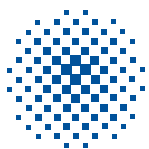
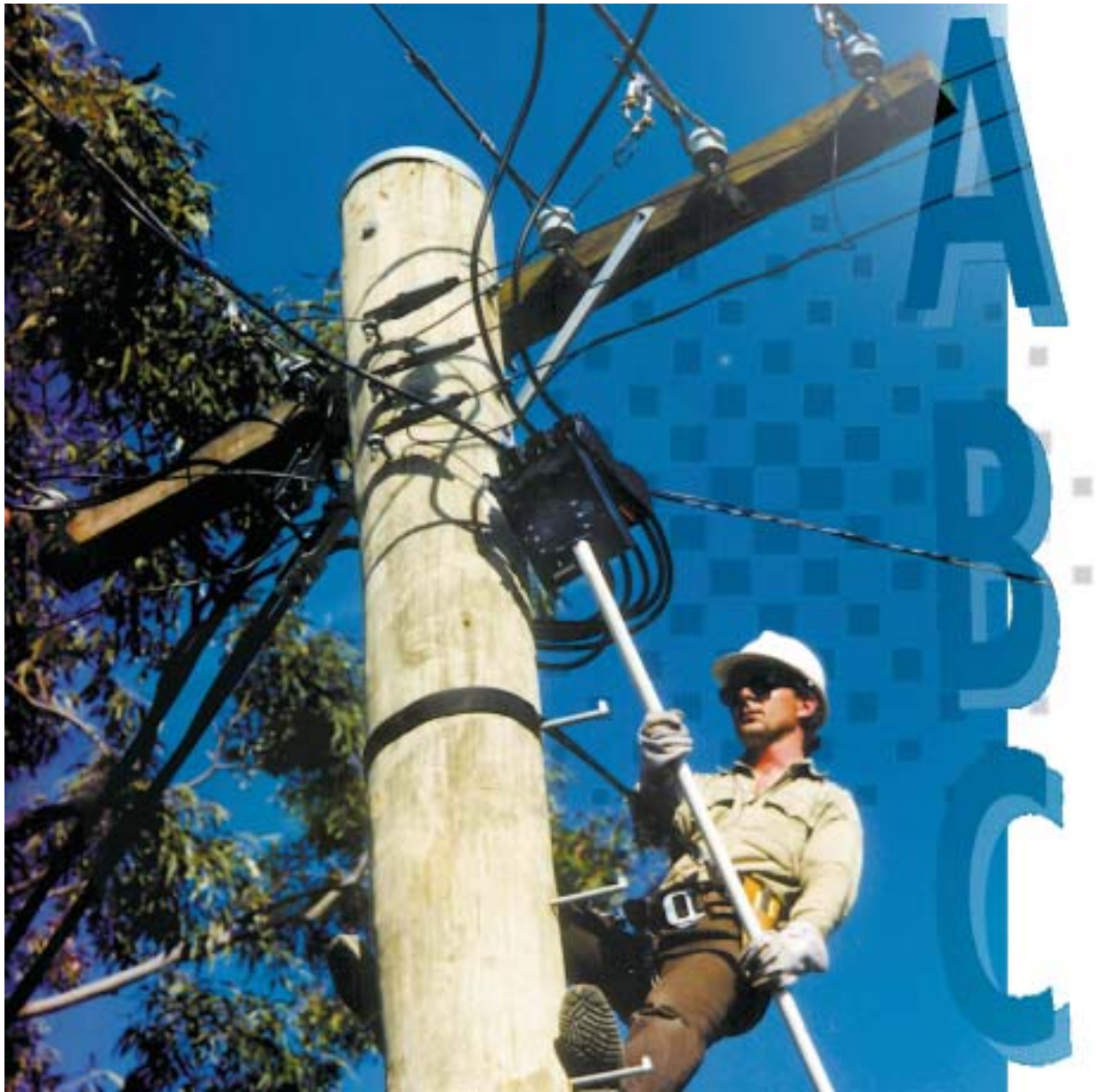


KRONE KGH Series Fuse-Switch-Disconnectors

For Low Voltage ABC Systems or
Open-wire Overhead Networks



KRONE

Putting the Power in Your Hands....

The KRONE KGH Range

The KRONE type KGH Fuse-Switch-Disconnectors are fully insulated on-load switches for reliable use in low voltage ABC systems or open-wire overhead networks.

The switches are suitable for mounting directly to transformers, poles or building facades. General ratings are 450V and currents range from 100A to 630A.

Construction

The fully insulated switch comprises of upper and lower housings constructed from weather and UV resistant high quality, glass-fibre reinforced polyamide compound with minimum 2% carbon black.

All metal components are of corrosion proof material which, combined with a robust construction, gives a dependable performance even under harsh environmental conditions.

The upper housing holds the conductor, terminals and contacts with the hinged lower housing holding the mountings for fuses, links or short circuiting facilities.

Operation

A special feature of the KGH range is that standard type hook sticks may be used for opening, closing and removing the lower housing. Adaptors for special operating sticks are also available on request.



Protection and isolation

Applications

Protection and Isolation

- Protection of an outgoing feeder in transformer substations
- Ring main configurations
- Protection of consumer services
- Connection of temporary consumers
- Protection between bare conductors and insulated overhead cables or underground cables

Sectionising

- Connection and disconnection of network sections
- Connection of overhead to underground cables



Sectionising



Opening a switch using hook stick



Removing lower housing using hook stick



Replacing a fuse link



In-house testing at KRONE's ISO 9001 accredited Quality Laboratory

To ensure the long-term reliability of our products, all switches were subjected to extensive cyclic load testing in accordance with AS3947-3, Supplement 1 during development.

KRONE (Australia) believes in working within strict Quality Management guidelines and has been accredited the ISO 9001 standard for Manufacturing and Design.

A modern on-site Test Laboratory, specialising in checking conformance to international standards, ensures KRONE's products perform and exceed the highest industry performance measures.



Lug type terminal

Cable Termination Types

The KRONE switches are available with various terminal types;

- Pillar type terminals for stripped copper and aluminium compacted cables ranging from 6-150mm²
- Lug type terminals. The 12mm bolted lug terminals are particularly useful for connection of cables from overhead ABC cables to underground networks
- Insulation Piercing Connection (IPC) terminals. Combining quick connection with complete cable sealing
- Saddle type terminals for stripped copper and aluminium cables from 6-50mm².



IPC type terminal

Testing

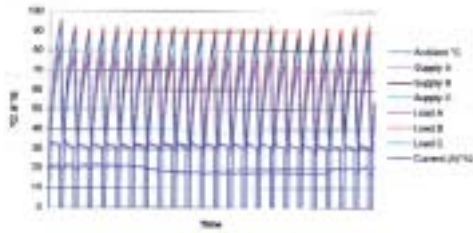
KRONE (Australia) has been involved in research and development of ABC switches since 1989 and has actively participated in the evolvement of the Australian Standards.



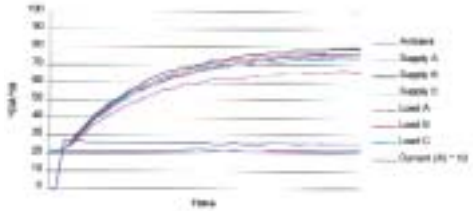
Pillar type terminal

The KRONE type KGH switches have undergone extensive type testing at *Testing and Certification of Australia*, *The NSW Work Cover Authority Test Stations* and *The University of NSW* to establish ratings in full accordance with IEC Standard 947-3 and AS3947-3 including Supplement 1.

KGH250, IPC 95-95, Load Cycling



KGH250, IPC 95-95, Temperature Rise Test after Load Cycling



KGH100 (100A)



Hook stick operation on single pole version



Fuse Disconnecter, for screw type (pig-tail) operating stick



Triple pole Fuse Switch Disconnecter, KGH100

Features

- Fully Insulated
- On-load switching capability
- Corrosion proof
- Suits standard hook-stick
- Accepts one or two cables
- Integral mounting bracket for bolting or strapping

The KRONE KGH100 Switch

The upper housing, with integral mounting bracket, holds the conductor, terminals and fuse-contacts.

The lower housing is hinged for easy opening and closing. It houses the mounting for BS136 fuse-links (size 57x22.2 dia).

Switches may be mounted side by side for two or three pole requirements.

Cable Termination

The KGH100 is available with two different terminals;

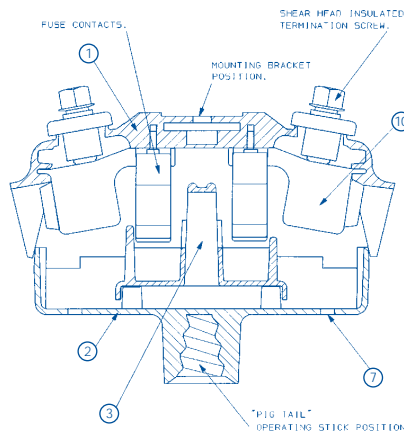
- Saddle type terminals for stripped copper and aluminium cables ranging from 2 x 6-35mm² or 1 x 6-50mm².
- Insulation Piercing Connection (IPC) terminals for copper and aluminium compacted cables ranging from 6-35mm².

Options

- Pole mounted bracket for up to three switches
- Neon indication if fuse-link has operated
- Fuse-Disconnecter version to suit screw type (pig-tail) operating stick

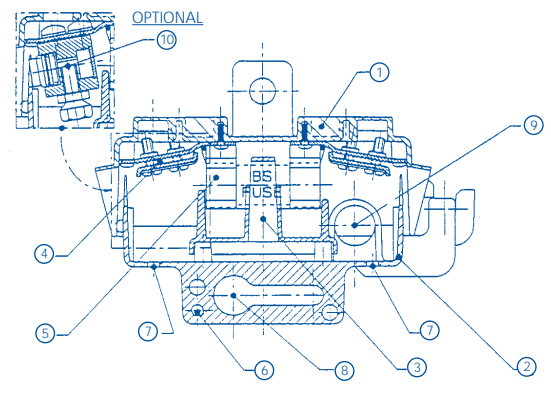
Cross Section KGH100

Fuse-Disconnecter (6459 1 119-00)



1. Upper housing
2. Hinged removable lower housing
3. Fuse-link holder
4. Nickel plated saddle terminal
5. Nickel plated copper alloy contact

Fuse-Switch-Disconnecter



6. Rod actuating pin (optional)
7. Voltage test points
8. Hook-stick position for opening/closing
9. Hook stick position for removal/replacement of cover
10. IPC termination

Technical Data

In accordance with tests and requirements to IEC 947-3

	6459 1 119-00 only (F-D)	Other Versions (F-S-D)
Rated operational voltage, U_e	480V	480V
Rated insulation voltage, U_i	1000V	1000V
Rated frequency	50Hz	50Hz
Rated operational current, I_e	100A	100A
Utilisation category	---	AC22B
Infrequent operation with current	300	300
Infrequent operation without current	1700	1700
Degree of protection	IP2L4	IP2L4
Mass (without fuse)	390g	378g

KGH160 (160/250A)



Single pole unit strapped to pole



Hook stick operation on single pole version



Ganged triple pole version bolted to pole

Features

- Fully Insulated
- On-load switching capability
- Corrosion proof
- Suits standard hook-stick
- Integral mounting bracket for bolting or strapping

The KRONE KGH160 Switch

The upper housing, with integral mounting bracket, holds the conductor, terminals and fuse-contacts.

The lower housing is hinged for easy opening and closing. It houses the size 00 fuse links (to IEC 269) or connecting links.

Switches may be mounted side by side (with ganged or unganged operation) for two or three pole requirements.

Cable Termination

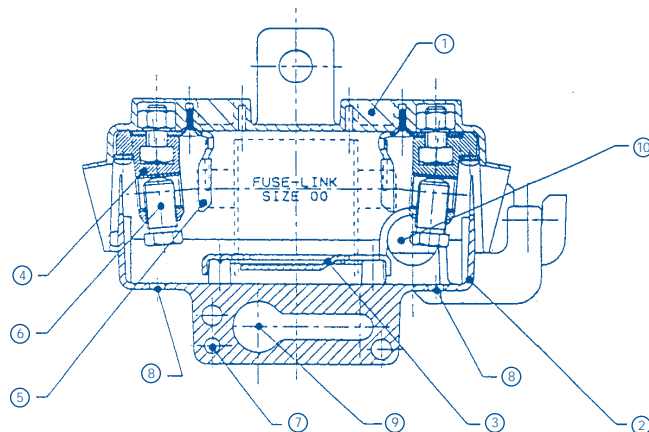
The KGH160 is available with two different terminals;

- Pillar type terminals for stripped copper and aluminium compacted cables ranging from 16-95mm².
- Insulation Piercing Connection (IPC) terminals for copper and aluminium compacted cables ranging from 16-95mm².

Options

- Pole mounted bracket for up to three switches
- Neon indication if fuse-link has operated

Cross Section KGH160



- | | |
|---------------------------------------|--|
| 1. Upper housing | 6. Stainless steel terminating screw |
| 2. Hinged removable lower housing | 7. Rod actuating pin (optional) |
| 3. Fuse-link retaining clip | 8. Voltage test points |
| 4. Nickel plated pillar terminal | 9. Hook stick position for opening/closing |
| 5. Nickel plated copper alloy contact | 10. Hook stick position for removal/replacement of cover |

Technical Data

In accordance with tests and requirements to IEC 947-3

Rated operational voltage, U_e	480V
Rated insulation voltage, U_i	1000V
Rated frequency	50Hz
Rated operational current, I_e	
- with connecting links	250A
- with fuse-links	160A
Utilisation category	AC22B
Rated conditional short-circuit current with fuse links	50kA
Infrequent operation with current	200
Infrequent operation without current	1400
Degree of protection	IP2L4
Mass (without fuse)	370g

KGH250 (250A), KGH400 (400A/630A)



Yellow indicator shows if fuse-links/connecting links are not installed

Features

- Extremely compact
- One or three-pole units
- On-load switching capability
- Corrosion proof
- Fully insulated
- Suits standard hook-stick
- Individual, hinged terminal covers for maximum safety
- Yellow indicator shows if fuse-links/connecting-links are installed

The KRONE KGH250 and KGH400 Switches

The upper housing holds the conductor, terminals and contacts.

The lower housing is hinged for easy opening and closing. It houses the mounting for size 1-2 fuses, links or short circuiting facilities.

Switches are available in single or triple pole versions.

The triple pole switch is supplied with mounting bracket.

Cable Termination

The KGH250 and KGH400 are available with three different terminals;

- Pillar type terminals for stripped copper and aluminium compacted cables ranging from 16-95mm² and 50-150mm².
- 12mm bolted Lug type terminals.
- Insulation Piercing Connection (IPC) terminals for copper and aluminium compacted cables ranging from

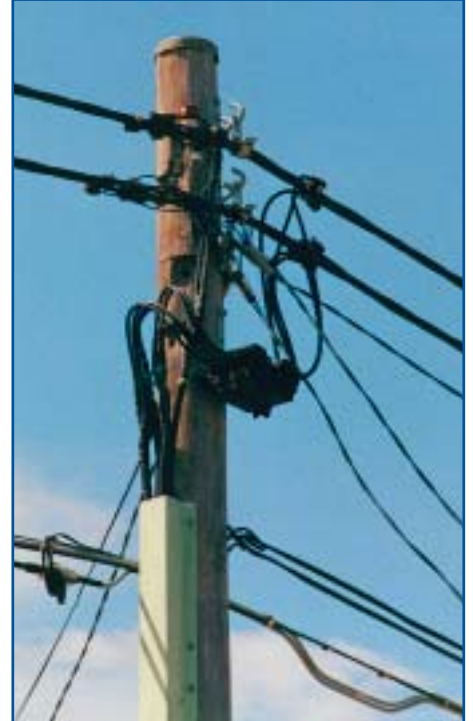


Single pole version

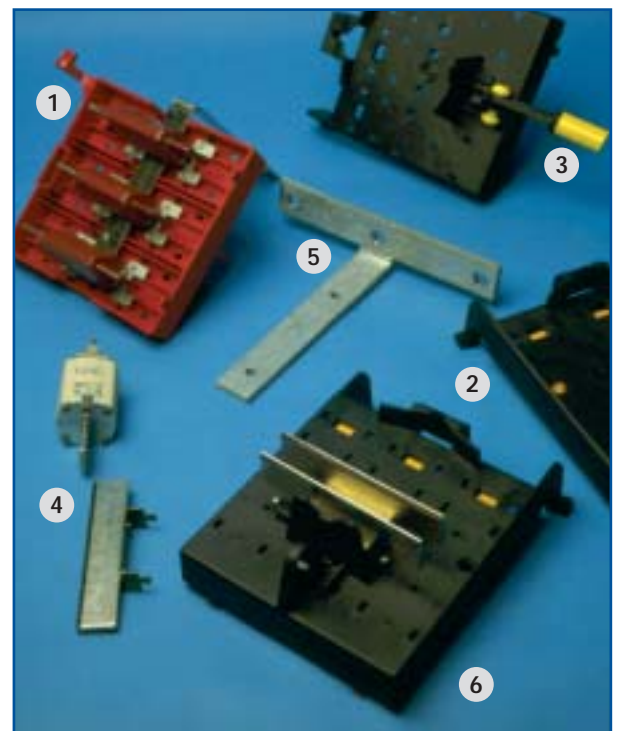
16-95mm² and 25-150mm².

Optional Accessories

1. Short circuiting device for load or supply side
2. Neon indication if fuse-link has operated
3. Operating rod attachments
4. Solid links, sizes 1 and 2, rated 250A/400A/630A
5. Wall mounting bracket
6. Solid link storage position
7. Pole mounted bracket for up to three KGH400/1 switches (*not shown*).
8. Operating pole with universal adaptor (*not shown*).

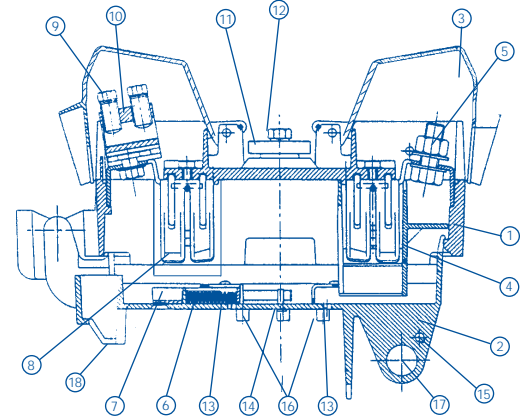
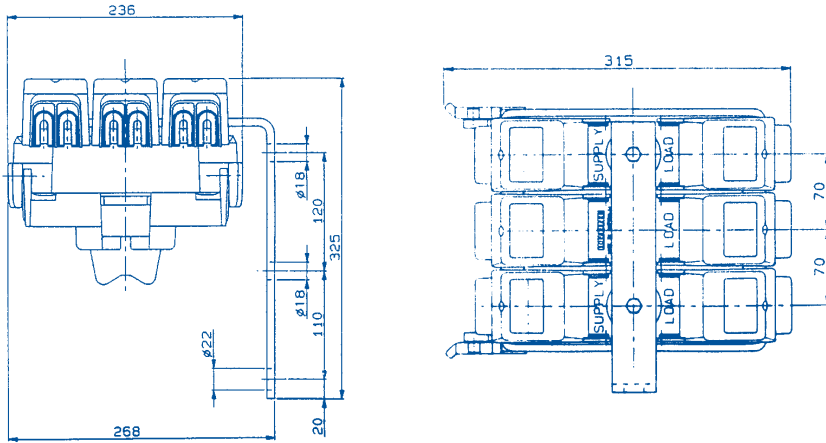


Connecting overhead ABC cables to underground sector cables

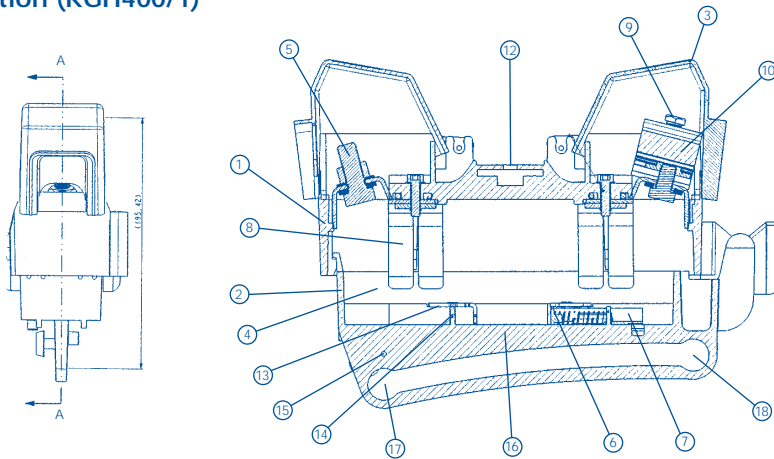


Optional accessories

Cross Section (KGH400/3)



Cross Section (KGH400/1)



1. Upper housing
2. Hinged removable lower housing
3. Hinged terminal cover
4. Arc chute
5. Stainless steel 12mm bolted lug type terminal (option)
6. Fuse-link retaining clip
7. Yellow indicator fuse-link/connecting-link installed
8. Nickel plated copper alloy contact
9. 13 A/F hexagon head terminating screw
10. Aluminium pillar terminal
11. Switch mounting bracket
12. Switch mounting screw
13. Voltage test points
14. Neon indicator (option)
15. Rod actuating pin (optional)
16. Connecting-link storage position (option)
17. Hook stick position for opening/closing
18. Hook stick position for removal/replacement of cover

Technical Data for KGH 250/3 and 400/3

In accordance with tests and requirements to IEC 947-3 and AS3947-3

	KGH250/3	KGH400/3	KGH400/1
Rated operational voltage, U_e	450V	450V	450V
Rated insulation voltage, U_i	1000V	1000V	1000V
Rated frequency	50-60Hz	50-60Hz	50Hz
Rated impulse withstand voltage, U_{imp}	16kV	16kV	16kV
Rated operational current, I_e			
- with fuse links	250A	400A	400A
- with connecting-links	250A	630A	630A
Rated make-break current at 0.65pg	375A	945A	1200A
Rated short-time withstand current 1_{cw} for one second			
- with connecting links	25kA	25kA	25kA
Rated short-circuit making capacity 1_{cm}			
- with connecting links	10kA	10kA	10kA
Rated conditional short-circuit current			
- with fuse-links	50kA	50kA	50kA
Utilisation category	AC 22 B	AC 22 B	AC 22 B
Infrequent operation with current	200	200	200
Infrequent operation without current	1400	1400	800
Degree of protection	IP2L4	IP2L4	IP2L4
Mass (without fuse)	6.2kg	6.5kg	1.5kg

Ordering Details

Only KRONE's standard versions are listed below. Details on other combination possibilities are available on request.

TERMINAL OPTIONS:			Saddle	Pillar			Lug	Insulation Piercing				
Part No	Rated Current (with fuse/solid link) (A)	No of Poles Ganged Switching	for 2x6-35mm ² or 1x6-50mm ² Al and Cu cables	Ni plated for 1x16-95mm ² , Al & Cu compacted cables	for 2x16-95mm ² Al compacted cables	Ni plated for 2x16-95mm ² , Al & Cu compacted cables	Ni plated for 2x50-150mm ² , Al & Cu cables	12mm stud, for lugs of palm width up to 40mm ²	for 1x6-35mm ² , Al and Cu compacted cables	for 1x6-95mm ² , Al and Cu compacted cables	for 2x16-95mm ² , Al and Cu compacted cables	for 2x25-150mm ² , Al and Cu compacted cables
KGH100 (BS136 fuses)												
6459 1 014-00	100	1	---	in/out								
6459 1 014-10	100	1	---						in/out			
6459 1 020-00	100	3	no						in/out			
6459 1 119-00*	100	1	---							in/out		
KGH160 (NH00 fuses)												
6459 1 015-00	160/250	1	---		in/out							
6459 1 015-10	160/250	1	---								in/out	
6459 1 017-00	160/250	3	yes		in/out							
6459 1 018-00	160/250	3	no		in/out							
6459 1 018-10	160/250	3	no								in/out	
KGH250 (NH fuses, sizes 1 & 2)												
6459 1 001-00	250/400	3	yes			in/out						
6459 1 001-01	250/400	3	yes				in/out					
6459 1 001-10	250/400	3	yes					in/out				
6459 1 118-00	250/400	3	yes								in/out	
KGH400 (NH fuses, sizes 1 & 2)												
6459 1 115-60	400/630	1	---					in/out				
6459 1 115-10	400/630	1	---				in	out				
6459 1 115-20	400/630	1	---				in/out					
6459 1 115-50	400/630	1	---									in/out
6459 1 001-20	400/630	3	yes		in/out							
6459 1 001-21	400/630	3	yes				in/out					
6459 1 001-30	400/630	3	yes					in/out				
6459 1 001-31	400/630	3	yes		in			out				
6459 1 121-00	400/630	3	yes									in/out
6459 1 122-00	400/630	3	yes								in/out	
APR630 (NH fuses, sizes 1, 2 & 3)												
6469 0 331-00	630/1000	1	---					in/out				

*Fuse Disconnecter (pig tail)

Accessories:

Details on KRONE's full range of accessories are available on request

Part No.	Description
6459 2 047-00	Mounting bracket for three KGH100 or KGH160 switches, includes hardware (each)
6469 0 310-00	Connecting Link 250A, size 00, for KGH160 (each)
6459 2 006-00	Connecting Link Storage Kit for fitting to underside of KGH250 and KGH400 (each)
6459 2 009-00	Neon Indicator Kit with 3 neons, for KGH250 and KGH400 (each)
6469 0 310-61	Connecting Link 250A, size 1, for KGH250 (each)
6469 0 310-01	Connecting Link 400A, size 2, for KGH400 (each)
6459 2 001-02	Sectionalised Operating Pole (3x1.2m) with universal adaptor (set)
6469 0 332-00	Mounting bracket for three APR630 switches, includes hardware (each)



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