COMPUTERIZED AXIAL FAN STUDY UNIT

Mod. AXD-FAN/EV

INTRODUCTION

The AXD-FAN/EV teaching unit allows the study of characteristic parameters typical of an industrial axial fan. Measurements can be made by varying the operating conditions and compared with the data resulting from the theory. The unit is mounted on a shrouded frame and does not require maintenance. A data acquisition and analysis system for Personal Computer allows you to capture in real time the characteristic data of the AXD-FAN, allowing automatic execution of measurements, production on video or printing of characteristic curves, disk archiving and printing real-world data.
The group is provided with a complete manual, where the unit description, commissioning, operating modes and some educational experiences are provided with experimental results.

TRAINING PROGRAM

- Determining the fan maximum flow rate
- Determining the maximum ventilation prevalence
- Adjusting a fan
- Using a Pitot tube and determining air velocity
- Using a calibrated diaphragm
- Determining the characteristic power curve absorbed by a fan when changing operating conditions
- Determining the efficiency characteristics curves when changing operating conditions

TECHNICAL SPECIFICATIONS

- Axial fan:
  - max flow: 3000 m³/h (head 110 Pa)
  - ΔH max: 270 Pa (flow rate 1900 m³/h)
  - max speed of rotation: 3000 rpm;
  - adjustable wing profile blade diameter: 315 mm
- Electric motor c.c. double shaft output: max Power 0.5 kW at 3000 rpm
- Transparent plexiglas test tunnel, internal diameter 290 mm
- Fluid thread rectifier
- Partitioning damper
- Quick-release pressure plugs
- Pitot tube adjustable in height
- Temperature probe
- Differential micromanometer
- Diaphragm calibrated
- Load cell
- Rpm transducer
- Air speed probe
- Differential pressure transducer

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Control unit:

- Electronic board and inverters for input / output signals
- Autonomous or remote operating modes (via PC, not included)
- USB interface for PC connection
- LCD display with keyboard for rpm control and to display:
  - Voltage and current absorbed by the electric motor
  - Rpm
  - Axial torque
  - Air speed
  - Fan prevalence

Data Acquisition and Analysis Software

The data acquisition and analysis software automatically acquires the signals supplied by the installed transducers. The diagrams of the acquired data as a function of time are displayed on the screen or can be printed. It is also possible to run simulations by type in data from the keyboard. The software works on Windows computers only.

Power supply: 230 Vac 50 Hz single-phase - 0,75 kVA
(Other voltage and frequency on request)
Dimensions: 3000 x 600 x 1300 (h) mm
Net weight: about 300 kg

REQUIRED

PERSONAL COMPUTER
- NOT INCLUDED -

SUPPLIED WITH

THEORETICAL - EXPERIMENTAL HANDBOOK

OPTIONAL

TRANSPARENT VENTURI TUBE
Mod. AXD-V2/EV
For further air velocity study