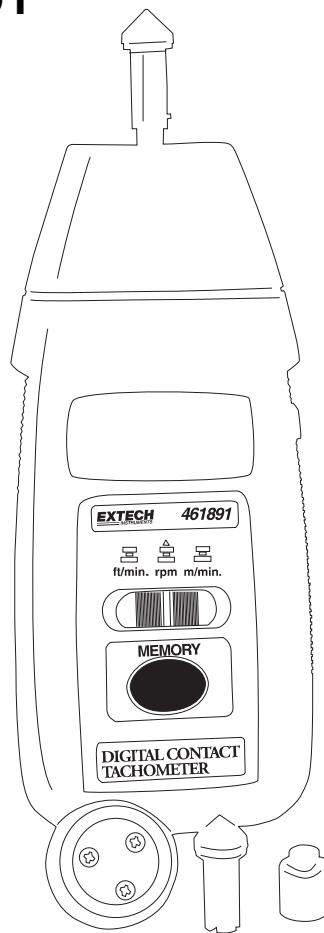




USER GUIDE

Contact Tachometer

Model 461891



Introduction

Congratulations on your purchase of Extech's Digital Tachometer, model 461891. This meter is shipped fully tested and calibrated and, with proper use, will provide years of reliable service.

Features

- Measures from 0.5 to 19999 rpm
- Min/Max Memory Recall
- Cone, funnel, surface attachments included
- Quartz crystal time base

Specifications

General Specifications

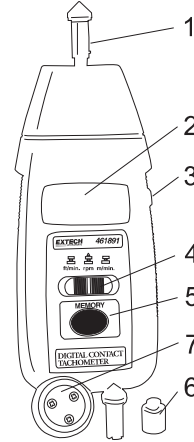
Circuit	Custom one-chip LSI microprocessor circuit
Time base	Quartz crystal
Display	5-digit multi function LCD display
Measurements	Rotation Speed 0.5 to 19,999 rpm Surface Speed 0.2 to 6560 ft/min. 0.05 to 1999.9 m/min
Memory	Last and Max/Min readings
Sampling Time	1 second
Operating Temperature/RH	32 °F to 122 °F (0 °C to 50 °C) / <80% RH
Power Supply	4 x 1.5V AA batteries
Power Consumption	Approx. 10 mA
Weight	0.62 lb (280 g) including batteries
Dimensions	8.2 x 2.8 x 1.5" (208 x 72 x 37 mm)
Accessories	Cone rpm adaptor, funnel rpm adaptor, surface speed test wheel, and carrying case

Range Specifications

	Range	Resolution	Accuracy
rpm	0.5 to 19,999 rpm	0.1 rpm (0.5 to 999.9 rpm) 1 rpm (over 1000 rpm)	$\pm (0.05\% \text{ rdg} + 1\text{d})$ @23 $\pm$ 5°C
ft/min	0.2 to 6560 ft/min	0.1 ft/min (0.2 to 999.9 ft/min) 1 ft/min (over 1000 ft/min)	$\pm (1\% \text{ rdg} + 1 \text{ digit})$
m/min	0.05 to 1999.9 m/min	0.01 m/min (0.05 to 99.99 m/min) 0.1 m/min (over 100 m/min)	

Front Panel Description

- 1 Shaft with cone adapter attached
- 2 LCD display
- 3 Measure button
- 4 Function select switch
- 5 Memory button
- 6 Cup attachment
- 7 Surface wheel attachment



Operation

RPM Measurement

- a) Slide the Function Switch to the "RPM" position.
- b) Install the appropriate RPM Adapter on the Shaft
- c) Press the Measure button while lightly pressing the RPM adapter against the central opening of a rotating shaft in proper alignment. Release the Measure button when the display stabilizes (about 1 to 2 seconds).

Surface Speed Measurement

- a) Slide the Function Switch to "ft/min" or "m/min"
- b) Attach the Surface Speed Wheel to the Shaft
- c) Press the Measure button and hold the surface speed wheel against the device being measured. Release the Measure button when the display stabilizes.

Memory Recall

The last value and last max and min values obtained before releasing the Measure button are automatically stored by the meter. These memorized values can be displayed by pressing the Memory button as described below:

- a) Press once and hold - the last value is displayed followed by the "LA" icon
- b) Press again and hold - the maximum value is displayed followed by the "UP" icon
- c) Press again and hold - the minimum value is displayed followed by the "dn" icon

Maintenance

Battery Replacement:

When the low battery indication appears ("LO" on the display), slide the battery cover off of the rear of the instrument, replace batteries with four 1.5V AA batteries and replace the cover. Remove the batteries if the instrument will not be used for a long period of time.

Cleaning: Use only a dry cloth to clean the plastic case.

Accessories:

Part # 461990 Kit contains: Qty. of 2 each: cone, wheel, and cup; Qty. 1 shaft

Warranty

FLIR Systems, Inc. warrants this Extech Instruments brand device to be free of defects in parts and workmanship for **one year** from date of shipment (a six month limited warranty applies to sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department for authorization. Visit the website _____ for contact information. A Return Authorization (RA) number must be issued before any product is returned. The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. FLIR Systems, Inc. specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. FLIR's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.

Calibration, Repair, and Customer Care Services

FLIR Systems, Inc. offers repair and calibration services for the Extech Instruments products we sell. NIST certification for most products is also provided. Call the Customer Service Department for information on calibration services available for this product. Annual calibrations should be performed to verify meter performance and accuracy. Technical support and general customer service is also provided, refer to the contact information provided below.

Support Lines: U.S.

Technical Support: Option 3; E-mail: _____

Repair & Returns: Option 4; E-mail: _____

Product specifications are subject to change without notice

Please visit our website for the most up-to-date information

FLIR Commercial Systems, Inc.

ISO 9001 Certified

Copyright © 2013-2015 FLIR Systems, Inc.

All rights reserved including the right of reproduction in whole or in part in any form

Garantie

FLIR Systems, Inc. garantit que cet appareil Extech Instruments est exempt de défauts matériaux et de fabrication pendant un an à partir de la date d'envoi (une garantie limitée de six mois s'applique aux capteurs et aux câbles). Si le renvoi de l'appareil pour réparation devient nécessaire durant ou après la période de garantie, contactez le service client pour autorisation. Pour obtenir les coordonnées, visitez le site Web suivant : _____. Un numéro d'autorisation de retour (AR) doit être délivré avant tout retour de produit. L'expéditeur prend à sa charge les frais d'expédition, le fret, l'assurance et l'emballage correct de l'appareil afin de prévenir toute détérioration durant le transport. Cette garantie ne s'applique pas aux dommages imputables à l'utilisateur, tels que l'usage impropre ou abusif, un mauvais câblage, une utilisation non conforme aux spécifications, un entretien ou une réparation incorrecte, ou toute modification non autorisée. FLIR Systems, Inc. déclinera spécifiquement toute garantie ou qualité marchande ou aptitude à l'emploi prévu, et ne sera en aucun cas tenu responsable pour tout dommage conséquent, direct, indirect ou accidentel. La responsabilité totale de FLIR est limitée à la réparation ou au remplacement du produit. La garantie définie ci-dessus est inclusive et aucune autre garantie, écrite ou orale, n'est exprimée ou implicite.

Calibrage, réparation et services après-vente

FLIR Systems, Inc. offre des services de calibrage et de réparation pour les produits Extech Instruments que nous commercialisons. Nous fournissons également une certification NIST pour la plupart des produits. Contactez notre service client pour toute information sur les services de calibrage disponibles pour ce produit. Un calibrage doit être effectué chaque année pour vérifier les performances et la précision du mètre. Nous offrons également une assistance technique et un service à la clientèle. Veuillez vous reporter aux coordonnées fournies ci-dessous.

Lignes d'assistance: États-Unis

Service d'assistance technique : Option 3 ; E-mail : _____

Réparations et retours : Option 4 ; E-mail : _____

Les spécifications produit sont sujettes à modifications sans préavis.

Pour les toutes dernières informations, veuillez visiter notre site Web.

FLIR Commercial Systems, Inc.

Certifié ISO 9001

Copyright © 2013-2015 FLIR Systems, Inc.

Tous droits réservés, y compris la reproduction partielle ou totale sous quelque forme que ce soit.

Garantía

FLIR Systems, Inc., garantiza este dispositivo marca Extech Instruments para estar libre de defectos en partes o mano de obra durante un año a partir de la fecha de embarque (se aplica una garantía limitada de seis meses para cables y sensores). Si fuera necesario regresar el instrumento para servicio durante o después del periodo de garantía, llame al Departamento de Servicio a Clientes para obtener autorización. Visite _____ para Información de contacto. Se debe expedir un número de Autorización de Devolución (AD) antes de regresar cualquier producto. El remitente es responsable de los gastos de embarque, flete, seguro y empaque apropiado para prevenir daños en tránsito. Esta garantía no se aplica a defectos resultantes de las acciones del usuario como el mal uso, alambrado equivocado, operación fuera de las especificaciones, mantenimiento o reparación inadecuada o modificación no autorizada. FLIR Systems, Inc., rechaza específicamente cualesquier garantías implícitas o factibilidad de comercialización o idoneidad para cualquier propósito determinado y no será responsable por cualesquier daños directos, indirectos, incidentales o consecuentes. La responsabilidad total de FLIR está limitada a la reparación o reemplazo del producto. La garantía precedente es inclusiva y no hay otra garantía ya sea escrita u oral, expresa o implícita.

Servicios de calibración, reparación y atención a clientes

FLIR Systems, Inc., ofrece servicios de reparación y calibración para los productos que vendemos de Extech Instruments. Además ofrecemos certificación NIST para la mayoría de los productos. Llame al Departamento de Servicio al Cliente para solicitar información de calibración para este producto. Para verificar el funcionamiento y precisión se debe realizar la calibración anual. Además se provee Soporte Técnico y servicios generales al cliente, consulte la información de contacto en seguida.

Líneas de soporte: EE.UU.

Soporte Técnico Opción 3; correo electrónico: _____

Reparación / Devoluciones: Opción 4; correo electrónico: _____

Las especificaciones del producto están sujetas a cambios sin aviso

Por favor visite nuestra página en Internet para la información más actualizada

FLIR Commercial Systems, Inc.

Certificado ISO 9001

Copyright © 2013-2015 FLIR Systems, Inc.

Reservados todos los derechos, incluyendo el derecho de reproducción total o parcial en cualquier medio