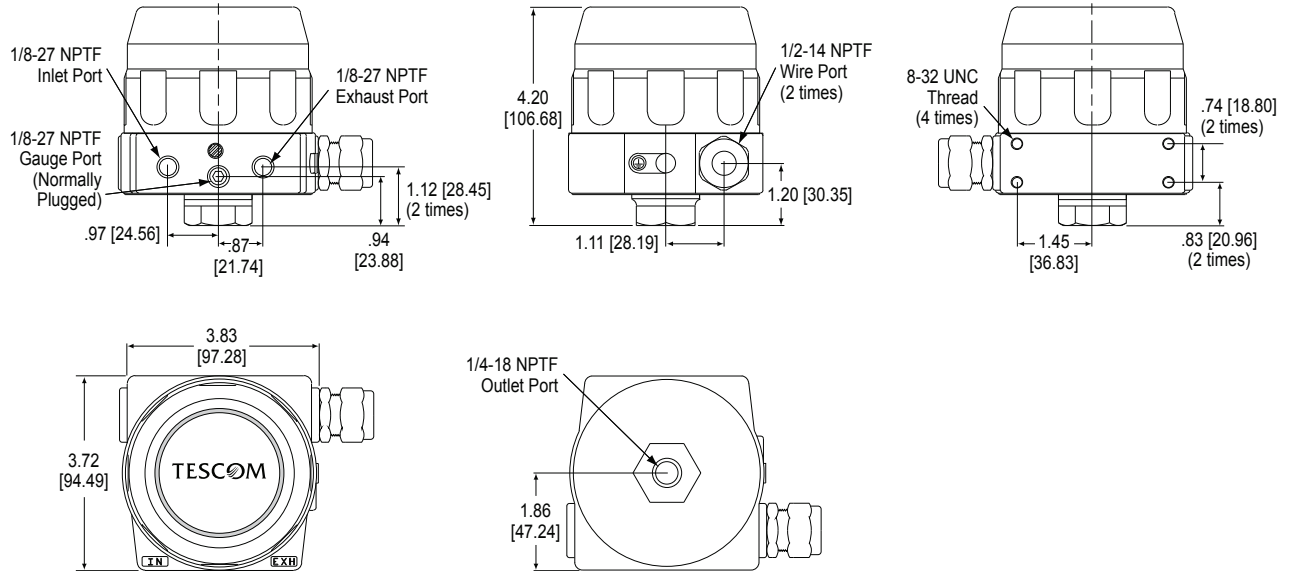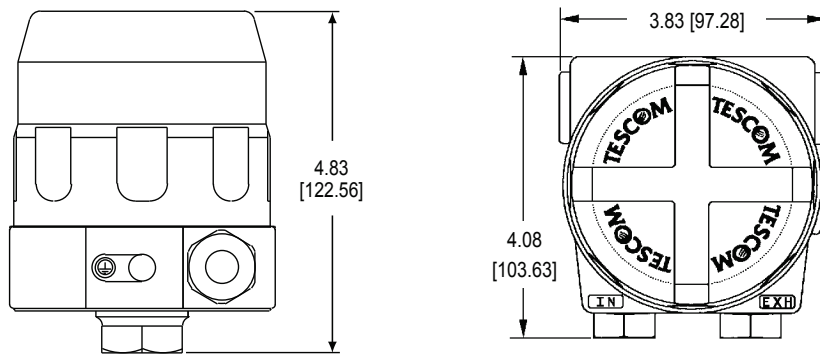
1/8-27 NPTF Inlet Port
1/8-27 NPTF Exhaust Port
1/8-27 NPTF Gauge Port (Normally Plugged)
.97 [24.56]
.87 [21.74]
.94 [23.88]
1.12 [28.45] (2 times)

4.20 [106.68]
1/2-14 NPTF Wire Port (2 times)
1.20 [30.35]
1.11 [28.19]

8-32 UNC Thread (4 times)
.74 [18.80] (2 times)
1.45 [36.83]
.83 [20.96] (2 times)

3.83 [97.28]
3.72 [94.49]
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IN   EXH

1/4-18 NPTF Outlet Port
1.86 [47.24]

MODEL ER3000EX, GX, MX, NX

4.83 [122.56]

3.83 [97.28]
4.08 [103.63]
TESCOM
IN   EXH

All dimensions are reference & nominal
Metric [millimeter] equivalents are in brackets

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ER3000 Typical Applications

The variety of applications is limitless. Any process variable that can be manipulated using the pneumatic output of the ER3000 can be controlled. Some possibilities include controlling pressure, flow, temperature, position, speed, force, consistency, torque, and acceleration. The ER3000 improves both speed and accuracy because it implements the control strategy directly at the control element (valve or regulator). Some possible applications include:

- Test stands
- Calibration
- Laser cutting systems
- Vacuum forming
- Super plastic metal forming
- Plastic extrusion
- Gas assisted plastic injection molding
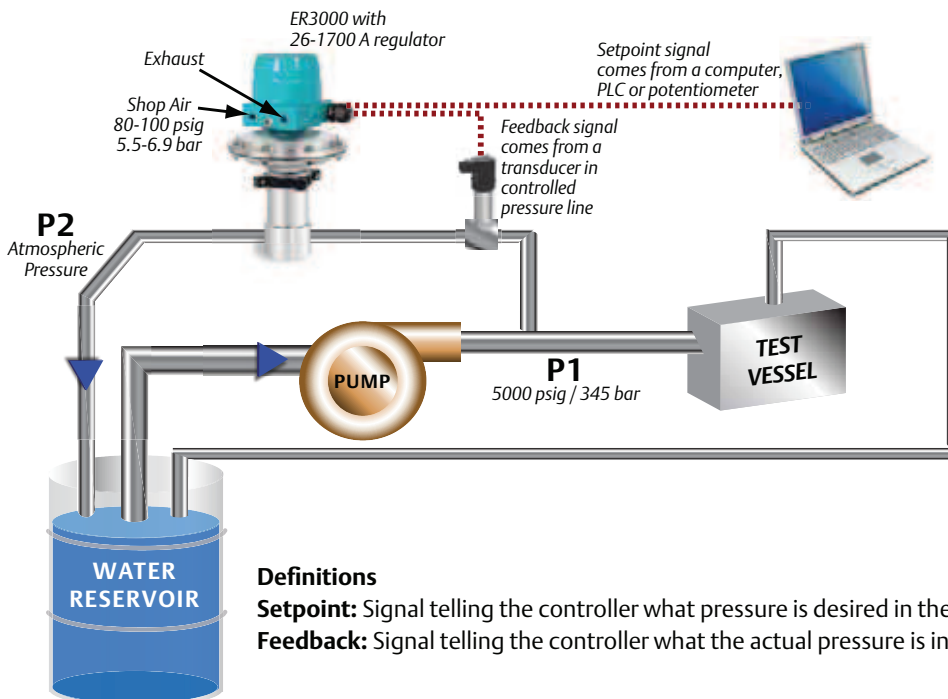- Lamination and composite material curing
- Tire molding

- Chromatography capillary inlet pressure
- Spray coating
- Water jet cutting
- Burst testing
- High pressure gas or liquid injection
- Pilot plants
- Replacement for valve positioners and I/Ps
- Spot welding pressure control

ER3000 Typical Pressure Reducing Application

ER3000 with
26-2000 A regulator

Exhaust

*Shop Air
80-100 psig
5.5-6.9 bar*

*Setpoint signal
comes from a computer,
PLC or potentiometer*

*Feedback signal
comes from a
transducer in
controlled
pressure line*

P1
5000 psig / 345 bar

P2
3000 psig / 207 bar

Pressure to
be controlled

Vent
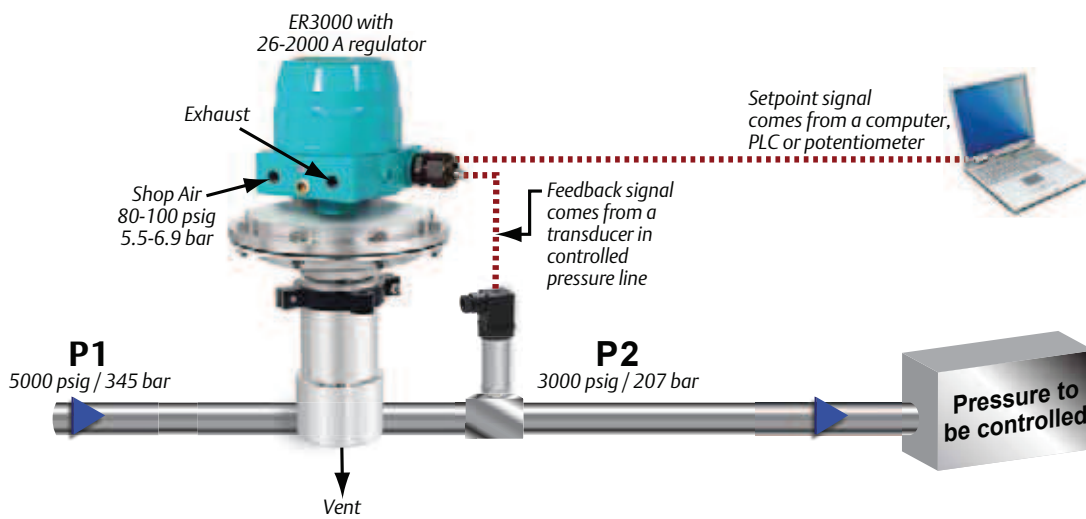
ER3000 Typical Back Pressure Application

ER3000 with
26-1700 A regulator

Exhaust

*Shop Air
80-100 psig
5.5-6.9 bar*

*Setpoint signal
comes from a computer,
PLC or potentiometer*

*Feedback signal
comes from a
transducer in
controlled
pressure line*

P2
*Atmospheric
Pressure*

PUMP

P1
5000 psig / 345 bar

**TEST
VESSEL**

**WATER
RESERVOIR**

Definitions
Setpoint: Signal telling the controller what pressure is desired in the controlled pressure line
Feedback: Signal telling the controller what the actual pressure is in the controlled pressure line

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ER3000 Basics

ER3000 Basics

All ER3000 Controllers require 24 VDC with a minimum of 250 mAmps, up to 120 psig / 8.3 bar shop air supply and a setpoint signal. The ER3000 is shipped configured to accept an analog setpoint, either 1-5 volts or 4-20 mAmps (0-10 VDC for ER3000XV). This can be changed to accept a digital setpoint from a computer over the RS485 network using the provided software. This software also allows the user to tune and monitor the system and acquire data. If the ER3000 is used in External or Cascade mode, an analog 1-5 volt or 4-20 mAmp (0-10 VDC for ER3000XV) feedback signal is also required.

ER3000 Tuning

Since PID parameters need to change between static (dead-ended) and dynamic (flowing) pressure states, the ER3000 has the flexibility to be tuned for different system conditions. The Proportional, Integral, and Derivative (PID) variables are adjustable to:

- Achieve the quickest response to a setpoint change without overshoot or oscillation
- Achieve the best performance for a non-changing setpoint

TESCOM presets PID variables as standard, or customized for a specific TESCOM regulator. The user can then optimize the PID parameters after installation for best possible static and/or dynamic results to satisfy the user's system requirements using communication software provided in Windows® or MS-DOS®.

ER3000 Communication

The ER3000 communicates using a RS485 based protocol developed at TESCOM. The protocol is non-proprietary, allowing users to develop their own software to interface with a device, such as a PLC, that is not MS-DOS® or Windows® based.

ER3000 Software

The ER3000 protocol software is provided to assist in developing process control software that communicates with the ER3000. The protocol is available as a DLL for Windows® and a 'C' library for MS-DOS®. The protocol software uses six functions to communicate to the ER3000. The functions are: StartUp, ReadNetVar, WriteNetVar, ReadProfileSegment, WriteProfileSegment, and Shutdown.

MS-DOS® Programs Provided

TUNE, ERTALK, DEBUG, PROFILE, PROFILE2, AND DATA_LOG.

ER3000 Modifications

ER3020XX-1 Integrated Pressure Control Systems

The base of the ER3020XX-1 is designed to integrate with either a 26-102XXXXA-568 double piston regulator or 269-529-04IM and 269-529-06IM flow boosters. See Modification Table in the Part Number Selector section for details.

ER3000X-2 Low Flow Controller

Designed for use in slow response applications such as analyzers, temperature control or flow control. The ER3000X-2 is equipped with low flow solenoid valves that match the ER response to the system response.

ER3000X-4 High Flow Controller

Designed for use in high flow applications, this ER3000 may be used to deliver up to 5 SCFM / 142 SLPM (C_V=0.09).

ER3000XX-XW Prewired Controller

The ER3000XX-XW is designed to provide a 'turnkey system' for the customer. The unit comes complete with the power supply and converter kit wired directly to the ER3000.

ER3100 Series High Pressure Controller

See ER3100 Series datasheet for information.

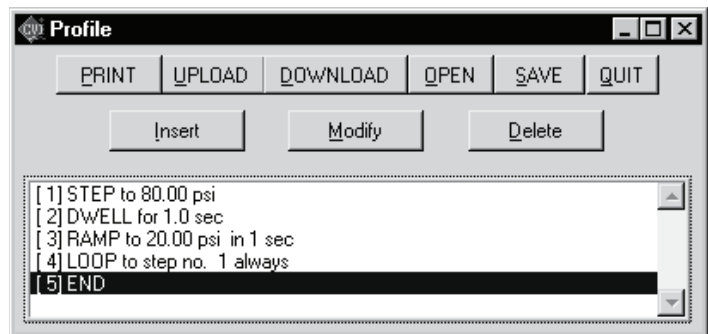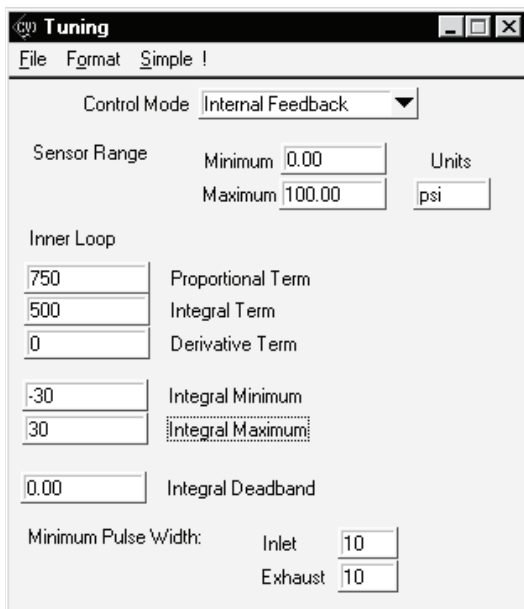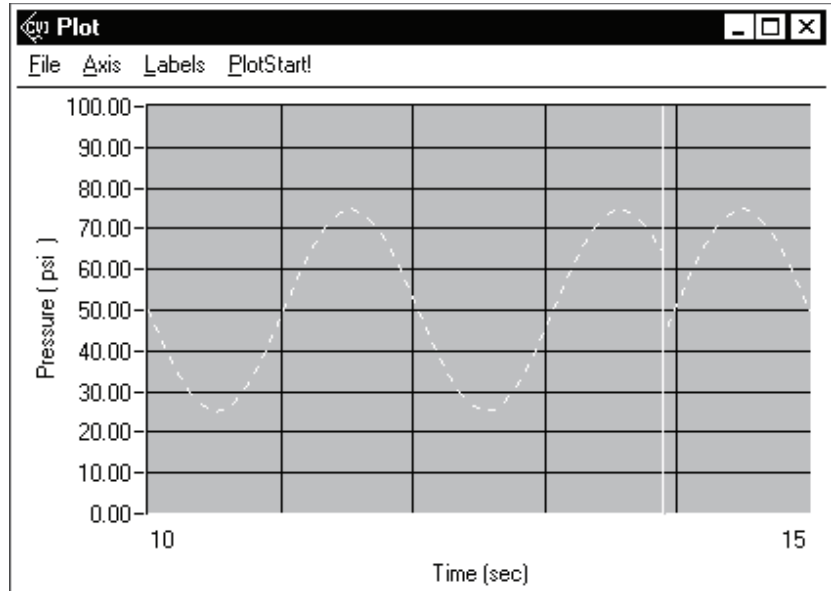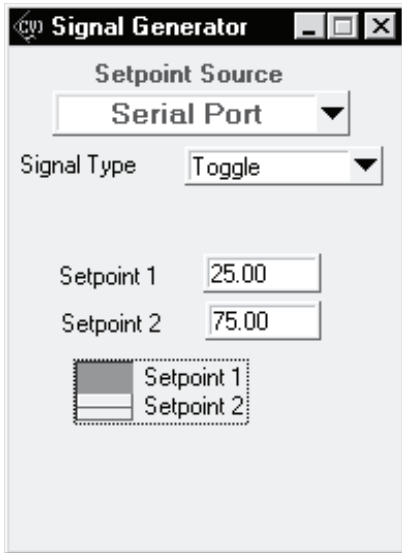## ER3P Series Kit I or Kit II for Pressure Reducing

Provides all the components needed for an ER controlled system. For more details, see ER3P Series datasheet.

ER3B Series Kit I or Kit II for Backpressure

Provides all the components needed for an ER controlled system. For more details, see ER3B Series datasheet.

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ER3000 TESCOM's Windows® Tune Software Features

TESCOM's Windows® Tune program is an all encompassing software package which allows the user to address any ER3000 Controller on the RS485 network and is typically used for simple tuning of ER3000s. Additionally, the Tune program allows you to monitor system operation, alter profiles, specify failsafe limits, enable password protection, read/write internal variables, acquire data and review previously acquired data. The basic screens available are: Signal Generator, Plot, Tuning, Profile, Pulse, Failsafe, Data Acquisition, Dacq View, Miscellaneous, Read/Write, and Password. See examples below.

Signal Generator

Setpoint Source
Serial Port

Signal Type   Toggle

Setpoint 1   25.00
Setpoint 2   75.00

Setpoint 1
Setpoint 2

Plot

File   Axis   Labels   PlotStart!

Pressure (psi)

100.00 —
90.00 —
80.00 —
70.00 —
60.00 —
50.00 —
40.00 —
30.00 —
20.00 —
10.00 —
0.00 —

10   15

Time (sec)

Tuning

File   Format   Simple   !

Control Mode   Internal Feedback

Sensor Range   Minimum 0.00   Units
                Maximum 100.00   psi

Inner Loop

750   Proportional Term
500   Integral Term
0   Derivative Term

-30   Integral Minimum
30   Integral Maximum

0.00   Integral Deadband

Minimum Pulse Width: Inlet   10
                        Exhaust   10

Profile

PRINT   UPLOAD   DOWNLOAD   OPEN   SAVE   QUIT

Insert   Modify   Delete

[1] STEP to 80.00 psi
[2] DWELL for 1.0 sec
[3] RAMP to 20.00 psi in 1 sec
[4] LOOP to step no. 1 always
[5] END

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ER3000 Electropneumatic Controller Part Number Selector

Repair Kits, Accessories & Modifications may be available for this product. Please contact TESCOM for more information.

Example for selecting a part number:

ER3	00	0	S	I	-	1	W

BASIC SERIES	BASE STYLE	INTERNAL SENSOR CONFIGURATION	BOARD CONFIGURATION	CURRENT/VOLTAGE	C_V CONFIGURATION	OPTIONAL
ER3	**00** – Standard **02**[1] – Integrated with 26-1000 and 269-529 **04** – OEM style (no cover) **10**[2] – Integrated with 44-4000 **11**[2] – Integrated with 44-5200	**0** – 0-100 psig 0-6.9 bar 0.1% accuracy **2** – 0-50 psia 0-2.4 bar abs. 0.1% accuracy **3** – 0-150 psia 0-9.3 bar abs. 0.1% accuracy **4** – 0-5 psig 0-0.35 bar 0.25% accuracy	**S** – Standard, setpoint/feedback **F** – 2 extra analog inputs/outputs **E** – Explosion proof **G** – Combines **F** and **E** **M** – ATEX explosion proof **N** – Combines **F** and **M**	**I** – 4-20 mA / 1-5 VDC **V** – 0-10 VDC	**1** – Standard, C_V = 0.01 **2** – Low flow, C_V = 0.001 **4** – High flow, C_V = 0.1	**4** – Prewired[3]

Note: *When combining the ER3000 with a TESCOM regulator or other control device, please indicate the device part number on the order to ensure the ER3000 is programmed with the optimal PID parameters for that combination.*

1. **For Model ER3020XX-1 (Integrated Regulator), order one of the below:**
   - *Regulator 269-529-04IM (Outlet: 0-300 psig / 0-20.7 bar)*
   - *Regulator 269-529-06IM (Outlet: 0-300 psig / 0-20.7 bar)*
   - *Regulator 26-1021D24A-568 (Outlet: 15-10,000 psig / 1.0-690 bar)*
   - *Regulator 26-1022D24A-568 (Outlet: 10-6000 psig / 0.69-414 bar)*
   - *Regulator 26-1024D24A-568 (Outlet: 5-2500 psig / 0.35-172 bar)*
   - *Regulator 26-1025D24A-568 (Outlet: 3-1500 psig / 0.21-103 bar)*
2. *Please see ER3100 Series catalog page for ordering information on that series.*
3. *Optional prewired ER3000 includes power supply and RS485 converter.*

ER3000 Accessories

PART NUMBER	DESCRIPTION
85061	RS232 to RS485 Converter Kit (plugs into standard PC serial port). Includes: 2.75" x 4.8" x 1.2" converter and 6 foot, 9 pin cable
82948	USB to RS485 converter
82919	Potentiometer with digital display
82575-25	Power Supply for ER3000SX (Output: 24 VDC at 250 mA / Input: 120 VAC, 60 HZ)

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Regulator Selection for the ER3000

SPECIFICATION REQUIRED	EXPLANATION
Inlet and Outlet Pressure	For best resolution, select the regulator with an outlet range nearest (yet above) the maximum application pressure. Regulator inlet pressure must be acceptable.
Flow Rate	The regulator should be capable of the correct calculated C_V value for the application.
Media	Media should be compatible with the regulator's materials of construction.

Compatible TESCOM Pressure Regulators

REGULATOR SERIES	MAXIMUM INLET PRESSURE	MAXIMUM OUTLET PRESSURE[1]	FLOW CAPACITY	VENT WITH ER
Pressure Reducing Regulators				
44-40XXXXX-XXX	6000, 3500 psig / 414, 241 bar	3500, 1500, 600 psig 241, 103, 41.4 bar	C_V = 0.7, 2.0	YES
26-10XX-XX-XXXA	15,000, 10,000, 6000 psig / 1034, 690, 414 bar	10,000, 6000, 2500, 1500, 200 psig 690, 414, 172, 103, 13.8 bar	C_V = 0.02, 0.06, 0.12	NO
44-13XX-XXXX-AXXX	4500, 3750 psig / 310, 259 bar	1500, 1000, 600, 400, 300, 200 psig 103, 69.0, 41.4, 27.6, 20.7, 13.8 bar	C_V = 0.8, 2.0	NO
44-11XX-XX-XXXA	10,000, 6000 psig / 690, 414 bar	6000, 2500, 1500 psig 414, 172, 103 bar	C_V = 0.02, 0.05, 0.12	NO
26-20XX-XXXAXXX[2]	15,000, 10,000, 6000 psig / 1034, 690, 414 bar	10,000, 6000, 2500, 1500 psig 690, 414, 172, 103 bar	C_V = 0.02, 0.06, 0.12	YES
44-52XX-XXX[2]	3500 psig / 241 bar	500 psig / 34.5 bar	C_V = 0.06, 0.15	YES
DHDXXXXXXXXXXX	300 psig / 20.7 bar	100 psig / 6.9 bar	C_V = 5.0	YES
DKXXXXXXXXXXXX[2]	1000 psig / 69.0 bar	100, 700 psig / 6.9, 48.3 bar	C_V = 0.35	YES
Backpressure Regulators				
26-23XXXXXXA	500, 100, 60 / 34.5, 6.9, 4.1 bar	N/A	C_V = 0.06, 0.6, 1.0	N/A
44-47XX-XX-XXX	60 psig / 4.1 bar	N/A	C_V = 0.04, 0.30	N/A
26-17XX-XX-XXXA[2]	ten pressures up to 10,000 psig / 690 bar	N/A	C_V = 0.02, 0.1, 0.14, 0.6	N/A
269-350-XXX	100 psig / 6.9 bar	N/A	C_V = 0.6	N/A
269-465-XXX	500 psig / 34.5 bar	N/A	C_V = 0.6	N/A
54-27XXXXXXA	500 psig / 34.5 bar	N/A	C_V = 2.0, 5.0	N/A
Hydraulic Regulators				
54-20XXXXXA	15,000, 10,000 psig / 1034, 690 bar	15,000, 10,000, 6000, 2500, 1500 psig 1034, 690, 414, 172, 103 bar	C_V = 0.06, 0.2	YES
54-21XXXXXA (Backpressure)[2]	15,000, 10,000, 6000, 2500, 1500, 100 psig 1034, 690, 414, 172, 103, 6.9 bar	N/A	C_V = 0.08	N/A
54-22XXXXXA	8000 psig / 552 bar	8000, 5000, 2500, 100 psig 552, 345, 172, 6.9 bar	C_V = 2.0	YES
54-23XXXXXA (Backpressure)	10,000, 5000, 2500, 1150, 200 psig 690, 345, 172, 79.3, 13.8 bar	N/A	C_V = 1.7	N/A
54-28XXXXXA	5000 psig / 345 bar	5000, 3500, 1500, 600, 100 psig 345, 241, 103, 41.4, 6.9 bar	C_V = 8.0	YES
Specialty				
269-529-XX[2]	300 psig / 20.7 bar	90 psig / 6.2 bar	C_V = 1.5-45.0	YES
269-545-XXXXX	10,000, 6000 psig / 690, 414 bar	500 psig / 34.5 bar	C_V = 0.02, 0.06, 0.12	YES

> 1. Maximum outlet pressures are for regulators used with an ER3000 input pressure of 110 psig / 7.6 bar.
> 2. Available as a Kit with all the components needed for an ER controlled system. For more details, see datasheet for ER3P Series for Pressure Reducing or ER3B for Backpressure applications.

EMERSON
Process Management

TESCOM

ER3B Series Kit I or Kit II for Backpressure
Electropneumatic Controllers/Motors

Description

ER3000 BACKPRESSURE KIT I OR KIT II

Engineered to provide all the equipment needed to get your backpressure system up and running with minimum effort. Easy to assemble and configure. Saves money and setup time.

Kit I (unassembled parts) includes:

- ER3000SI -1
- Backpressure Regulator
  54-2100 air loaded or 26-1700 air loaded
- 4-20 mA Feedback Transducer
- ER supply regulator (optional)
- All connections and fittings
- ER Junction Box (optional),
  24 V DC or 100 - 230 V AC versions are available
- Documentation package which includes
  – Operating manual
  – Regulator drawing and wiring diagram

Kit II (parts assembled on plate or in enclosure) includes:
  All components of Kit I completely assembled and
  professionally plumbed together.

Specifications

For other materials or modifications, please consult TESCOM.

OPERATING PARAMETERS FOR REGULATORS

See Part Number Selector

OPERATING PARAMETERS FOR ER3000

Pressure rating per criteria of ANSI/ASME B31.3

Power Supply
  24 V DC, 180 mA nominal, 340 mA maximum

ER Supply Pressure
  110 psig / 7.6 bar, maximum 120 psig / 8.3 bar
  Clean dry air or nitrogen (40μm filter recommended)

Feedback Transducer Signal
  Analog: 4-20 mA
        0.25% or 0.1% accuracy

Setpoint Signal
  Analog: 4-20 mA or 1-5 V DC
  Serial: RS485

Communication Protocol
  RS485
  USB to RS485 and RS232 to RS485 converters available

Windows® is a registered trademark of Microsoft Corp.
Teflon®, Viton-A®, Kalrez® and Vespel® are registered trademarks of E.I. du Pont de Nemours and Company.

Applications

Pneumatic pressure control for:

- Component testing and development
- Pump discharge control
- Burst and proof testing
- Reactor vessel pressure control

Features and Benefits

- All necessary items in one installation kit
- Complete closed loop control system provides precise accuracy
- Windows® user software included for setup, tuning, and data acquisition
- Venting regulator with gauge for ER supply
- Pre-loaded ER3000 PID parameters for quicker start-up
- Junction box for easy wiring

EMERSON
Process Management

ER3B Series Kit for Backpressure Drawings

ER3B-P SERIES KIT I – UNASSEMBLED PARTS
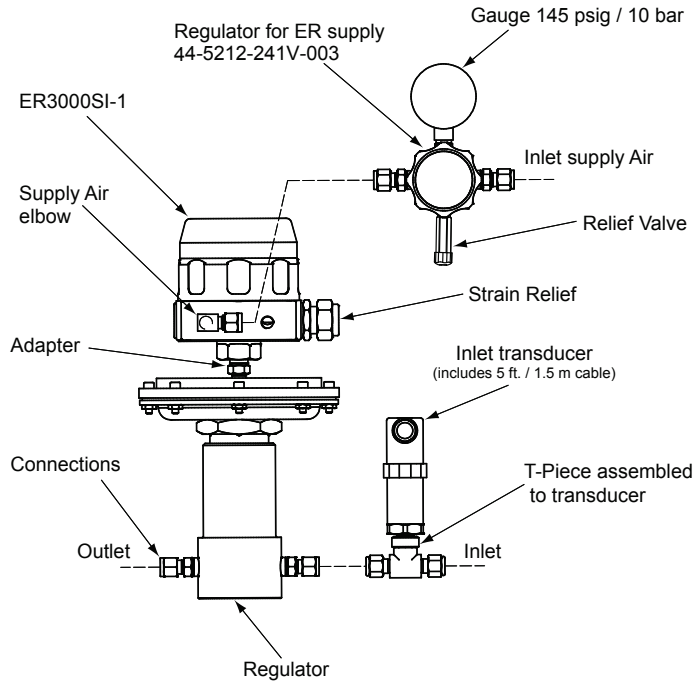
Regulator for ER supply
44-5212-241V-003

Gauge 145 psig / 10 bar

ER3000SI-1

Inlet supply Air

Supply Air elbow

Relief Valve

Strain Relief

Adapter

Inlet transducer
(includes 5 ft. / 1.5 m cable)

Connections

T-Piece assembled to transducer

Outlet

Inlet

Regulator

The Junction box is internally wired and includes an AC/DC power converter (AC input version only), fuses and wire terminal blocks mounted on a DIN rail.

Footprint: 7.9" x 7.9" [200 x 200 mm]
Height: 4.7" [120 mm]

Junction Box (optional)

Supply (230/120 V AC or 24 V DC)

Analog Controls Setpoint (optional)

ER3000

Transducer

Digital Communication (RS485)
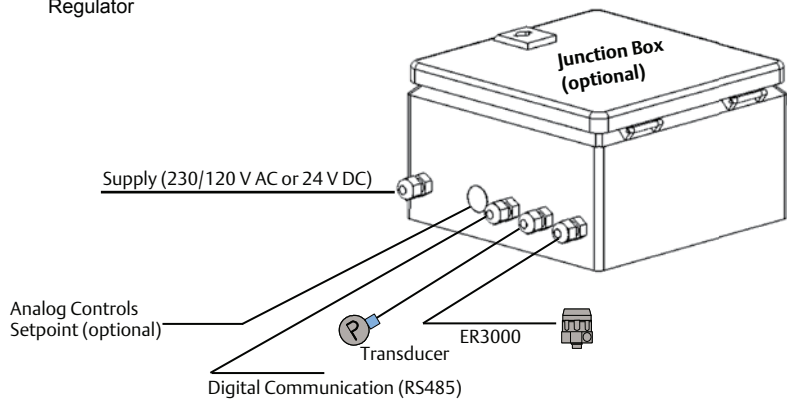
ER3B-L SERIES KIT II – ASSEMBLED ON PLATE

14" [356 mm]

21.7" [551 mm]

ER3B-E SERIES KIT II – IN ASSEMBLED ENCLOSURE
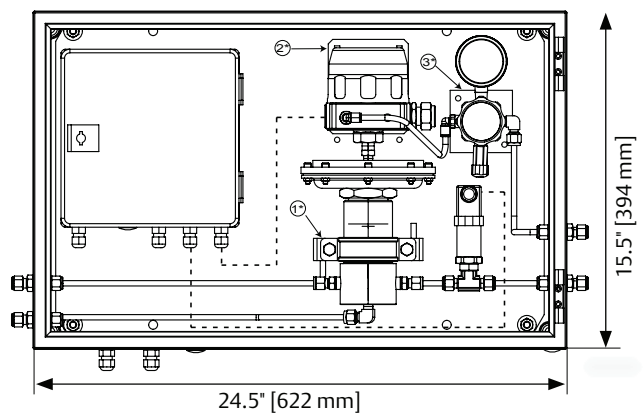
15.5" [394 mm]

24.5" [622 mm]

Please see dash number and corresponding part number in table "Optional Mounting Kits for Unassembled Parts"

All dimensions are reference & nominal
Metric [millimeter] equivalents are in brackets

EMERSON
Process Management

ER3B Series Kit Part Number Selector

Repair Kits, Accessories & Modifications may be available for this product. Please contact TESCOM for more information.

54-2100 Series Kits

Example for selecting a part number:

| ER3B- | P | 6 | A | 7 D | A | 2 | 1 | D 2 |

BASIC SERIES	ASSEMBLY	BODY MATERIAL	REGULATOR SERIES PRESSURE	SEAL MATERIAL	COMPRESSION FITTINGS	TRANSDUCER ACCURACY	ER SUPPLY REGULATOR	JUNCTION BOX
ER3B-	**P** – Unassembled parts **L** – Parts assembled on plate **E** – Parts in assembled enclosure	**6** – Stainless Steel	**A** – 54-2100 air loaded Transducer pressure range: 0-1500 psig / 0-100 bar $C_V = 0.08$ **B** – 54-2100 air loaded Transducer pressure range: 0-3000 psig / 0-160 bar $C_V = 0.08$ **C** – 54-2100 air loaded Controlled pressure range: 0-6000 psig / 0-400 bar $C_V = 0.08$ **D** – 54-2100 air loaded Transducer pressure range: 0-10,000 psig / 0-690 bar* $C_V = 0.08$	**Seat** **6** – Stainless Steel **O-Ring** **D** – Buna-N **T** – Viton® **U** – Urethane **V** – Kalrez® **Z** – Ethylene Propylene	**A** – Ø 6 mm **B** – Ø 8 mm **C** – Ø 10 mm **D** – Ø 12 mm **E** – 1/4" **F** – 3/8" **G** – 1/2"	**1** – 0.1 % **2** – 0.25% **9** – None	**0** – None **1** – Included	**Supply Voltage** **0** – None **A** – AC input** (100-230 V) **D** – DC input** (24 V) **Converter Type** **2** – RS232 to RS485 **U** – USB to RS485 **0** – None
			Assembled versions only available with Ø 6 mm (code A) and 1/4" (code E) compression fittings and tubing which are rated to 8000 psig / 552 bar. **Customer must supply power to the junction box.* *Versions with Ø 6 mm and 1/4" fittings and tubing rated for higher pressure are available for an additional charge.*					

ER3B Series Kit Part Number Selector

Repair Kits, Accessories & Modifications may be available for this product. Please contact TESCOM for more information.

26-1700 Series Kits

Example for selecting a part number:

ER3B-	P	6	F	7 D	A	2	1	D 2
BASIC SERIES	**ASSEMBLY**	**BODY MATERIAL**	**REGULATOR SERIES PRESSURE**	**SEAL MATERIAL**	**COMPRESSION FITTINGS**	**TRANSDUCER ACCURACY**	**ER SUPPLY REGULATOR**	**JUNCTION BOX**
ER3B-	**P** – Unassembled parts **L** – Parts assembled on plate **E** – Parts in assembled enclosure	**6** – Stainless Steel	**F** – 26-1700 air loaded Transducer pressure range: 0-1500 psig / 0-100 bar C_V = 0.14 **B** – 26-1700 air loaded Transducer pressure range: 0-3000 psig / 0-160 bar C_V = 0.1 **C** – 26-1700 air loaded Controlled pressure range: 0-6000 psig / 0-400 bar C_V = 0.1 **D** – 26-1700 air loaded Transducer pressure range: 0-10,000 psig / 0-690 bar* C_V = 0.1	**Seat** **3** – Teflon® **7** – Vespel® **O-Ring** **D** – Buna-N **T** – Viton® **Seat** **0** – CTFE **7** – Vespel® **O-Ring** **D** – Buna-N **T** – Viton®	**A** – Ø 6 mm **B** – Ø 8 mm **C** – Ø 10 mm **D** – Ø 12 mm **E** – 1/4" **F** – 3/8" **G** – 1/2"	**1** – 0.1 % **2** – 0.25% **9** – None	**0** – None **1** – Included	**Supply Voltage** **0** – None **A** – AC input** (100-230 V) **D** – DC input** (24 V) **Converter Type** **2** – RS232 to RS485 **U** – USB to RS485 **0** – None

*Assembled versions only available with Ø 6 mm (code A) and 1/4" (code E) compression fittings and tubing which are rated to 8000 psig / 552 bar.
**Customer must supply power to the junction box.
Versions with Ø 6 mm and 1/4" fittings and tubing rated for higher pressure are available for an additional charge.

DASH NUMBER	PART NUMBER	OPTIONAL MOUNTING KITS FOR UNASSEMBLED PARTS
1	D54177	Mounting bracket and hardware for ER supply regulator
2	D54178	Mounting bracket and hardware for ER3000
3	D54179	Mounting bracket and hardware for 26-1700 and 54-2100 Series process regulators

EMERSON
Process Management

ER3P Series Kit I or Kit II
Electropneumatic Controllers/Motors

Description

ER3000 PRESSURE REDUCING KIT I OR KIT II

Engineered to provide all the equipment needed to get your pressure reducing system up and running with minimum effort. Easy to assemble and configure. Saves money and setup time.

Kit I (unassembled parts) includes:
- ER3000SI-1
- Pressure reducing regulator flow booster, DK dome loaded, DK air loaded, 44-52V air loaded or 26-2000 air loaded
- 4-20 mA Feedback Transducer
- ER supply regulator (optional)
- All connections and fittings
- ER junction box (optional), 24 V DC or 100-230 V AC versions are available
- Documentation package which includes
  - Operating manual
  - Regulator drawing and wiring diagram

Kit II (parts assembled on plate or in enclosure) includes:
All components of Kit I completely assembled and professionally plumbed together.

Specifications
For other materials or modifications, please consult TESCOM.

OPERATING PARAMETERS FOR REGULATORS

See part number selector

OPERATING PARAMETERS FOR ER3000
Pressure rating per criteria of ANSI/ASME B31.3

Power Supply
24 V DC, 180 mA nominal, 340 mA maximum

ER Supply Pressure
110 psig / 7.6 bar, max. 120 psig / 8.3 bar
Clean dry air or nitrogen (40 μm filter recommended)

Feedback Transducer Signal
Analog: 4-20 mA
        0.25% or 0.1% accuracy

Setpoint Signal
Analog: 4-20 mA or 1-5 V DC
Serial: RS485

Communication Protocol
RS485
USB to RS485 and RS232 to RS485 converters available

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Applications

Pneumatic pressure control for:

- Component testing and development
- Pressure sensor calibration and testing
- Vacuum and superplastic metal forming
- Coating applications
- Flow meter calibration
- Catheter / rupture disk testing

Features and Benefits

- All necessary items in one installation kit
- Complete closed loop control system provides precise accuracy
- Windows® user software provided for tuning and data acquisition
- Venting regulators for improved control when increasing and decreasing pressure
- Captured venting with 26-2000 and DK Series - ideal for liquid applications
- Venting regulator with gauge for ER supply
- Pre-loaded ER3000 PID parameters for quicker start-up
- Junction box for easy wiring

EMERSON
Process Management

ER3P Series Kit for Pressure Reducing Drawings
See datasheets of individual components for dimensions

ER3P-P SERIES KIT I – UNASSEMBLED PARTS
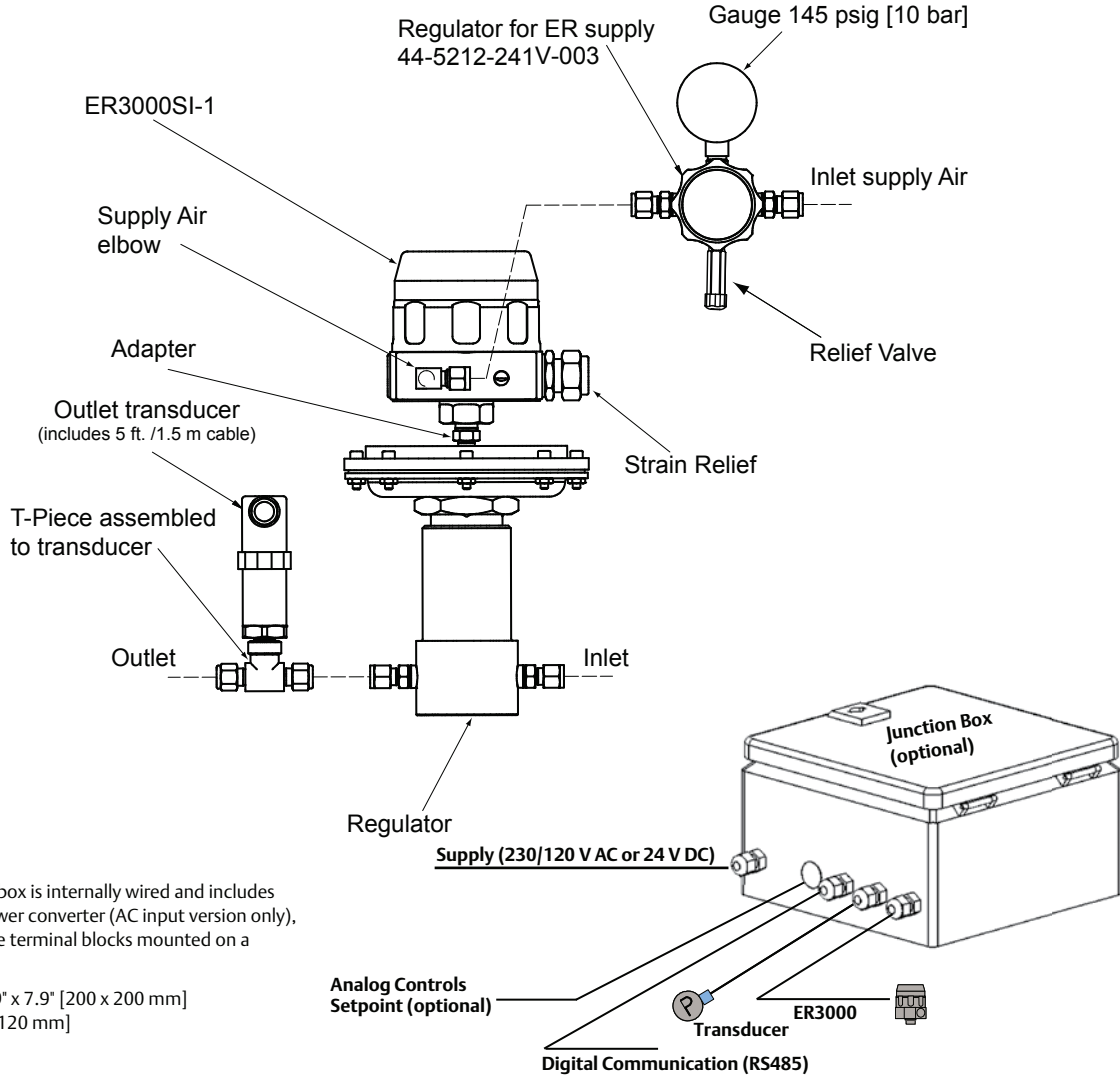
Gauge 145 psig [10 bar]

Regulator for ER supply
44-5212-241V-003

ER3000SI-1

Inlet supply Air

Supply Air
elbow

Relief Valve

Adapter

Strain Relief

Outlet transducer
(includes 5 ft. /1.5 m cable)

T-Piece assembled
to transducer

Outlet

Inlet

Junction Box
(optional)

Regulator

Supply (230/120 V AC or 24 V DC)

The Junction box is internally wired and includes
an AC/DC power converter (AC input version only),
fuses and wire terminal blocks mounted on a
DIN rail.

Footprint: 7.9" x 7.9" [200 x 200 mm]
Height: 4.7" [120 mm]

**Analog Controls
Setpoint (optional)**

ER3000

Transducer

Digital Communication (RS485)

ER3P-L SERIES KIT II – ASSEMBLED ON PLATE

14" [356 mm]

21.7" [551 mm]
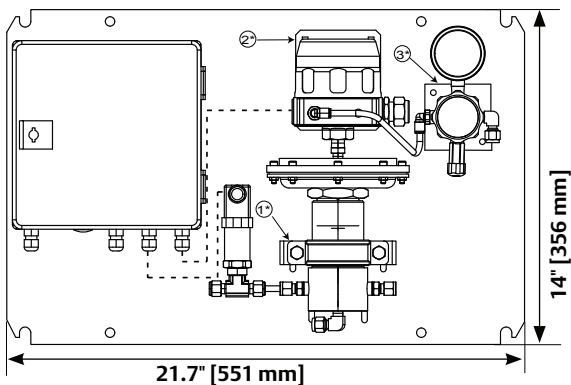
ER3P-E SERIES KIT II – IN ASSEMBLED ENCLOSURE

15.5" [394 mm]

24.5" [622 mm]
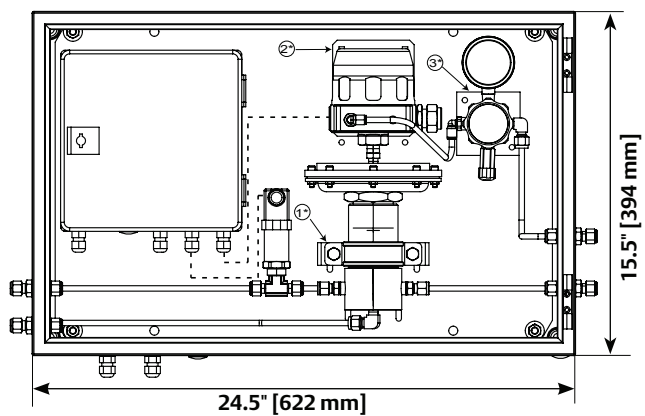
Position for mounting kits, please see dash number and corresponding part number in table "Optional Mounting Kits for Unassembled Parts"

All dimensions are reference & nominal
Metric [millimeter] equivalents are in brackets

ER3P Series Kit Part Number Selector

If you use the ER3000 Kit without optional transducer, please refer to the datasheets for regulator pressure ranges.

Repair Kits, Accessories & Modifications may be available for this product. Please contact TESCOM for more information.

Flow Booster Kits

Example for selecting a part number:

ER3P-	P	Z	A	B D	A	2	1	D 2
BASIC SERIES	**ASSEMBLY**	**BODY MATERIAL**	**REGULATOR SERIES**	**SEAL MATERIAL**	**COMPRESSION FITTINGS**	**TRANSDUCER ACCURACY**	**ER SUPPLY REGULATOR**	**JUNCTION BOX**
ER3P-	**P** – Unassembled parts **L** – Parts assembled on plate **E** – Parts in assembled enclosure	**Z** – Zinc	**A** – Flow Booster Transducer pressure range: 0-100 psig / 0-6 bar Inlet pressure: 300 psig / 20.7 bar C_V = 1.5 **B** – Flow Booster Transducer pressure range: 0-100 psig / 0-6 bar Inlet pressure: 300 psig / 20.7 bar C_V = 2.2	**Seat** **B** – Buna-N **O-Ring** **D** – Buna-N	**A** – Ø 6 mm* **B** – Ø 8 mm* **C** – Ø 10 mm **D** – Ø 12 mm **E** – 1/4"** **F** – 3/8" **G** – 1/2" *Only for flow booster A **Customers must supply power to the junction box.	**1** – 0.1 % **2** – 0.25% **9** – None	**0** – Not included **1** – Included	**Supply Voltage** **0** – None **A** – AC input** (100-230 V) **D** – DC input** (24 V) **Converter Type** **2** – RS232 to RS485 **U** – USB to RS485 **0** – None

DK Series Kits

Example for selecting a part number:

ER3P-	P	6	C	0 Z	A	2	1	D 2
BASIC SERIES	**ASSEMBLY**	**BODY MATERIAL**	**REGULATOR SERIES**	**SEAL MATERIAL**	**COMPRESSION FITTINGS**	**TRANSDUCER ACCURACY**	**ER SUPPLY REGULATOR**	**JUNCTION BOX**
ER3P-	**P** – Unassembled parts **L** – Parts assembled on plate **E** – Parts in assembled enclosure	**1** – Brass **6** – Stainless steel	**C** – DK dome loaded Transducer pressure range: 0-100 psig / 0-6 bar Inlet pressure: 1000 psig / 69.0 bar C_V = 0.35 **D** – DK air loaded Transducer pressure range: 0-600 psig / 0-40 bar Inlet pressure: 1000 psig / 69.0 bar C_V = 0.35	**Seat** **0** – CTFE **8** – PEEK **O-Ring** **D** – Buna-N **T** – Viton® **Z** – Ethylene Propylene	**A** – Ø 6 mm **B** – Ø 8 mm **C** – Ø 10 mm **D** – Ø 12 mm **E** – 1/4" **F** – 3/8" **G** – 1/2" *Customers must supply power to the junction box.	**1** – 0.1 % **2** – 0.25% **9** – None	**0** – None **1** – Included	**Supply Voltage** **0** – None **A** – AC input* (100-230 V) **D** – DC input* (24 V) **Converter Type** **2** – RS232 to RS485 **U** – USB to RS485 **0** – None

44-5200 Series Kits

Example for selecting a part number:

ER3P-	P	6	E	7 T	A	2	1	D 2
BASIC SERIES	**ASSEMBLY**	**BODY MATERIAL**	**REGULATOR SERIES PRESSURES**	**SEAL MATERIAL**	**COMPRESSION FITTINGS**	**TRANSDUCER ACCURACY**	**ER SUPPLY REGULATOR**	**JUNCTION BOX**
ER3P-	**P** – Unassembled parts **L** – Parts assembled on plate **E** – Parts in assembled enclosure	**1** – Brass **6** – Stainless steel	**E** – 44-52V air loaded Transducer pressure range: 0-600 psig / 0-40 bar Inlet pressure: 3500 psig / 240 bar C_V = 0.15	**Seat** **7** – Vespel® **O-Ring** **T** – Viton®	**A** – Ø 6 mm **B** – Ø 8 mm **E** – 1/4" *Customers must supply power to the junction box.	**1** – 0.1 % **2** – 0.25% **9** – None	**0** – None **1** – Included	**Supply Voltage** **0** – None **A** – AC input* (100-230 V) **D** – DC input* (24 V) **Converter Type** **2** – RS232 to RS485 **U** – USB to RS485 **0** – None

EMERSON
Process Management

ER3P Series Kit Part Number Selector

If you use the ER3000 Kit without optional transducer, please refer to the datasheets for regulator pressure ranges.

Repair Kits, Accessories & Modifications may be available for this product. Please contact TESCOM for more information.

26-2000 Series Kits

Example for selecting a part number:

ER3P-	P	6	F	7 T	A	2	1	D 2
BASIC SERIES	**ASSEMBLY**	**BODY MATERIAL**	**REGULATOR SERIES PRESSURES**	**SEAL MATERIAL**	**COMPRESSION FITTINGS**	**TRANSDUCER ACCURACY**	**ER SUPPLY REGULATOR**	**JUNCTION BOX**
ER3P-	P – Unassembled parts L – Parts assembled on plate E – Parts in assembled enclosure	1 – Brass 6 – Stainless Steel	F – 26-2000 air loaded Transducer pressure range: 0-1500 psig / 0-100 bar Inlet pressure: SST - 10,000 psig / 690 bar * Brass - 6000 psig / 414 bar C_V = 0.06 G – 26-2000 air loaded Transducer pressure range: 0-3000 psig / 0-160 bar Inlet pressure: SST - 10,000 psig / 690 bar * Brass - 6000 psig / 414 bar C_V = 0.06 H – 26-2000 air loaded Transducer pressure range: 0-6000 psig / 0-400 bar Inlet pressure: SST - 10,000 psig / 690 bar * Brass - 6000 psig / 414 bar C_V = 0.06 J – 26-2000 air loaded Transducer pressure range: 0-10,000 psig / 0-690 bar Inlet pressure: SST - 10,000 psig / 690 bar * Brass - 6000 psig / 414 bar C_V = 0.06	**Seat** 7 – Vespel® 8 – PEEK **O-Ring** D – Buna-N T – Viton® U – Urethane V – Kalrez® Z – Ethylene Propylene	A – Ø 6 mm B – Ø 8 mm C – Ø 10 mm D – Ø 12 mm E – 1/4" F – 3/8" G – 1/2"	1 – 0.1 % 2 – 0.25% 9 – None	0 – None 1 – Included	**Supply Voltage** 0 – Not included A – AC input ** (100-230 V) D – DC input ** (24 V) **Converter Type** 2 – RS232 to RS485 U – USB to RS485 0 – None

*Assembled versions only available with Ø 6 mm (code A) and 1/4" (code E) compression fittings and tubing which are rated to 8000 psig / 552 bar.

**Customer must supply power to junction box.

Versions with Ø 6 mm and 1/4" fittings and tubing rated for higher pressure are available for an additional charge.

DASH NUMBER	PART NUMBER	OPTIONAL MOUNTING KITS FOR UNASSEMBLED PARTS
1	D54177	Mounting bracket and hardware for ER supply regulator
2	D54178	Mounting bracket and hardware for ER3000
3	D54179	Mounting bracket and hardware for Flow Booster, DK, 26-2000 and 44-5200 Series process regulators

TESCOM

ER3100 Series
Electropneumatic Controllers/Motors

Specifications

For other materials or modifications, please consult TESCOM.

ER3100 SYSTEM

Maximum Inlet Pressure
4500 psig / 310 bar

Maximum Outlet Pressure
400, 900 psig / 27.6, 62.1 bar

Flow Capacity
C_V = 0.7, 2.0

Features and Benefits
- Captured venting
- Fast responding, high flow system
- Compact size
- Includes all the features of the ER3000 Series (0.1% accuracy, onboard PID loop, free software)

ER3110 SYSTEM

Maximum Inlet Pressure
3500 psig / 241 bar

Maximum Outlet Pressure
500 psig / 34.5 bar

Flow Capacity
C_V = 0.06, 0.15

Features and Benefits
- Venting (not captured) or non-venting
- Fast responding, low pressure, low flow system
- Suitable for both static and dynamic applications
- Includes all the features of the ER3000 Series (0.1% accuracy, onboard PID loop, free software)
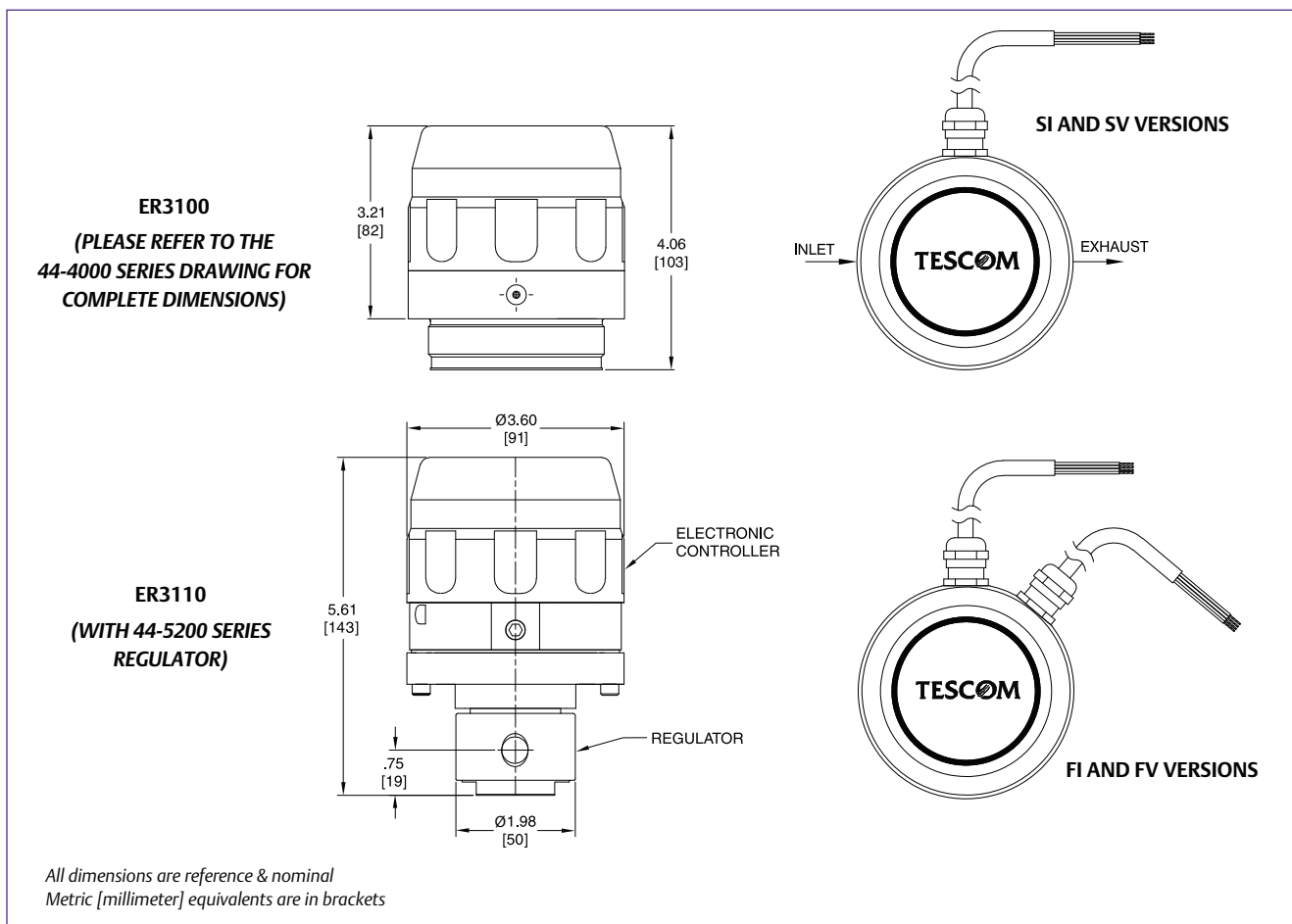

**ER3100
(WITH 44-4000 SERIES REGULATOR)**

**ER3110
(WITH 44-5200 SERIES REGULATOR)**

TESCOM ER3100 Series consists of the ER3000 Series controller and a 44-4000 Series pressure reducing regulator integrated together. Inlet pressures are up to 4500 psig / 310 bar with two different outlet ranges of 400 and 900 psig / 27.6 and 62.1 bar. The ER3100 Series may be ordered with a C_V = 0.7 or a C_V = 2.0. This series offers fast accurate control in applications requiring continuous flow. Also available with the 44-5200 Series regulator (ER3110).

Applications

- Gas assist laser cutting
- OEM equipment

EMERSON
Process Management

TESCOM

ER3100 Series Drawing

ER3100
(PLEASE REFER TO THE 44-4000 SERIES DRAWING FOR COMPLETE DIMENSIONS)

3.21 [82]   4.06 [103]

SI AND SV VERSIONS

INLET   TESCOM   EXHAUST

Ø3.60 [91]

ELECTRONIC CONTROLLER

ER3110
(WITH 44-5200 SERIES REGULATOR)

5.61 [143]

REGULATOR

.75 [19]

Ø1.98 [50]

FI AND FV VERSIONS

*All dimensions are reference & nominal
Metric [millimeter] equivalents are in brackets*

ER3100 Series Part Number Selector

Repair Kits, Accessories & Modifications may be available for this product. Please contact TESCOM for more information.

Example for selecting a part number:

ER31	00	S	I	-	1
BASIC SERIES	**BASE STYLE**	**CONFIGURATION OPTIONS**	**ANALOG SIGNALS**		**MODIFICATIONS**
ER31	**00** **10**	**S -** Standard **F -** Enhanced[2]	**I -** 4-20 mA 1-5 VDC **V -** 0-10 VDC		**1 -** Standard solenoid valves **2 -** Low flow solenoid valves **1W -** Pre-wired

For ER3100 Series, order one of the following regulators:[1]
- **44-40X1XXXXER042** (Outlet: 400 psig / 27.6 bar, C_V = 0.7)
- **44-40X2XXXXER042** (Outlet: 750 psig / 51.7 bar, C_V = 0.7)
- **44-40X1XXXXER046** (Outlet: 500 psig / 34.5 bar, C_V = 2.0)
- **44-40X2XXXXER046** (Outlet: 900 psig / 62.1 bar, C_V = 2.0)

For ER3110 Series, order one of the following regulators:[1]
- **44-52X5XX4N1X34** (Non-venting, Outlet: 500 psig / 34.5 bar, C_V = 0.06)
- **44-52X5XX4N2X34** (Non-venting, Outlet: 500 psig / 34.5 bar, C_V = 0.15)
- **44-52X5XX4V1X34** (Venting, Outlet: 500 psig / 34.5 bar, C_V = 0.06)
- **44-52X5XX4V2X34** (Venting, Outlet: 500 psig / 34.5 bar, C_V = 0.15)

1. The "X" in the regulator part number is to be finalized depending on desired soft goods and port configurations.
2. Enhanced models have extra analog inputs and outputs.

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