



### PRIMA PN

The PRIMA PN test machine, made with a pneumatic actuator, has been designed to run static, semi-static, dynamic and fatigue tests on a large variety of components and materials.

Combined with an RTC 9001 controller and related software, the PRIMA PN system is the ideal solution for use in a range of fields.

Reliability, accuracy and an eye-catching design make the PRIMA PN the perfect test machine for companies aiming to approach the world of cyclical tests.

### Specification

- Designed for static, semi-static and dynamic tests
- Test frequency up to 30Hz
- Lightweight and rigid test frame, made with double column and actuator assembled on the top cross strut
- No need for oil
- High number of compatible accessories
- Test capacity from 50 to 4000 N
- Stroke from 1 to 200 mm
- RTC 9001- RTC 9001-R Controller

### PRIMA PN Pneumatic System



OIL FREE



LOW



HIGH FLEXIBILITY  
AND CONFIGURABLE



TABLE TOP



SIMPLE  
TO USE

### Applications

The PRIMA PN machine can be used in a wide range of applications thanks to the possibility of achieving a number of different configurations in terms of pneumatic actuator strokes.

The simple and intuitive software interface makes the products in the PRIMA PN series perfect for the following sectors:

- *Biomedical*
- *Plastics*
- *Rubber*
- *3D Prints*
- *Springs*
- *Mechanical and composite parts*



Al fine di migliorare le prestazioni tecniche del prodotto, la società si riserva di apportare variazioni senza preavviso.  
In order to improve the technical performances of the product, the company reserves the right to make any change without notice.

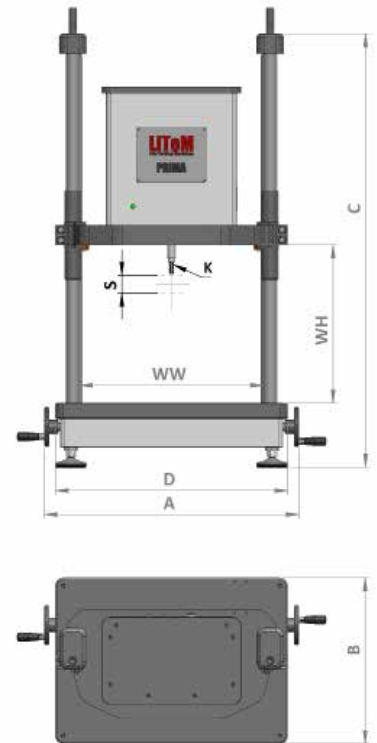
P-PN / 63 - 100 - 5

|     |    |    |    |      |
|-----|----|----|----|------|
| 100 | 80 | 63 | 50 | Bore |
|-----|----|----|----|------|

|     |     |     |    |             |
|-----|-----|-----|----|-------------|
| 200 | 150 | 100 | 50 | Stroke [mm] |
|-----|-----|-----|----|-------------|

|                       |   |    |
|-----------------------|---|----|
| Force transducer [kN] | 5 | 10 |
|-----------------------|---|----|

| TECHNICAL SPECIFICATIONS  | eu  | PRIMA PN                                   |           |           |            |
|---------------------------|-----|--|-----------|-----------|------------|
|                           |     | P-PN-50/S                                  | P-PN-63/S | P-PN-80/S | P-PN-100/S |
| Static force[6 bar]       | N   | 1200                                       | 1800      | 3000      | 4300       |
| Dynamic force[5 bar]      | N   | 1000                                       | 1500      | 2500      | 4000       |
| Test frequency            | Hz  | 0.01 - 30 Hz                               |           |           |            |
| Actuator Stroke           | mm  | 50-100-150-200                             |           |           |            |
| Position sensor accuracy  | mm  | 0.02                                       |           |           |            |
| Load cell                 | kN  | 5  | 5         | 5         | 10         |
| Load cell accuracy        | N   | 1/1000 F.S.                                |           |           |            |
| Controller                |     | Real Time Controller RTC 9001 / RTC9001R   |           |           |            |
| Software                  |     | RTC Software e Tools                       |           |           |            |
| Control procedures        |     | Force - displacement - AUX 1 - encoder     |           |           |            |
| Actuator                  |     | Pneumatic                                  |           |           |            |
| Work pressure             | bar | 6 bar [ Max 10 bar ]                       |           |           |            |
| Cross strut movement      |     | Manual                                     |           |           |            |
| Operating temperature     | °C  | 10 - 40 °C                                 |           |           |            |
| Dimensions [ A x B x C ]  | mm  | 640 x 420 x 1100                           |           |           |            |
| Work area [WW - WH]       | mm  | 475 x 800                                  |           |           |            |
| Compressed air coupling   |     | Direct coupling with air pipe Rilsan D10/8 |           |           |            |
| Weight                    | Kg  | 100  | 100       | 115       | 120        |
| Power supply [Controller] | V   | AC 110-240V 50-60Hz                        |           |           |            |



\*Specify the stroke of the actuator in the machine code

NOTE: The performance of the machine shown in the table may depend on the test specifications and the characteristics of the test sample.

KIT and Accessories

Components included in the KIT

| POS. | COMPONENT   |
|------|---|
| 1    | PRIMA PN test frame   |
| 2    | RTC 9001 controller   |
| 3    | Software RTC 9001, standard version.  |
| 4    | Force sensor complete with counter-plate for mounting on the side of the actuator and plate for mounting on the base  |
| 5    | Air handling unit complete with shut-off valve, pressure regulator, pressure gauge, filter and pre-filter, on-off solenoid valve, 5-metre 24 V DC power cable |
| 6    | Sensor, power supply, connection cables   |
| 7    | PC, monitor 27", Mouse, keyboard  |
| 8    | Calibration reports, user manuals, tutorial videos  |
| 9    | 1 day of training   |

Available accessories

| CODE     | COMPONENT                        |
|----------|----------------------------------|
| A-TS-300 | Base with T-Slot grooves 300x250 |
| A-CP-10  | Compression test plates          |
| A-AV-10  | Quick connection couplings       |
| A-MG     | Manual clamps                    |
| A-SC-100 | Safety cage type A-SC-100        |

## Software & Controller



### RTC 9001 controller

The RTC controllers are perfect control systems for static, dynamic and fatigue testing. The control electronics consists of a processor with a Real Time operating system and high-speed FPGA board for acquiring signals coming from sensors and for the closure of the PID control loop for managing safety limits.

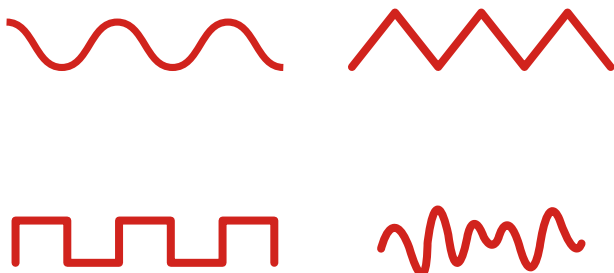
The Integrated Real Time Processor generates various wave forms applied by the connected actuator.

### RTC 9001 Controller - Datalogger

The RTC 9001 controller can be used as a data logger with 8 +/-10V input channels and two incremental encoders. This function requires the activation of Tool Scope software

### Wave forms that can be generated

- In load or displacement with settable speed
- Cyclical tests with constant amplitude with sinusoidal/triangular/square waves
- Variable amplitude tests with profile defined by the user or importable from an external text file or excel file - Requires the activation of the licence for the EDITOR PROFILE software tool



### Types of tests and applications

- 1 STATIC YIELD/FAILURE TESTING
- 2 RIGIDITY TESTING
- 3 DYNAMIC TESTING
- 4 CONSTANT AMPLITUDE FATIGUE TESTING
- 5 CONSTANT AMPLITUDE BLOCK FATIGUE TESTING
- 6 VARIABLE AMPLITUDE FATIGUE TESTING
- 7 REPRODUCTION OF LOAD CURVES



Command panel window

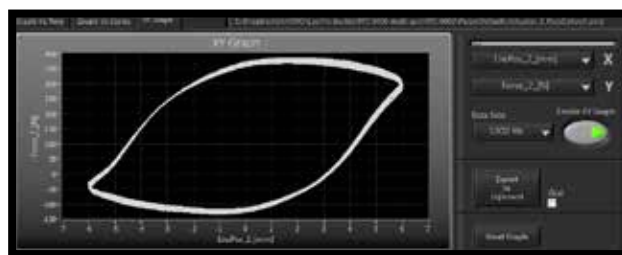
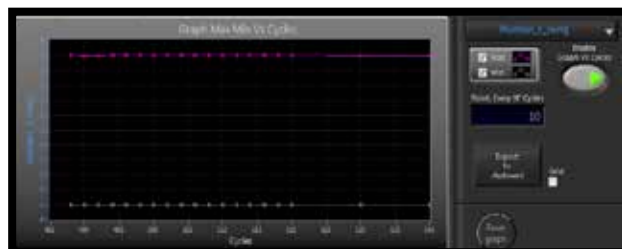


Grafico XY



MAX-MIN Vs Cycle graph

**TECHNICAL SPECIFICATIONS**

| Description                              | RTC 9001  |
|--|---|
| Real Time Controller RTC                 | Yes   |
| Force Channel (control channel)          | Input +/-10V, 16 bit                            |
| Displacement Channel (control channel)   | Input +/-10V, 16 bit                            |
| Auxiliary Channel (control channel)      | Input +/-10V, 16 bit                            |
| Incremental Encoder (control channel)    | Incremental                                     |
| PID output voltage                       | +/-10V  |
| PID Loop Control Frequency Standard      | 1000 Hz   |
| Safety limits                            | Settable by operator                            |
| Panel emergency stop                     | Yes   |
| Remote emergency stop                    | Yes   |
| 4 analog channels in synchronous reading | Can be activated with ST-Scope software licence |
| Power supply                             | AC 110-240V 50-60 Hz                            |

**Software Tool - ST/Scope**

The ST/Scope software tool allows you to have a further four analog channels available with reading-only function. These channels can be acquired and registered by the software synchronously with the other command channels (force, displacement, aux and encoder).

Al fine di migliorare le prestazioni tecniche del prodotto, la società si riserva di apportare variazioni senza preavviso.  
In order to improve the technical performances of the product, the company reserves the right to make any change without notice.



TUTORIAL VIDEO

**DRC Srl**  
PRODUCTION AND SALES  
Via Montesicuro, 58/B - 60131 Ancona (Italy)  
Tel (+39) 071 80 36 077

**EnginLAB Srl**  
RESEARCH AND DEVELOPMENT  
Via Verità 3/a - 35131 Padova (Italy)  
Tel (+39) 049 20 21 489

**GENERAL INFORMATION**  
[info@litem.info](mailto:info@litem.info)

[www.litem.info](http://www.litem.info)