

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