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Nota di contenuto	Introduction -- I SUPERVISION, FAULTDETECTION AND DIAGNOSIS METHODS -- Supervision, Fault-Detection and Fault-Diagnosis Methods - a short Introduction -- II DIAGNOSIS OF INTERNAL COMBUSTION ENGINES -- On the Control and Diagnosis of Combustion Engines -- Gasoline Engine Diagnosis -- Diesel Engine Diagnosis -- III DIAGNOSIS OF ELECTRICAL DRIVES, MOTORS AND ACTUATORS -- Electrical Motors, Actuators -- IV FAULT-TOLERANT SYSTEMS -- Fault-tolerant sensors and actuators -- V APPENDIX -- Terminology for Fault Diagnosis.
Sommario/riassunto	This book offers first a short introduction to advanced supervision, fault detection and diagnosis methods. It then describes model-based methods of fault detection and diagnosis for the main components of gasoline and diesel engines, such as the intake system, fuel supply, fuel injection, combustion process, turbocharger, exhaust system and exhaust gas aftertreatment. Additionally, model-based fault diagnosis of electrical motors, electric, pneumatic and hydraulic actuators and

fault-tolerant systems is treated. In general series production sensors are used. It includes abundant experimental results showing the detection and diagnosis quality of implemented faults. Written for automotive engineers in practice, it is also of interest to graduate students of mechanical and electrical engineering and computer science. The Content Introduction.- I SUPERVISION, FAULT DETECTION AND DIAGNOSIS METHODS.- Supervision, Fault-Detection and Fault-Diagnosis Methods - a short Introduction.- II DIAGNOSIS OF INTERNAL COMBUSTION ENGINES.- On the Control and Diagnosis of Combustion Engines.- Gasoline Engine Diagnosis.- Diesel Engine Diagnosis.- III DIAGNOSIS OF ELECTRICAL DRIVES, MOTORS AND ACTUATORS.- Electrical Motors, Actuators.- IV FAULT-TOLERANT SYSTEMS.- Fault-tolerant sensors and actuators.- V APPENDIX.- Terminology for Fault Diagnosis. The Target Group Written for automotive engineers in practice, it is also of interest to graduate students of mechanical and electrical engineering and computer science. The Author Rolf Isermann studied Mechanical Engineering and obtained the Dr.-Ing. degree in 1965 from the University of Stuttgart, Germany. In 1972 he became Professor in Control Engineering at the University of Stuttgart. From 1977-2006 he was Professor for Control Systems and Process Automation at the Institute of Automatic Control of the Darmstadt University of Technology. Since 2006 he is Professor emeritus and is head of the Research Group for Control Systems and Process Automation in the same institution. R. Isermann received the Dr. h.c. (honoris causa) from L'Université Libre de Bruxelles and from the Polytechnic University in Bucharest. In 1996 he was awarded by the "VDE-Ehrenring", and in 2007 by "VDI-Ehrenmitglied". The MIT Technology Review Magazine awarded him in 2003 to the Top Ten of Emerging Technologies in Mechatronics. In 2010 he received the Rufus Oldenburger Medal from the American Society of Mechanical Engineers (ASME: highest scientific award for lifetime achievements), and in 2016 the IFAC lifetime achievement award for mechatronics.
