



SERVING
SAFETY

Mors Smitt Industrial Technology

Substation Protection & Control

High Performance Electromechanical Relays





Power generation and distribution operators across the world rely on our relays

Auxiliary • Tripping • Supervision • Pilot wire

D platform

The unique plug-in D-relay concept is specifically designed for heavy duty applications in power-utilities, petro chemical industries and mining.

High DC breaking capacity and inductive load switching offer long electrical life and low life cycle costs. The Solve-All relay application concept offers ultimate flexibility to design and supply tailor made D-relays. Today D-relays are used in its millions across the world.



Delta platform

The Delta platform of electro-mechanical relays has been designed for high voltage protection and control applications where a low contact count is required.

High performance and reliability remains paramount while lead times and panel space have been reduced. A wide range of operating voltage functions and options are available. The Delta relays are packaged in a compact and cost effective case suitable for flush panel or rack mounting.



Alpha platform

Electro-mechanical relays specifically designed for high voltage protection and control applications. Multi-contact high-speed trip relays ensure fast operation of less than 8 ms with unique patented design. Topology ensures minimal contact bounce. The diversity of configurations and options makes the Alpha platform suitable for the most demanding customer.

The Alpha case system is available for flush panel and 19" rack mounting.



Mors Smitt is part of Wabtec Corporation, the NYSE stock exchange listed, global supplier of highly engineered components and solutions for rail and selected industrial markets. Operations in 17 countries and world wide sales in over 100 countries. Wabtec Corporation holds over 1,200 patents and has world class internal processes based on lean manufacturing and continuous improvement principles (Wabtec Performance System). Within the Wabtec group Mors Smitt has its own name & identity and is focused on satisfying the needs of customers in the power grid, industry and installation sectors.

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D-platform

Features

- Mechanical trip indicator
- Bistable / latching models
- Fast switching up to < 7 ms
- High DC breaking capacity
- Low power consumption
- Optional time functions

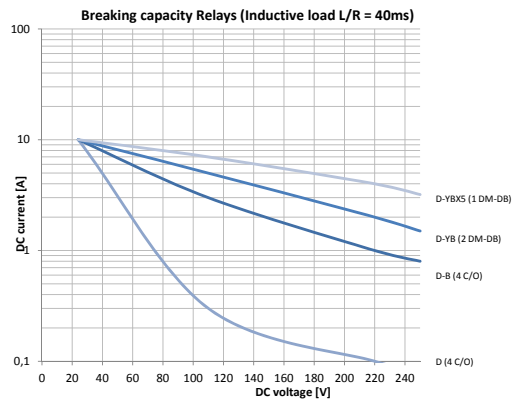
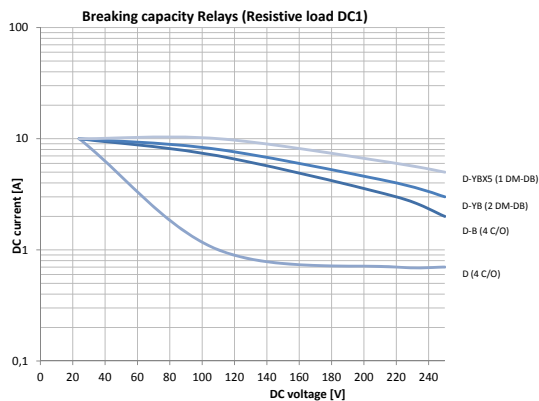
Technical specification

Type*	Contacts	Reset / type	Voltage range	Operating burden	Transient overvoltage	Operating voltage	Operating time
Auxiliary relays							
D	4 C/O	Self reset	30/32, 48, 110, 125, 220, 240, 250 VDC 110, 240 VAC	Self reset relays < 3 W Reset coils = 0 W	5 kV (1.2/50 µs)	80 %...110 % AC / DC	< 20 ms DC 5 ms AC
D8	8 C/O						
High DC breaking capacity relays (10 A, DC1)							
D-YB	2 DM/DB	Self reset	30/32, 48, 110, 125, 220, 240, 250 VDC	Self reset relays < 3 W Reset coils = 0 W	5 kV (1.2/50 µs)	80 %...110 % AC / DC	< 20 ms DC 5 ms AC
D-YBX5	1 DM/DB						
High speed tripping relays							
D-R4	4 C/O	Self reset Mechanical flag	30/32, 48, 110, 125, 220, 240, 250 VDC	During pull-in 25 W Continuous 1 W	5 kV (1.2/50 µs)	80 %...110 % DC	< 7 ms DC
D-RBA	4 C/O	Self reset Magnetic arc blow-out Mechanical flag					
Bistable / latching remote relays							
BD	3 C/O 1 N/O	Electrical reset	30/32, 48, 110, 125, 220, 240, 250 VDC	During pull-in 1.7 W / 4 VA Reset coils = 0 W	5 kV (1.2/50 µs)	80 %...110 % AC / DC	-
KDN	8 C/O						

* See our website for more types and voltages

Options*	Function	Specification
A	Mechanical hand reset flag	
B	Heavy duty contacts, magnetic arc blow-out	7 A, DC1 @ 110 V
H	High burden	10 µF, 1.5 U _n
S	Mechanical following flag	
T	Test button	
V	Wide operating and temperature range	70 % ... 125 % Unom / -25 °C...+70 °C

* Not all options can be combined, see our website for more details and options



Auxiliary, trip & remote relays

Available types

D and D-B High performance auxiliary relays

- Plug-in relay
- High reliable contacts
- High operate speed and low bounce
- 4 or 8 heavy duty contacts
- Self-reset
- Optional electromechanical flag indication
- Standard with LED and back EMF-diode
- Wide range of options



Available types	
D or D-B	Single element 4 contacts
D8	Dual element 8 contacts

D-R4 High speed tripping relays

- Plug-in relay
- High reliable contacts
- Extreme high operate speed < 7 ms and low bounce
- 4 heavy duty contacts
- Self-reset
- Wide range of operating voltages
- Wide range of options



Available types	
D-R4	Single element 4 contacts
D8-RA	Dual element 7 contacts

BD and KDN High performance latching remote relays

- Plug-in bistable / latching relay
- High reliable electrical reset contacts
- High operate speed and low bounce
- 4 or 8 heavy duty contacts
- Electromechanical flag indication
- Wide range of operating voltages
- Wide range of options



Available types	
BD	Single element 4 contacts
KDN	Dual element 8 contacts

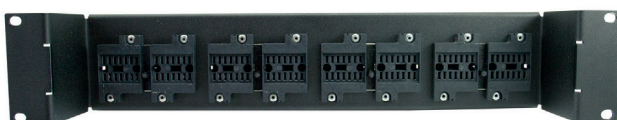
Sockets for D-relays



V23	V29	V33	V93	V99
35 mm rail mounting	35 mm rail mounting	Flush mounting	35 mm rail mounting	35 mm rail mounting
Screw terminals	Spring clamp terminals	Spring clamp terminals	Screw terminals	Spring clamp terminals

19" relay rack for D-relays

The 19" relay rack is equipped with 8x V33 sockets to carry any combination of relays. The racks are available in black mat finish or RAL 7035 grey.



* See our website for more types

D-platform

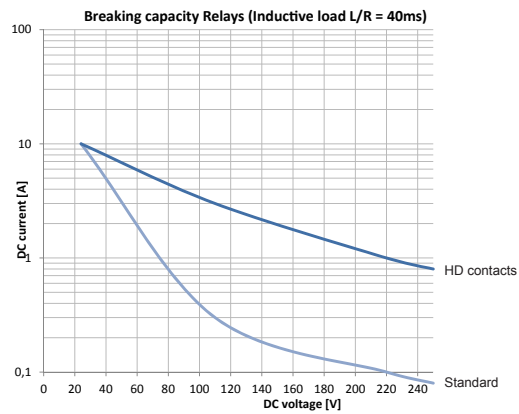
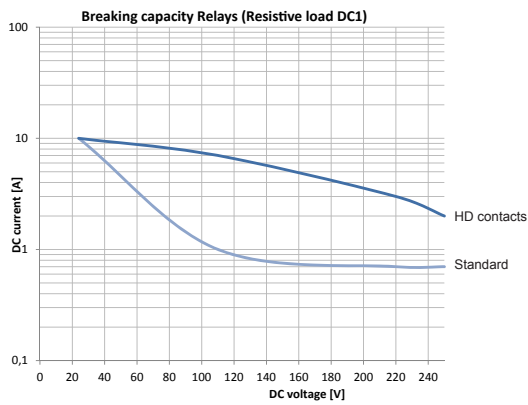
Features

- Up to 4 heavy duty C/O contacts
- 3U high 2U wide rack or flush mounting
- Plug-in terminal block
- M4 screw terminals
- Wide range of operating voltages
- Optional gold contacts
- Standard LED coil pickup indication

Technical specification

Type*	Contacts	Reset / type	Voltage range	Operating burden	Transient overvoltage	Operating voltage	Operating time
ARD4 - High performance auxiliary relays							
ARD4	4	Self, hand, electrical	30/32, 48, 110, 125, 220, 240, 250 VDC 110, 240 VAC	Self reset relays < 3 W Reset coils < 3 W	5 kV	70 %...120 % DC 80 %...110 % AC	< 20 ms
TRD4 - High speed tripping relays							
TRD4	4	Self, hand, electrical	30/32, 48, 110, 125, 220, 240, 250 VDC	Self reset relays < 25 W Reset coil < 10 W	5 kV	65 %...120 % DC	< 10 ms
XRD4 - Supervision relays							
XRD4-4	4	Trip supply	30/32, 48, 110, 125, 220, 240, 250 VDC	Self reset relays < 5 W	5 kV	70 %...120 % DC	< 400 ms
XRD4-6		Trip circuit					

* See our website for more types



Mounting options



Rack mounting



Panel mounting

Available types

TRD4 High speed trip relays

- < 10 ms operate time
- High burden trip relay
- 4 C/O contacts
- Standard magnetic arc blow out
- Self-reset, hand reset and hand/electrical reset versions
- Hand reset mechanical flag
- Flush panel or rack mounting
- Wide range of operating voltages



Available type	
TRD4	Self-reset or latching contacts Surface/rail or panel mounting

ARD4 High performance auxiliary relays

- Self-reset and latching versions
- Low burden auxiliary relay
- 4 C/O contacts
- Standard magnetic arc blow out
- Hand reset flag
- Flush panel or rack mounting
- Wide range of operating voltages



Available type	
ARD4	Self-reset or latching contacts Surface/rail or panel mounting

XRD4 Supervision relays

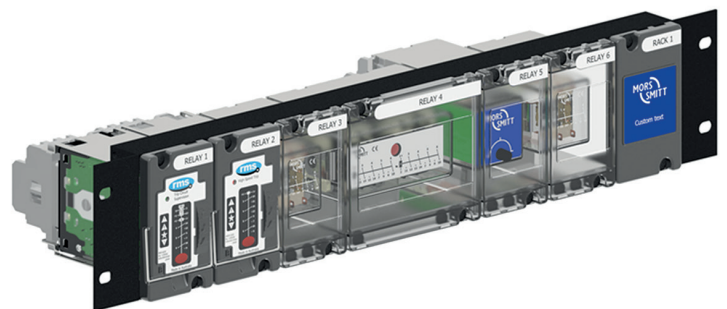
- Trip supply & trip circuit supervision models
- Low burden supervision relays
- 3 C/O or 4 C/O contacts
- Delay on drop-off
- Hand reset flag drops to indicate alarm condition
- Flush panel or rack mounting
- Wide range of operating voltages



Available types	
XRD4-4	Trip supply supervision Surface/rail or panel mounting
XRD4-6	Trip circuit supervision Surface/rail or panel mounting

Delta Flex Modular auxiliary relay system

- 2U high 19-inch rack or flush mounting
- Wide range of auxiliary relay functions
- Specify components or complete sub-rack system
- M4 screw terminals suitable for ring lugs
- Integrated front panel covers
- Custom panel labelling



Alpha platform

Features

- Rugged modular construction
- Double action contacts for high operating speed and low bounce
- Electrical reset interlock
- Electromechanical flag indication
- Rack of flush mounting
- M4 screw terminals
- Optional gold plated contacts for low current

Technical specification

Type*	Contacts / terminals	Reset / type	Voltage range	Operating burden	Transient overvoltage	Operating voltage	Operating time
AR - High performance auxiliary relays							
AR5	5	Self, hand, electrical	30/32, 48, 110, 125, 220, 240, 250 VDC 110, 240 VAC	Self reset relays < 5 W Latching relays = 0.4 W Reset coils = 0 W	5 kV	70 %...120 % DC 80 %...110 % AC	< 35 ms
AR12	12						
AR25	10						
TR - High speed tripping relays							
TR5	5	Self, hand, electrical	30/32, 48, 110, 125, 220, 240, 250 VDC	Self reset relays < 5 W Latching relays = 0.4 W	5 kV	50 %...120 % DC	< 8 ms
TR12	12						
XR - Supervision relays							
XR5-00-1	5	Trip relay coil	30/32, 48, 110, 125, 220, 240, 250 VDC	Depending on the CB coil resistance	5 kV	70 %...120 % DC	-
XR5-00-4		Trip supply					
XR5-00-6		Trip circuit					
4M200 - Test block systems							
4M200	14	Test block	Max. 660 V	-	-	-	-
4M220		Test plug					

* See our website for more types

Contact rating	
Make and carry continuously	1250 VA AC, limited at both 660 V and 8 A
Make and carry for 3 seconds	7500 VA AC, limited at both 660 V and 30 A
AC break capacity	1250 VA AC, limited at both 2500 V and 8 A
DC break capacity	1250 W DC resistive
Contact operational life	
Maximum contact load	> 10.000 operations

Available types*

TR High speed tripping relays

- Electrical reset interlock
- User selectable low or high burden
- High reliable double action contacts
- High operate speed and low bounce
- 5 or 12 heavy duty contacts
- Self-reset, hand reset or hand/electrical reset
- Electromechanical flag indication
- Wide range of operation voltages



Available types	
TR5	High or low burden 5 contacts
TR12	High or low burden 12 contacts

AR High performance auxiliary relays

- Low burden auxiliary relay
- High reliability double action contacts
- High operate speed and low bounce
- 5, 10 or 12 heavy duty contacts
- Self-reset, hand reset or hand/electrical reset
- Electromechanical flag indication
- Wide range of operation voltages



Available types	
AR5	Single element 5 contacts
AR12	Single element 12 contacts
AR25	Dual element 2 x 5 contacts

XR Supervision relays

- Supervision of CB trip circuits, supply & CB coil integrity
- No external resistors required
- Fixed time delay
- Low AC burden
- High operate speed and low bounce
- Self-reset, hand reset or hand/electrical reset
- Electromechanical flag indication
- Wide range of operating voltages



Available types	
XR5-1	Trip relay coil supervision
XR5-4	Trip supply supervision
XR5-6	Single pole, trip circuit supervision

4M200 Test block systems

- Finger safe test sockets
- 14 independent test groups
- Automatic CT shorting inside test block
- Staged isolation
- One test plug fits all 4M200 variants
- Compatible with industry standard test plugs
- Optional test plug to block polarizing system
- Identification of CT circuits on front panel



Available types	
4M200	Test block
4M220	Test plug

* See our website for more types



Mors Smitt

A Wabtec Company

Mors Smitt is part of Wabtec Corporation. A global provider of value-added, technology-based products and services for railway, transit, freight and other industrial markets, with facilities world wide.

Business activities

Railway technology
Industrial technology

Core competence

Protection and Control of electrical circuits and systems in mission-critical applications serving rail car builders, rail operators, contractors and power utilities worldwide.

Mission statement

To be preferred a supplier by offering safe, reliable and cost-effective solutions with focus on quality and operational excellence exceeding customer expectations.

Vision

World leader in relay technology in railway and power markets. World leader in train borne energy measuring systems.

Our sectors



Railway rolling stock components

Relays, relay life services, miniature circuit breakers, transducers.



Railway rolling stock systems

Engineered solutions, energy measurement, power control, services.



Railway signalling & train protection

Signalling relays, train protection, systems, services.



Power utility

Relays, protection relays, test block systems, arc flash monitoring.



Heavy industry, oil & gas

Relays, engineered solutions, services.



Maritime instruments

Bridge(-wing) & ship control room instrumentation.



Portable instruments

Test & measuring equipment, calibration services.

Legacy brands



Employees

460 (50 engineering,
35 sales & support)

Quality standards

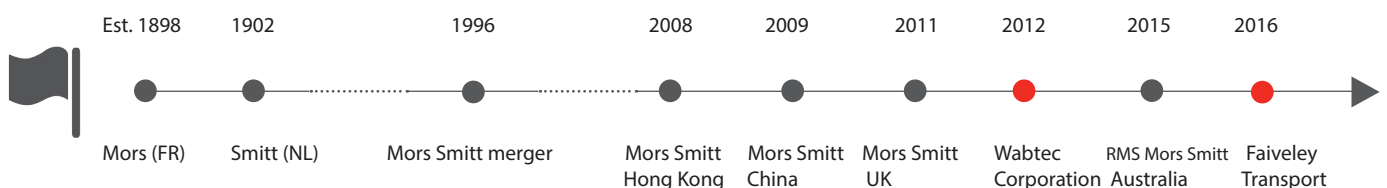
IRIS, ISO 9001, ISO 14001

Global reach

5 manufacturing sites
6 sales & support offices



History



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