Partner Product

EBG 227-EN

RITTAL

MITSUBISHI ELECTRIC
FACTORY AUTOMATION

LV Switchgear

Modular Enclosure Systems

Approved solutions to EN 61439-1/2

Meeting demanding safety standards

e-F@ctory Partner Product

LATEST STANDARDS — Guaranteed approval to EN 61439-1/2

IMPROVED QUALITY — Best of breed ASTA certified ACBs and MCCBs

MORE FLEXIBILITY — Optimal configuration of systems

Meeting demanding safety standards

Modular enclosure solutions

Guaranteed safety

Low voltage switchgear products and assembled panels for use in applications such as water treatment, machine construction, process industries, building distribution systems and the chemical industries have to undergo rigorous safety approvals, to demonstrate high levels of user protection and systems safety under conditions of fire, over-voltage, over-current events and general misuse, taking into account that personnel of varying skill levels may have access to the panel.

This can be something of a challenge to designers and installers of low voltage switchgear and control gear assemblies. But a solution comes in the form of flexible, modular enclosure systems, built around type tested devices, that offer ASTA certification and conformance to EN 61439-1/2 as standard.

Modular solution

An enclosure system that provides a modular system for the assembly type tested low voltage switchgear and control gear offers numerous benefits to the installer. The flexible combination of sections allow for optimal configuration of the system, while the use of pre-approved devices delivers guaranteed conformance with the most demanding safety standards.

To meet user requirements for just such systems, Mitsubishi Electric in conjunction with its e-F@ctory partner Rittal, the enclosure specialists have developed a modular solution utilising Rittals Ri4Power Structured System and Mitsubishi's innovative low voltage switchgear. The Ri4Power system has been designed for the fast and reliable construction of low voltage switchgear systems for machines, plants, buildings and motor control systems, for loads up to 3200 A. The system is ASTA certified, and complies to EN 61439-1/2, design verified assembly, to guarantee the highest safety standards in power distribution.

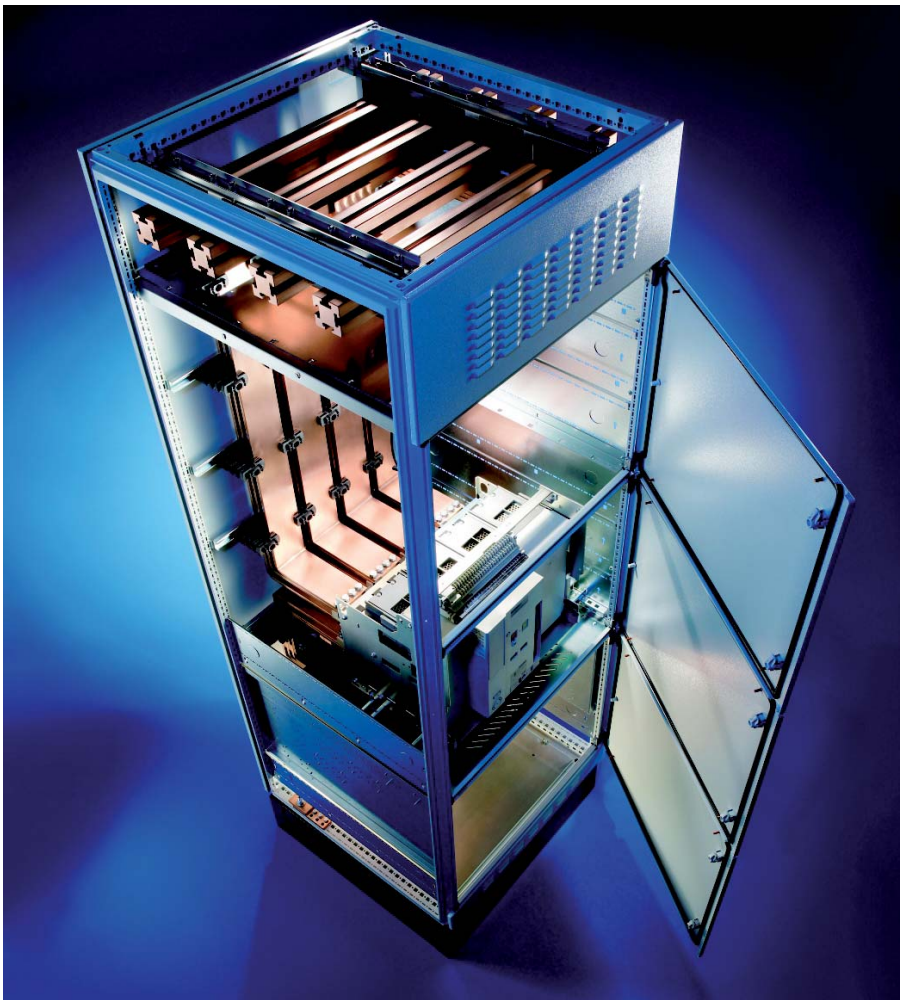
Ri4Power provides easy planning, simple handling, perfect installation and a high degree of modularlity. The system is built around Rittal's TS8 modular enclosures. Their dimensions and expandability offer complete flexibility, while divided interiors allow the internal space to be internally adapted to the function-related switchgear installation.

This new concept in installation technology and multifunctional components makes it possible to install the inside equipment of a low-voltage plant in just a few operations. Available as "flat pack" or assembled as steel work and copper, Ri4Power represents a flexible approach to motor control centres and distribution boards.

Type tested components

A key aspect of the system is that it is built around Mitsubishi's type-tested low voltage switchgear products. These air circuit breakers and motor control circuit breakers are approved in accordance with EN 61439-1/2 and ASTA. The Ri4Power enclosures are built around these products and are certified as a design verified assembly in accordance with EN 61439-1/2.

Mitsubishi's fully approved Air Circuit breakers and MCCB's

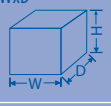


A complete enclosure solution

Users can turn to Ri4Power knowing that all system components – cabinet, busbar, control gear, switchgear, safety devices, etc – have been tested together to guarantee the required levels of safety for the protection of devices and personnel of any skill level to the highest and most stringent international standards

Rittal is the word leading manufacturer for industrial enclosures and power distribution systems, but the Ri4Power systems take the company's enclosure solutions to a new level. With the ability to supply design verified assemblies built around Mitsubishi's low voltage switchgear means a complete solution can now be supplied, making it easy for users to select best of breed components and systems with the assurance that all possible safety requirements have been satisfied.

Specifications ///

Type		AE1000-SW		AE1250-SW		AE1600-SW		AE2000-SWA		AE2000-SW		AE2500-SW		AE3200-SW		AE4000-SWA		AE4000-SW		AE5000-SW		AE6300-SW	
Frame type		1								2								3					
Rated current Iu (A) 40 °C		1000		1250		1600		2000		2000		2500		3200		4000		4000		5000		6000	
Max. rated operational voltage Ue (V)		690								690								690					
Rated insulation voltage Ui (V)		1000								1000								1000					
Rated impulse withstand voltage Uimp(kV)		12								12								12					
Suitable for isolation		yes								yes								yes					
Category		B								B								B					
Pollution degree		3								3								3					
Number of poles		3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4
Rated current Ir (A) adjustment range at 40 °C		500–1000		325–1250		800–1600		1000–2000		625–2000		1250–2500		1600–3200		2000–4000		2000–4000		2500–5000		3150–6300	
Rated current of neutral pole (A)		1000		1250		1600		2000		2000		2500		3200		4000		2000		2500		3150	
Rated service short-circuit breaking capacity ① Icu (kA, rms) Ics=Icu=100%	690 V AC	65								75								85					
	400 V AC	65								85								130					
Rated short-timewith-stand current (kA rms) Icw	1 s	65								75								100					
Operating cycles ② (ON/OFF)	without rated current	25000								20000								10000 (3P)/5000 (4P)					
Connecting terminal	horizontal	yes						no		yes						no		no					
	vertical	yes ③						yes		yes ③						yes		yes					
	frontal	yes ③						no		yes ③						no		no					
Outline dimensions (mm) HxWxD 	fixed type	3-pole: 410x340x290 4-pole: 410x425x290								3-pole: 410x475x290 4-pole: 410x605x290								3 pole: 414x873x290 4 pole: 414x1003x290					
	draw-out type	3-pole: 430x300x368 4-pole: 430x385x368								3-pole: 430x435x368 4-pole: 430x565x368						3-pole: 430x 439x368 4-pole: 430x 569x368		3 pole: 480x875x368 4 pole: 480x1005x368					
Weight (kg)	fixed type	41	51	41	51	42	52	47	57	60	72	61	73	63	75	81	99	160	180	160	180	160	180
	draw-out type	64	78	64	78	65	79	70	84	92	113	93	114	95	116	108	136	233	256	233	256	240	263
	cradle only	26	30	26	30	26	30	31	35	35	43	35	43	36	44	49	61	118	133	118	133	125	140

① Conforms to IEC 60947-2, EN 60947-2
② Number of mechanical operating cycles (on/off).
③ Optional

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Specifications subject to change /// Art. no. 245150-A /// 07.2011