ISO 8528-4:2025-10 (E)

Reciprocating internal combustion engine driven alternating current generating sets - Part 4: Controlgear and switchgear

Contents

Page

Foreword v

1 Scope 1

2 Normative references 1

3 Terms and definitions 1

4 Other regulations and additional requirements 2

5 General equipment requirements 2
5.1 Mounting 2
5.2 Construction 2
5.3 Operating voltage 2
5.4 Rated frequency 2
5.5 Rated current 3
5.6 Control circuit voltage 3
5.7 Starter battery systems 3
5.8 Environmental conditions 3
5.9 Enclosure and degree of protection 4

6 Generating set switchgear 4
6.1 General 4
6.2 Load-switching devices 6
6.3 Fault current ratings 6
6.4 Cables and interconnections 6
6.5 Generator protection 7

7 Control modes 7
7.1 General 7
7.2 Hand start/hand stop 7
7.3 Local electric start/hand stop 7
7.4 Local electric start/electric stop 7
7.5 Remote start/electric stop 7
7.6 Automatic start/automatic stop 7
7.7 Start on demand 8
7.8 Standby-to-mains control 8
7.9 Dual mutual standby control 8
7.10 Triple mutual standby control 8
7.11 Dual mutual standby-to-grid control 9
7.12 Combined with utility generation mode 9
7.13 Non-interrupting load transfer mode 9
7.14 Parallel operation 10
7.14.1 General 10
7.14.2 Manual operation 11
7.14.3 Automatic operation 11
7.15 Means of stopping 12
7.16 Generating set parallel communication 12
7.16.1 General 12
7.16.2 Communication content 13
7.16.3 Communication interface 13

8 Generating set monitoring 13
8.1 General 13
8.2 Electrical instrumentation 13
8.3 Electrical protection and supervisory control 13
8.3.1 Over-current protection 13
8.3.2 Motor starting 14
8.3.3 Underspeed protection 14
8.3.4 Reverse-power protection 14
8.3.5 Load protection, load shedding 14
8.3.6 Control-circuit protection 14
8.3.7 Earth-fault protection 14
8.4 Engine protection system 16
8.5 Engine instrumentation 17

Annex A (informative) Case 21

Bibliography 32