

# ISO 8528-1:2018-02 (E)

## Reciprocating internal combustion engine driven alternating current generating sets - Part 1: Application, ratings and performance

---

<b>Contents</b>		<b>Page</b>
Foreword .....		v
1	Scope .....	1
2	Normative references .....	1
3	Terms and definitions .....	1
4	Symbols and abbreviated terms .....	1
5	Other regulations and additional requirements .....	2
6	General description .....	2
6.1	Generating set .....	2
6.1.1	General .....	2
6.1.2	Prime movers .....	3
6.1.3	Electrical generators .....	3
6.1.4	Control and switchgear .....	3
6.1.5	Auxiliaries .....	4
6.2	Power station .....	4
7	Application criteria .....	4
7.1	Modes of operation .....	4
7.1.1	General .....	4
7.1.2	Continuous operation at constant load .....	4
7.1.3	Continuous operation at varying load .....	4
7.1.4	Limited time operation at constant load .....	4
7.1.5	Limited time operation at varying load .....	5
7.2	Site criteria .....	5
7.2.1	Land use .....	5
7.2.2	Marine use .....	5
7.3	Single and parallel operation .....	5
7.3.1	General .....	5
7.3.2	Generating set parallel operation .....	5
7.3.3	Generating set operation in parallel with a utility supply .....	5
7.4	Modes of start-up and control .....	5
7.4.1	General .....	5
7.4.2	Manual operation .....	6
7.4.3	Semi-automatic operation .....	6
7.4.4	Automatic operation .....	6
7.5	Start-up time .....	6
7.5.1	General .....	6
7.5.2	Generating set with no specified start-up time .....	6
7.5.3	Generating set with a specified start-up time .....	6
8	Performance classes .....	7
9	Installation features .....	7
9.1	General .....	7
9.2	Installation configurations .....	7
9.2.1	General .....	7

9.2.2	Fixed .....	7
9.2.3	Transportable .....	8
9.2.4	Mobile .....	8
9.3	Generating set configurations .....	8
9.4	Mounting types .....	8
9.5	Connection between the RIC engine and electrical generator .....	8
9.5.1	General .....	8
9.5.2	Coupling arrangements .....	8
9.5.3	Assembly arrangements .....	9
9.6	Additional installation features -- Weather effects .....	9
9.6.1	Inside installation .....	9
9.6.2	Outside installation with protection from weather .....	9
9.6.3	Open-air installation .....	9
10	Emissions .....	9
11	Standard reference conditions .....	9
12	Site conditions .....	9
12.1	General .....	9
12.2	Ambient temperature .....	10
12.3	Altitude .....	10
12.4	Humidity .....	10
12.5	Air quality .....	10
12.6	Marine environment .....	10
12.7	Shock and imposed vibration .....	10
12.8	Chemical pollution .....	10
12.9	Radiation .....	10
12.10	Cooling water/liquid .....	10
13	Power adjustment for operating conditions .....	11
14	Power rating definitions .....	11
14.1	General .....	11
14.2	Power ratings .....	11
14.3	Power rating categories .....	11
14.3.1	General .....	11
14.3.2	Continuous power (COP) .....	12
14.3.3	Prime power (PRP) .....	12
14.3.4	Limited-time running power (LTP) .....	13
14.3.5	Emergency standby power (ESP) .....	14
14.3.6	Data centre power (DCP) .....	15
14.3.7	Maximum power for low-power generating sets (MAX) .....	15
15	Operating performance .....	16
15.1	Starting temperature .....	16
15.2	Load acceptance .....	16
15.3	Cyclic irregularity .....	16
15.4	Generator temperature rise .....	16
15.5	Fuel and lubricating oil characteristics and consumption .....	16
15.6	Minimum running hours .....	16
15.7	Regulation .....	16
15.7.1	Frequency regulation .....	16
15.7.2	Voltage regulation .....	17
15.8	Range of power factor .....	17
	Bibliography .....	18