

ISO 20816-4:2018 (E)

Mechanical vibration — Measurement and evaluation of machine vibration — Part 4: Gas turbines in excess of 3 MW, with fluid-film bearings

Contents

	Foreword
	Introduction
1	Scope
2	Normative references
3	Terms and definitions
4	Measurement procedures
4.1	General
4.2	Measurements of vibration of non-rotating parts
4.3	Measurements of vibration of rotating shafts
5	Evaluation criteria
5.1	General
5.2	Criterion I: vibration magnitude
5.2.1	General
5.2.2	Vibration magnitude at rated speed under steady-state operating conditions
5.2.2.1	General
5.2.2.2	Evaluation zones
5.2.2.3	Acceptance criteria
5.2.2.4	Evaluation zone boundaries
5.2.3	Operational limits for steady-state operation
5.2.3.1	General
5.2.3.2	Setting of ALARMS
5.2.3.3	Setting of TRIPS
5.2.4	Vibration magnitude during non-steady-state conditions (transient operation)
5.2.4.1	General
5.2.4.2	Vibration magnitude during transient operation at rated speed
5.2.4.3	Vibration magnitude during run up, run down and overspeed
5.2.4.4	Use of “trip multiplier”
5.3	Criterion II: change in vibration magnitude under steady-state conditions at rated speed
5.4	Supplementary procedures/criteria
5.5	Evaluation based on vibration vector information
Annex A	(normative) Evaluation zone boundaries for vibration of non-rotating parts
Annex B	(normative) Evaluation zone boundaries for vibration of rotating shafts
Annex C	(informative) Example of setting ALARM and TRIP values
Annex D	(informative) Cautionary notes about the use of vibration velocity criteria at low rotational speeds
Annex E	(informative) Evaluation zone boundary limits and bearing clearance