



## HDW3 Air Circuit Breaker

Reliable made affordable



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## About Himel



Himel is a multinational manufacturer and provider of electrical products that successfully combines global expertise with local knowledge. We focus on long-term partnership with customers and offer products that meet real needs and ensure adequate compatibility for common usage. Our global footprint and technology allows to provide the best combination of affordable and reliable offers for low voltage power distribution, industrial automation and home electric in over 50 countries where we are present.



Reliable made affordable.

## General contents

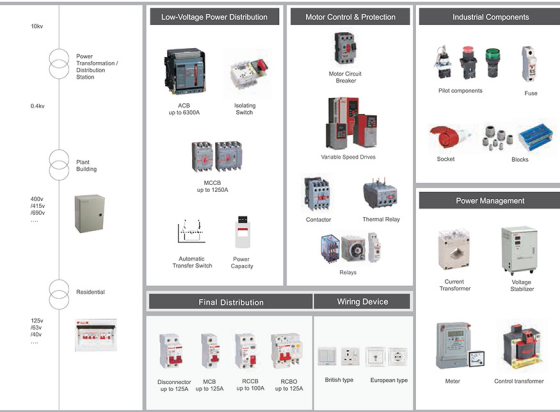
### ■ Himel HDW3 Air Cercuit Breaker

- Selection guide ..... 7
- Overview ..... 8
- iRT 326 controller ..... 14
- Accessory and Overview ..... 19
- Accessory selection guide ..... 23
- Installation Dimension ..... 27
- Electrical schematic diagram ..... 45
- Tripping curve ..... 47

# HDW3 A new line of Air Circuit Breaker

## Himel Offer Family

We bring efficient power to every home



Arcing contact design ,  
Enhanced **Electrical Life**



Integrated ASIC design ,  
Strengthened **Stability**



Zero arcing design,  
Ensured **Safety**



Fast & Flexible wiring,  
Achieved **High Efficiency**



Environment , broadened **applicability**



## Selection Guide



### Selection Guide

Product	Frame size	Breaking Capacity	Rated current	Poles	Installation Type	Motor mechanism(MCH) or Closing (overload)	Shunt release(SK)	Undervoltage release	Auxiliary contact	Intelligent controller
HDW3	16/100	M:40kA/5kV S:50kA/5kV	6A/60A	3/3P	DH Draw-out horizontal (1800A/4000A) FH Fixed default (1800A/4000A)	D/C/220V	D/C/220V	N/AC/220V	4NO+4NC	LTR326(H)
	20/200	S:50kA/5kV	60/63A	4/4P	DH Draw-out Vertical(1800A/4000A)	N/AC/220V	N/AC/220V	V/AC/60V	6NO+6NC	M: ITR326A(S/SH)
	32/200		63/80A		PF Fixed Vertical(1800A/4000A)	V/AC/60V	V/AC/60V	P/AC/220V with time delay	8NO+8NC	H: ITR326H(S/SH/SH)
	40/400		10/100A		PF Fixed Vertical(1800A/4000A)	S: Without MCH/XP	S: Without shunt release	T/AC/50V with time delay	8NO+8NC	E: ITR326E(S/SH)
	63/630		12/125A					T/AC/50V with time delay		T: ITR326A(S/SH)
			18/180A					S: Without undervoltage release		
			20/2000A							
			25/2500A							
			32/3200A							
			40/4000A							
			50/5000A							
			63/6300A(Only 3P Draw-out type)							

HDW3 default with 4NO+4NC auxiliary contact , door frame, phase partition , power module ,ITR326A

## Overview



### Main Parameters

- Frame size: 1600,2000,3200,4000,6300
- Rated current In (A): 400 ~ 6300
- Rated voltage AC Ue (V): 400/415, 660/690
- Poles: 3 & 4
- Installation method: Fixed type and draw-out type
- Wiring method: Horizontal rear connection, Vertical rear connection

### Intelligent Controllers

- ITR326 (basic type)  
Basic protection (L, S, I & G)
- ITR326A (standard type)  
Basic protection  
Basic measurement  
Auxiliary function
- ITR326H (Advanced type)  
Basic + high level protection  
Multiple measurement  
Auxiliary function  
Advanced function  
Communication

### Accessories

- Motor operating mechanism: shunt coil, undervoltage coil, closing coil
- Intelligent controller accessories: N phase External transformer, Ground transformer, leakage current transformer, power module, Signal conversion module
- Lock: key lock , door lock
- Mechanical interlocking : cable interlocking, rob interlocking
- Operation and protection: door frame, phase partition
- Indicator contact: auxiliary, contact Alarm contact





## Overview



### Range of Application

HDW3 series air circuit breaker. The rated current is from 400-6300A. The rated voltage is 400V/415V, 660/690V, suitable for AC 50/60Hz and mainly used in Power distribution system networks, to distribute electric energy and protect the line and power supply equipment far away from the fault hazard of overload, under voltage, short circuit and single-phase grounding.

The circuit breaker can be widely used in power stations, factories, mines and modern high-rise buildings, especially the intelligent building power distribution system.

Application standard: IEC/EN 60847-2

### Normal Working Condition

Environment temperature Ambient temperature is -5°C ~+40°C(certification); mean value of 24h shall not exceed +35°C. It can also be used at ultimate temperature 40°C ~+70°C(L type, M type controller).

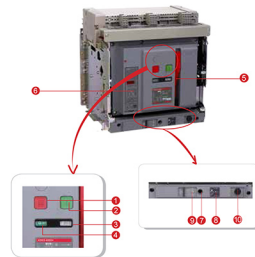
Altitude	≤ 5000m
Electromagnetic interference	Applies to Environment A
Class of pollution	Class of pollution level 3 Installation position shall be vertical, inclination of each direction shall not more than 5°
Installation level	Circuit breaker main circuit and undervoltage trip coil, power transformer primary coil are level IV, auxiliary circuit and control circuit is level III
Transportation condition	Move gentle, do not put upside down, avoid collision

## Overview



### Front Face

- 1 Open button
- 2 Closing button
- 3 Spring charge mechanism status indicator
  - + Spring charged , closing is allowed
  - + Spring charged , closing is not allowed
  - + Spring released
- 4 Main contact position indicator
  - + Open
  - + Close
- 5 Spring charge operation handle
- 6 Controller
- 7 Draw in (out) device
- 8 Connection, test and disconnection position indication
- 9 Connect, test and disconnection position limiter
- 10 Rocker storage



## Overview



### Technical Parameters

Common features	
Pole	3, 4
Rated operational voltage AC Ue(V)	400/415 660/690V
Rated insulation voltage Ui(V)	1000
Rated impulse withstand voltage Uimp(kV)	12
Rated frequency (Hz)	50/60
For isolation	
Standard	IEC 60947-2
Certification	CE KEMA

Product		HDW3																			
Frame size		1600M	1600S	2000M	2000S	3200M	3200S	4000M	4000S	6300M	6300S										
Rated current In(A)																					
400		■	■																		
630		■	■	■	■																
800		■	■	■	■																
1000		■	■	■	■																
1250		■	■	■	■																
1600		■	■	■	■			■	■	■	■										
2000				■	■																
2500						■	■	■	■	■	■										
3200						■	■	■	■	■	■										
4000										■	■	■	■								
5000											■	■	■								
6300												■	■								
Breaking capacity		800V/850V	850V/900V	1000V/1050V	1250V/1300V	1600V/1700V	2000V/2100V	2500V/2600V	3200V/3300V	4000V/4100V	5000V/5100V	6300V/6400V	6300V								
Icu (kA)		50	35	42	35	80	50	65	40	80	65	65	50	100	65	85	65	120	85	85	75
Ics (kA)		42	35	42	35	65	40	65	40	65	50	65	50	85	65	85	65	100	75	85	75
Icw(1s)(kA)		42	35	42	35	65	40	65	40	65	50	65	50	85	65	85	65	100	75	85	75

Mechanical		Without maintenance life		With maintenance	
12500	15000	10000	10000	20000	5000
25000	30000	20000	20000	5000	8000
Electrical life		400/415V		690V	
6000	6500	5000	5000	8000	500
4000	4000	3000	3000	500	500

Dimension(mm)		3P		4P	
Draw-out		322*268*330	436*405*425	436*405*425	439*441*428.6
Fixed		322*268*330	436*500*425	436*580*425	439*556*428.6
Weight(KG)		310*276*229	397*364*327	397*428*327	352*422*329.5
		310*346*229	397*459*327	397*543*327	352*533*329.5

Weight(KG)		3P		4P	
Draw-out type		34	73.6	93.8	78
Fixed type		41	85.5	115	95
Tripping time		14	41.4	53.4	42
		17	52	68	52

Tripping time	
Tripping time with arc extinguishing	<25ms
Closing time	<70ms



HDW3-1600



HDW3-2000



HDW3-3200



HDW3-4000



HDW3-6300

## Overview



### Temperature derating table

Frame	Curr	-5°C ~ +40°C	+45°C	+50°C	+55°C	+60°C
HDW3-1600	400	400	400	400	400	400
	630	630	630	630	630	550
	800	800	800	800	800	700
	1000	1000	1000	1000	950	900
	1250	1250	1200	1200	1150	1050
	1600	1600	1550	1500	1450	1350
HDW3-2000	630	630	630	630	630	630
	800	800	800	800	800	700
	1000	1000	1000	1000	1000	1000
	1250	1250	1250	1250	1250	1150
	1600	1600	1600	1500	1500	1300
	2000	2000	1900	1900	1900	1700
HDW3-3200	2000	2000	2000	2000	2000	2000
	2500	2500	2400	2300	2200	2200
	3200	3200	3000	3000	2800	2800
	1600	1600	1600	1600	1600	1600
	2000	2000	2000	2000	2000	2000
	2500	2500	2500	2500	2500	2200
HDW3-4000	3200	3200	3200	3200	3000	2500
	4000	4000	4000	3600	3400	3200
	4000	4000				
	5000	5000				
	6300	6300				
	6300	6300				

### Altitude derating table

Altitude below 2000 m will not affect circuit breaker performance. Above this altitude, the diminution of air insulation characteristics and cooling capacity must be considered; The correction coefficients given in the table below are used for installation above 2000 meters:

Altitude (m)	2000	2500	3000	3500	4000	4500	5000
Isolation voltage Ui (V)	1000	910	910	830	830	770	770
Impulse withstand voltage Uimp (kV)	12	10.5	10.5	9.5	9.5	9	9
Maximum working voltage Ue(V)	690	690	690	660	600	600	550
Ambient heat rating In (A)	1In	0.98In	0.93In	0.91In	0.87In	0.84In	0.81In

## Overview



### Power loss and resistance per pole

Power loss is measuring at In,50/60Hz, input/output resistance is the value at cold state in per pole.

Frame	Rated Current (A)	Draw-out type		Fixed type	
		Power Loss (W)	Input/Output resistance( $\mu\Omega$ )	Power Loss (W)	Input/Output resistance( $\mu\Omega$ )
HDW3-1600N	400	28.8	42.0	20.5	27
	630	55.6	42.0	32.8	27
	800	98.2	42.0	53.5	27
	1000	153.5	42.0	82.6	27
	1250	250.8	42.0	131.8	27
	1600	460.5	38.0	220	26
HDW3-2000N&H	630	56.8	48.5	26.5	21.9
	800	73.0	48.5	38.6	21.9
	1000	116.3	38.0	56.9	20.2
	1250	179.8	38.0	90.2	20.2
	1600	294.9	38.0	145.8	20.2
	2000	399.6	33.7	202.5	18
HDW3-3200N	2000	200.6	18.6	99.6	15.8
	2500	310.0	16.2	147.8	14.7
	3200	486.9	15.8	216.3	9.2
	1600	390.6	27.5	180.2	13
HDW3-4000N	2000	480.8	27.0	252.8	13
	2500	600.0	19.0	205	9
	3200	670.0	13.0	423.6	8.5
	4000	900.0	11.8	652.7	8
HDW3-6300N	4000	910.7	9.5	/	/
	5000	940.0	9.0	/	/
	6300	1150.0	8.5	/	/

## IRT 326 Controller



### Intelligent Controller Introduction

IRT326 IRT326A IRT326H



L

M

H

	L	M	H
<b>Protection function</b>	Overload protection L Short-circuit protection with short delay S Short-circuit protection instantaneous I Ground protection G MCR Protection HSISC protection	Overload protection L Short-circuit protection with short delay S Short-circuit protection instantaneous I Ground protection G MCR protection HSISC protection	Overload protection L Short-circuit protection with short delay S Short-circuit protection instantaneous I Ground protection G MCR protection HSISC protection Under voltage protection/alarm Overvoltage protection/alarm voltage unbalance protection /alarm Phase sequence protection/alarm Low frequency protection/alarm High frequency protection/alarm Reverse power protection/alarm
<b>Measurement</b>		Current measurement Voltage measurement Power measurement Frequency measurement Harmonics measurement	Current measurement Voltage measurement Power measurement Frequency measurement Harmonics measurement
<b>Auxiliary</b>	Pre-alarm Event record Test	Pre-alarm Self-diagnostic Event record Test LED	Pre-alarm Self-diagnostic Event record Test LCD
<b>Special function</b>			Load monitoring Zone selective interlock
<b>Communication</b>			Modbus

## iRT 326 Controller



- 1 Top fixation
- 2 LED indicator light
- 3 Controller name plate
- 4 Bottom fixation
- 5 External connection terminal
- 6 Transformer connector
- 7 Flux/jogging connector



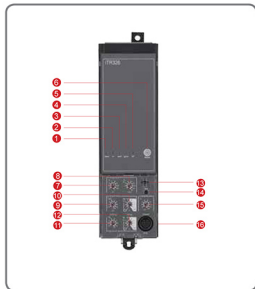
### L type (basic type)

#### Indications

- 1 Alarm lamp
- 2 Over current tripping indication
- 3 Short delay or instantaneous tripping indication
- 4 Ground or leakage current fault tripping indication
- 5 Advanced protection
- 6 Reset button

#### Settings

- 7 Overload current setting IR
- 8 Over current time delay tR
- 9 Short delay tripping lsd
- 10 Short delay tripping time tsd
- 11 Ground fault tripping I<sub>g</sub>
- 12 Ground fault tripping time tg
- 13 Padlock position
- 14 Test button
- 15 Instantaneous tripping Ii
- 16 Test connection



## iRT 326 Controller



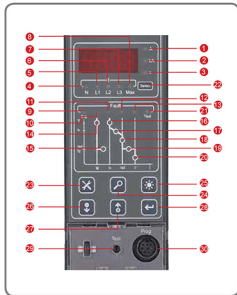
### M type (standard type)

#### Indications and Settings

- 1 Current unit A
- 2 Current unit kA
- 3 Time unit S
- 4 N phase Current
- 5 A phase Current
- 6 B phase Current
- 7 C phase Current
- 8 Maximum Current
- 9 Tripping indication
- 10 Ground protection
- 11 Long delay protection
- 12 Short delay protection
- 13 Instantaneous protection
- 14 Ground Current set value
- 15 Ground time set value
- 16 Long delay Current set value
- 17 Long delay time set value
- 18 Short delay Current set value
- 19 Short delay time set value
- 20 Instantaneous Current set value
- 21 Tests action state

#### Navigation keys

- 22 Toggle key
- 23 Set key
- 24 Query key
- 25 Return/clear light
- 26 -/ down page
- 27 +/- up page
- 28 Enter key
- 29 Test key
- 30 Test connection



### H type (advanced type)

#### Indications

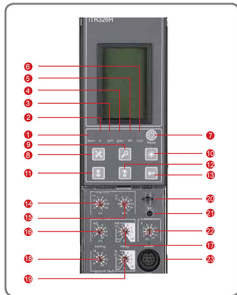
- 1 Alarm lamp
- 2 Long delay tripping indication
- 3 Short delay or instantaneous tripping indication
- 4 Ground or electric leakage fault tripping indication
- 5 Advanced protection
- 6 Communication function
- 7 Reset button

#### Navigation keys

- 8 Set key
- 9 Query key
- 10 Return/clear light
- 11 -/ Down page
- 12 +/- Up page
- 13 Enter key

#### Settings

- 14 Long delay Current setting IR
- 15 Long delay tripping time tR
- 16 Short delay tripping lsd
- 17 Short delay tripping time tsd
- 18 Ground fault tripping I<sub>g</sub>
- 19 Ground fault tripping time tg
- 20 Padlock position
- 21 Test button
- 22 Instantaneous tripping Current
- 23 Test connection
- 24 Button description adjustment panel



## IRT 326 Controller



### Intelligent Controller Protection

Intelligent controller protection characteristic are inverse time limit and constant time-lag, when fault Current exceeds inverse time limit set value, controller can have delay protection according to the constant time-lag.

Inverse time limit curve conforms to characteristic curve I<sup>t</sup>

### Overload protection with long time delay

Threshold of overload protection with long time delay Threshold

<1.05 I<sub>n</sub>: >2h No tripping;

>1.2 I<sub>n</sub>: <1h Tripping

>1.2 I<sub>n</sub>: Tripping with time delay;

I<sub>n</sub> Current setting range: 0.4In, 0.5In, 0.6In, 0.7In, 0.8In, 0.9In, 0.95In, 0.98In, 1.0In

Inverse Time Protection Tripping Characteristics I<sup>t</sup>: t=(k/N)<sup>2</sup> \* I<sub>n</sub>

Setting electric current Action time (s)

1.5 I <sub>n</sub>	16s	32s	64s	128s	192s	256s	320s	384s	480s
2 I <sub>n</sub>	9s	18s	36s	72s	108s	144s	180s	216s	270s
6 I <sub>n</sub>	1s	2s	4s	8s	12s	16s	20s	24s	30s

Note: N---- Overload current is divided from the setting current I<sub>n</sub>

t---- time delay of overload current

t<sub>s</sub>---- time delay of setting value

Allowed tolerance of the tripping time ±10%

### Short circuit protection with short time delay

Threshold of Short circuit protection with short time delay

<0.9 I<sub>sd</sub>: No tripping

>1.1 I<sub>sd</sub>: Tripping;

>1.1 I<sub>sd</sub>: Tripping with time delay

I<sub>sd</sub> setting range: 1.5 I<sub>n</sub>, 2 I<sub>n</sub>, 3 I<sub>n</sub>, 4 I<sub>n</sub>, 5 I<sub>n</sub>, 6 I<sub>n</sub>, 8 I<sub>n</sub>, 10 I<sub>n</sub>+OFF

Short circuit current	Tripping Time				
I <sub>sd</sub> <=0.9I <sub>n</sub>	Inverse time protection	Formula of tripping curve	I <sup>t</sup> : t=(8I <sub>n</sub> ) <sup>2</sup> t <sub>sd</sub>		
		Setting time s	0.1	0.2	0.3
I <sub>n</sub> ≥ 1.1I <sub>sd</sub>	constant time delay protection	Setting time s	0.1	0.2	0.3
		Min. s	0.08	0.14	0.23
		Max. s	0.14	0.2	0.32

Note: I<sub>sd</sub>---- setting short circuit protection value

I---- short circuit current

I<sub>n</sub>---- setting current

t---- tripping time of short circuit

t<sub>sd</sub>---- setting time delay of short circuit protection

Allowed tolerance of the tripping time ±20%

### Short Circuit Instantaneous Protection

Short Circuit Instantaneous Protection Action Threshold

<0.85I<sub>n</sub>: No tripping

>1.15I<sub>n</sub>: tripping

Instantaneous action current setting:2In, 3In, 4In, 6In, 8In, 10In, 12In, 15In+OFF

Note: tolerance of the tripping times:50ms



## IRT 326 Controller



### Ground Fault Protection Action

Ground Fault Protection Action Threshold

<0.9 I<sub>g</sub>: No tripping

>1.1 I<sub>g</sub>: tripping

>1.1 I<sub>g</sub>: Tripping with time delay

Current	A	B	C	D	E	F	G	H	OFF
In<1250	0.2In	0.3In	0.4In	0.5In	0.6In	0.8In	0.9In	In	
In≥1250	500A	600A	700A	800A	900A	1000A	1100A	1200A	

Ground current	tripping time				
I <sub>g</sub> (s)	Inverse time protection	formula of tripping curve	$t = \frac{(I_g)^2}{I^2} \times t_g$		
		Setting time	0.1	0.2	0.3
	constant time delay protection	Setting time	0.1	0.2	0.3
		Min. (s)	0.08	0.14	0.23
		Max. (s)	0.14	0.2	0.32

Note: I<sub>g</sub> ground protection setting, when In ≥ 1250A, I<sub>g</sub>=1200A, when In<1250A, I<sub>g</sub>=In

I Ground fault current

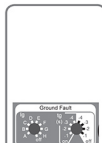
T tripping time with time delay

t<sub>g</sub> setting tripping time of ground fault

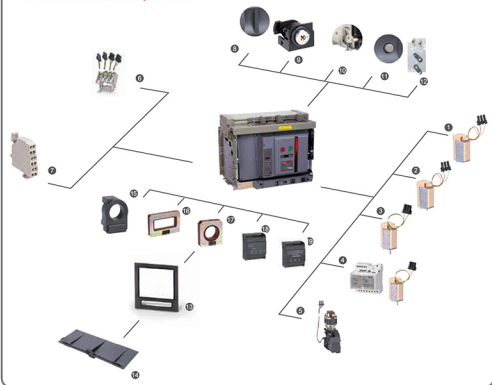
Allowed tolerance of the inverse tripping time ±20%

### Factory Setting

Tripping curves I <sup>t</sup>	over current		short circuit with time delay		Inst.	Ground fault		Thermal memory
	I <sub>n</sub>	t <sub>n</sub>	I <sub>sd</sub>	t <sub>s</sub>	I <sub>i</sub>	I <sub>g</sub>	t <sub>g</sub>	
	1In	30s	6In	0.2s	10In	Gear G	0.4s	20min



## HDW3 Breaker Accessory Indicator



Remote Operation	Indication Contact	Lock and Connection	Operation and protection	Controller accessories
1 Shunt coil	6 Auxiliary switch OF	9 Padlock	13 Door frame	15 N phase external transformer
2 Closing coil	7 Secondary terminal	10 Key lock	14 Phase partition	16 Leakage current transformer
3 Undervoltage release		11 Door lock		17 Ground transformer
4 Undervoltage delay release		12 Connection, separation, test position locking mechanism		18 Power module
5 Motor operating mechanism		13 Mechanical interlocking		19 Signal conversion module

## Remote Operation

### Shunt release MX

After circuit breaker is switched on, when shunt release is under specified power supply voltage, disconnect the circuit breaker instantaneously by remote operation.

- Rated control supply voltage AC220V/AC230V, AC380V/AC400V, DC220V, DC110V
- Operation voltage (0.7-1.1) U<sub>n</sub>
- Break-time: 50 ± 10ms

### Closing coil XF

After spring be fully charged, Closing coil can make the circuit breaker close under the specified power supply voltage and can have remote operation.

- Rated control supply voltage AC220V/AC230V, AC380V/AC400V, DC220V, DC110V
- Operating voltage: (0.85-1.1) U<sub>n</sub>
- Closing time: 55 ± 10ms

### Undervoltage release MN

After the breaker switch on , Undervoltage release will tripped circuit breaker instantaneously when power supply drop down between 70%-35% U<sub>n</sub>.

The breaker can be switched on when the power supply is 85% U<sub>n</sub>.

- Rated control supply voltage AC220V/AC230V, AC380V/AC400V
- Operation voltage: (0.35-0.7) U<sub>n</sub>
- Reliable Closing voltage: (0.85-1.1) U<sub>n</sub>
- Non closing voltage: < 0.35U<sub>n</sub>
- Delay time: 0.5s, 1s, 1.5s, 3s (1600, 4000), 1s, 3s, 5s (2000, 3200)

### Under voltage release with time delay MNR

The MNR (when voltage drop) will switched off the circuit breaker with certain time delay , 0.5s, 1s, 1.5s, 3s(1600, 4000), 1s, 3s, and 5s (2000, 3200).

### Motor Operating Mechanism MCH

When the circuit breaker is disconnected and power supply is available, motor operating mechanism can automatically charge the spring of the circuit breaker, so that the circuit breaker is disconnected or closed under the action of shunt excitation, undervoltage trip and closing electromagnet. In the absence of power supply, the handle can be used to store energy for the circuit breaker.

- Rated control supply voltage AC220V/AC230V, AC380V/AC400V, DC220V, DC110V
- Operation voltage: (0.85-1.1) U<sub>n</sub>
- Power dissipation: 75W(180W(1600), 85W(2000), 110W(3200), 180W(4000)
- Spring charging : <5s
- Utilization category: AC15, DC13



## Accessory and Overview



### Indication Contacts

#### Auxiliary Contact OF

4NO+4NC by default

(4000H can provide 8NO+8NC and 6NO+6NC, 2000, 3200 also can provide 6NO+6NC)  
It can be used to monitor the status of circuit breakers, such as connecting circuit breaker position indicator and disconnecting indicator

Rated thermal current Ith: AC380V/AC400V 0.75A, DC220V 0.15A, AC220V/AC230V 1.3A



### Lock

#### Drawer Padlock

Lock provided by user

If the padlock is provided by the user himself, and the circuit breaker is in the position of "separation", pull out the padlock plate. After locking, the crank handle cannot be inserted.



#### Keylock

The breaker can be locked by key lock in switch off position. When the key is inserted into the lock and turned on to "on" position, the breaker can be allowed to switched on. (Key turned off or removed from lock, breaker can be switched on)

There are 3 options of key lock available ( available for 2 Breaker Interlock & 3 Breaker Interlock )

- One lock one key
- Two locks one key
- Three locks two key



#### Drawer Position Locking Mechanism

It is a locker when the breaker is in the position of "connection," "test," and "disconnection" in a drawer type circuit breaker. Circuit breaker three positions are indicated through the indicator, the advance and retreat handle is locked in the exact position and is unlocked through the reset button.



#### Door Lock

It is suitable for cabinet frame of 2000 and 3200

In drawer type circuit breaker, it is installed on the side of circuit breaker and linkages to distribution cabinet door. It can not be opened when the circuit breaker is connected or tested. The cabinet door can be opened in the open position. It can prevent the circuit breaker from slipping and causing damage.



## Accessory and Overview



### Operation and Protection

#### Door Frame

- The door frame installed on the door of distribution cabinet can increase IP protection level to IP40
- It is applicable to stationary type and drawer type.



#### Phase Partition

- The insulation board installed in the middle of the breaker bus can increase the creepage distance and improve the insulation capacity



### Controller Accessories

#### N Phase External Transformer

In a 3P+N grounding mode, an External transformer used to measure neutral phase current is harnessed to the wiring bus by the user



#### Ground Transformer

- A special External transformer is used to measure the earth current when the ground current returns. It can protect the upper and lower ground faults of the circuit breaker at the same time
- It is only applicable to iTR326H controller



#### Leakage Current Transformer

- When the earth protection is leakage type, a special rectangular transformer is added
- It is only applicable to iTR326H controller

#### Power Module

- It can provide auxiliary power for intelligent controller at the circuit of AC220V/AC230V, AC380V/AC400V, DC220V, DC110V
- Input is AC220V/AC230V, AC400V/AC380V, DC220V, DC110V, output is DC24V  
The input fluctuation range is 20%, the output fluctuation range is 5%, and the total power of 4 sets of DC24V is 7W.



#### Signal Conversion Module

- Output signal unit is applicable to communication function, such as regional interlocking, signal processing of four remote functions or fault alarm or indication, etc.
- It is only applicable to iTR326H controller



## Accessory and Overview



### Accessory Coding

	Accessory coding	Accessory name	
Controller	HDW3TUL	Controller iTR326	
	HDW3TUM	Controller iTR326A	
	HDW3TUH	Controller iTR326H	
Remote Operation			
Shunt release	HDW3MX12A	Shunt tripper AC230V/CDW3-2000AF/3200AF/6300AF	
	HDW3MX13A	Shunt tripper AC400V/CDW3-2000AF/3200AF/6300AF	
	HDW3MX12D	Shunt tripper DC220V/CDW3-2000AF/3200AF/6300AF	
	HDW3MX11D	Shunt tripper DC110V/CDW3-2000AF/3200AF/6300AF	
	HDW3MX2A	Shunt tripper AC230V/CDW3-1600AF/4000AF	
	HDW3MX3A	Shunt tripper AC400V/CDW3-1600AF/4000AF	
	HDW3MX2D	Shunt tripper DC220V/CDW3-1600AF/4000AF	
	HDW3MX1D	Shunt tripper DC110V/CDW3-1600AF/4000AF	
	Closing Coil	HDW3XF12A	Closing tripper AC230V/CDW3-2000AF/3200AF/6300AF
		HDW3XF13A	Closing tripper AC400V/CDW3-2000AF/3200AF/6300AF
HDW3XF12D		Closing tripper DC220V/CDW3-2000AF/3200AF/6300AF	
HDW3XF11D		Closing tripper DC110V/CDW3-2000AF/3200AF/6300AF	
HDW3XF2A		Closing tripper AC230V/CDW3-1600AF/4000AF	
HDW3XF3A		Closing tripper AC400V/CDW3-1600AF/4000AF	
HDW3XF2D		Closing tripper DC220V/CDW3-1600AF/4000AF	
Undervoltage release	HDW3MN12A	Undervoltage tripper AC230V/CDW3-2000AF/3200AF/6300AF	
	HDW3MN13A	Undervoltage tripper AC400V/CDW3-2000AF/3200AF/6300AF	
	HDW3MN2A	Undervoltage tripper AC230V/CDW3-1600AF/4000AF	
	HDW3MN3A	Undervoltage tripper AC400V/CDW3-1600AF/4000AF	
	Undervoltage Delay release	HDW3MNR12A	Undervoltage delay tripper AC230V/CDW3-2000AF/3200AF/6300AF
HDW3MNR13A		Undervoltage delay tripper AC400V/CDW3-2000AF/3200AF/6300AF	
HDW3MNR2A		Undervoltage delay tripper AC230V/CDW3-1600AF/4000AF	
HDW3MNR3A		Undervoltage delay tripper AC400V/CDW3-1600AF/4000AF	

## Accessory and Overview







Remote Operation	Accessory Coding	Accessory Name	
Motor Mechanism	HDW3MCH202A	Motor mechanism AC230V/HDW3-2000AF	
	HDW3MCH203A	Motor mechanism AC400V/HDW3-2000AF	
	HDW3MCH202D	Motor mechanism DC220V/HDW3-2000AF	
	HDW3MCH201D	Motor mechanism DC110V/HDW3-2000AF	
	HDW3MCH322A	Motor mechanism AC230V/HDW3-3200AF	
	HDW3MCH323A	Motor mechanism AC400V/HDW3-3200AF	
	HDW3MCH322D	Motor mechanism DC220V/HDW3-3200AF	
	HDW3MCH321D	Motor mechanism DC110V/HDW3-3200AF	
	HDW3MCH162A	Motor mechanism AC230V/HDW3-1600AF	
	HDW3MCH163A	Motor mechanism AC400V/HDW3-1600AF	
	HDW3MCH162D	Motor mechanism DC220V/HDW3-1600AF	
	HDW3MCH161D	Motor mechanism DC110V/HDW3-1600AF	
	HW3MCH402A	Motor mechanism AC230V/HDW3-4000AF	
	HDW3MCH403A	Motor mechanism AC400V/HDW3-4000AF	
	HDW3MCH402D	Motor mechanism DC220V/HDW3-4000AF	
	HDW3MCH401D	Motor mechanism DC110V/HDW3-4000AF	
	HDW3MCH632A	Motor mechanism AC230V/HDW3-6300AF	
	HDW3MCH633A	Motor mechanism AC400V/HDW3-6300AF	
	HDW3MCH632D	Motor mechanism DC220V/HDW3-6300AF	
	Indicator Contact		
Auxiliary Contact	HDW3OF1644	Auxiliary contact 4 open 4 close (HDW3-1600AF)	
	HDW3OF2044	Auxiliary contact 4 open 4 close (HDW3-2000AF)	
	HDW3OF2066	Auxiliary contact 6 open 6 close (HDW3-2000AF)	
	HDW3OF3244	Auxiliary contact 4 open 4 close (HDW3-3200AF/6300AF)	
	HDW3OF3266	Auxiliary contact 6 open 6 close (HDW3-3200AF/6300AF)	
	HDW3OF4044	Auxiliary contact 4 open 4 close (HDW3-4000AF)	
	HDW3OF4066	Auxiliary contact 6 open 6 close (HDW3-4000AF)	
HDW3OF4088	Auxiliary contact 8 open 8 close (HDW3-4000AF)		
Lock			
Key Lock	HDW316L3	3 locks 2 keys HDW3-1600AF	
	HDW316L2	2 locks 1 key HDW3-1600AF	
	HDW316L1	1 lock 1 key HDW3-1600AF	
	HDW3L3	3 locks 2 keys HDW3-2000AF/3200AF/6300AF	
	HDW3L2	2 locks 1 key HDW3-2000AF/3200AF/6300AF	
	HDW3L1	1 lock 1 key HDW3-2000AF/3200AF/6300AF	
	HDW340L3	3 locks 2 keys HDW3-4000AF	
	HDW340L2	2 locks 1 key HDW3-4000AF	
	HDW340L1	1 lock 1 key HDW3-4000AF	
	Door Lock	HDW320DLR	Drawer type gate lock HDW3-2000AF
		HDW323DLR	Drawer type gate lock HDW3-3200AF






## Accessory and Overview



Operation and Protection	Accessory Coding	Accessory Name
Door Frame 	HDW316FCDP	Fixed type door frame HDW3-1600AF
	HDW316DCDP	Drawer type door frame HDW3-1600AF
	HDW320FCDP	Fixed type door frame HDW3-2000AF
	HDW320DCDP	Drawer type door frame HDW3-2000AF
	HDW332FCDP	Fixed type door frame HDW3-3200AF
	HDW332DCDP	Drawer type door frame HDW3-3200AF
	HDW340FCDP	Fixed type door frame HDW3-4000AF
	HDW340DCDP	Drawer type door frame HDW3-4000AF
	HDW363DCDP	Drawer type door frame HDW3-6300AF
	Phase Partition 	HDW316FD
HDW316DD		Drawer type phase partition 3PHDW3-1600AF
HDW320FD		Fixed type phase partition 3PHDW3-2000AF
HDW320DD		Drawer type phase partition 3PHDW3-2000AF
HDW332FD		Fixed type phase partition 3PHDW3-3200AF
HDW332DD		Drawer type phase partition 3PHDW3-3200AF
HDW340FD		Fixed type phase partition 3PHDW3-4000AF (4000A None)
HDW340DD		Drawer type phase partition 3PHDW3-4000AF (4000A None)
HDW3164FD		Fixed type phase partition 4PHDW3-1600AF
HDW3164DD		Drawer type phase partition 4PHDW3-1600AF
HDW3204FD		Fixed type phase partition 4PHDW3-2000AF
HDW3204DD		Drawer type phase partition 4PHDW3-2000AF
HDW3324FD		Fixed type phase partition 4PHDW3-3200AF
HDW3324DD		Drawer type phase partition 4PHDW3-3200AF
HDW3404FD		Fixed type phase partition 4PHDW3-4000AF (4000A None)
HDW3404DD		Drawer type phase partition 4PHDW3-4000AF (4000A None)
<b>Intelligent Controller Accessories</b>		
N Phase Mutual Inductor 	HDW31604NCT	N phase External mutual inductor HDW3-1600AF/400A
	HDW316061NCT	N phase External mutual inductor HDW3-1600AF/630-1600A
	HDW3200608NCT	N phase External mutual inductor HDW3-2000AF/630-800A
	HDW3201020NCT	N phase External mutual inductor HDW3-2000AF/1000-2000A
	HDW332NCT	N phase External mutual inductor HDW3-3200AF/2000-3200A
	HDW340NCT	N phase External mutual inductor HDW3-4000AF/1600-4000A Circle
	HDW363NCT	N phase External mutual inductor HDW3-6300AF
Ground Mutual Inductor 	HDW3ZT100-400	Ground mutual inductor HDW3-400A (is only applicable to type H Controller)
	HDW3ZT100-630	Ground mutual inductor HDW3-630A (is only applicable to type H Controller)
	HDW3ZT100-800	Ground mutual inductor HDW3-800A (is only applicable to type H Controller)
	HDW3ZT100-1000	Ground mutual inductor HDW3-1000A (is only applicable to type H Controller)
	HDW3ZT100-1250	Ground mutual inductor HDW3-1250A (is only applicable to type H Controller)
	HDW3ZT100-1600	Ground mutual inductor HDW3-1600A (is only applicable to type H Controller)
	HDW3ZT100-2000	Ground mutual inductor HDW3-2000A (is only applicable to type H Controller)
	HDW3ZT100-2500	Ground mutual inductor HDW3-2500A (is only applicable to type H Controller)
	HDW3ZT100-3200	Ground mutual inductor HDW3-3200A (is only applicable to type H Controller)
	HDW3ZT100-4000	Ground mutual inductor HDW3-4000A (is only applicable to type H Controller)
HDW3ZT100-6300	Ground mutual inductor HDW3-6300A (is only applicable to type H Controller)	

## Accessory and Overview



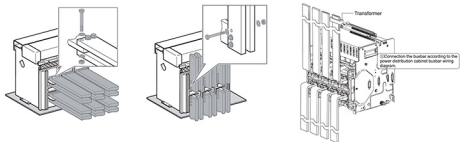
Intelligent controller accessories	Accessory coding	Accessory name
Leakage current mutual inductor 	HDW3ZCT1	Leakage current mutual inductor HDW3 (is only applicable to H controller)
Signal conversion module 	HDW3TR	Signal conversion module (H communication, regional interlocking, 4 remote controllers)
Power module 	HDW3DP	DC power module (input DC220/110V, output DC24V)
	HDW32AP	Power module HDW3-AC230V
	HDW34AP	Power module HDW3-AC400V
<b>Mechanical interlocking</b>		
Cable interlocking	HDW316FL2	Fixed type cable interlocking (2 sets) HDW3-1600AF
	HDW320FL2	Fixed type cable interlocking (2 sets) HDW3-2000AF
	HDW332FL2	Fixed type cable interlocking (2 sets) HDW3-3200AF
	HDW340FL2	Fixed type cable interlocking (2 sets) HDW3-4000AF
	HDW363FL2	Fixed type cable interlocking (2 sets) HDW3-6300AF
	HDW320FL3	Fixed type cable interlocking (3 sets) HDW3-2000AF
	HDW332FL3	Fixed type cable interlocking (3 sets) HDW3-3200AF
	HDW340FL3	Fixed type cable interlocking (3 sets) HDW3-4000AF
	HDW363FL3	Fixed type cable interlocking (3 sets) HDW3-6300AF
	HDW316DL2	Drawer type cable interlocking (2 sets) HDW3-1600AF
	HDW320DL2	Drawer type cable interlocking (2 sets) HDW3-2000AF
	HDW332DL2	Drawer type cable interlocking (2 sets) HDW3-3200AF
	HDW340DL2	Drawer type cable interlocking (2 sets) HDW3-4000AF
	HDW363DL2	Drawer type cable interlocking (2 sets) HDW3-6300AF
	HDW320DL3	Drawer type cable interlocking (3 sets) HDW3-2000AF
	HDW332DL3	Drawer type cable interlocking (3 sets) HDW3-3200AF
	HDW340DL3	Drawer type cable interlocking (3 sets) HDW3-4000AF
	HDW363DL3	Drawer type cable interlocking (3 sets) HDW3-6300AF
Rod interlocking	HDW316FG2	Fixed type rod interlocking (2 sets) HDW3-1600AF
	HDW320FG2	Fixed type rod interlocking (2 sets) HDW3-2000AF
	HDW332FG2	Fixed type rod interlocking (2 sets) HDW3-3200AF
	HDW340FG2	Fixed type rod interlocking (2 sets) HDW3-4000AF
	HDW363FG2	Fixed type rod interlocking (2 sets) HDW3-6300AF
	HDW316DG2	Drawer type rod interlocking (2 sets) HDW3-1600AF
	HDW320DG2	Drawer type rod interlocking (2 sets) HDW3-2000AF
	HDW332DG2	Drawer type rod interlocking (2 sets) HDW3-3200AF
HDW340DG2	Drawer type rod interlocking (2 sets) HDW3-4000AF	
HDW363DG2	Drawer type rod interlocking (2 sets) HDW3-6300AF	
<b>Connection accessory</b>		
HDW3V3	Vertical L adaptor 3PW3-2000 (2000A Below)	
HDW3V4	Vertical L adaptor 4PW3-2000 (2000A Below)	
HDW3S3	Expanding terminal 3P (1600N)	
HDW3S4	Expanding terminal 4P (1600N)	

## Installation Dimension



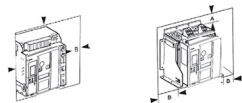
### Busbar connection

Draw-out and fixed type



Remark: vertical connection only for 1600AF/4000AF

### Safety clearances



Safety clearances(mm)	Fixed type		Draw-out type	
	A	B	A	B
Non-conductor	0	10	0	0
Metals	0	10	0	0
Energized conductor	30	60	100	60

### Rear connection

Horizontal

Vertical



Note:

- All shell frames are provided with horizontal connections, only 1600&4000 providing vertical connections
- 1600 horizontal and vertical connections can be made by rotating the bus
- The vertical connection of 2000 shell frame can be realized by optional vertical L adapter, which is only limited below 2000A.

## Installation Dimension



### Recommended dimension of busbar

Busbar type table in different temperatures

Busbar max temperature

Material of busbar is copper

Frame (AF)	Rated Current (A)	ambient temperature +40°C				ambient temperature +50°C				ambient temperature +60°C			
		5mm Busbar		10mm Busbar		5mm Busbar		10mm Busbar		5mm Busbar		10mm Busbar	
		Quantity	dimension	Quantity	dimension	Quantity	dimension	Quantity	dimension	Quantity	dimension	Quantity	dimension
1600	400	2	30*5	1	30*10	2	30*5	1	30*10	2	30*5	1	30*10
	630	2	40*5	1	40*10	2	40*5	1	40*10	2	40*5	1	40*10
	800	2	50*5	1	50*10	2	50*5	1	50*10	2	50*5	1	50*10
	1000	3	50*5	2	40*10	3	50*5	2	40*10	3	50*5	2	40*10
	1250	4	40*5	2	40*10	4	50*5	2	50*10	4	50*5	2	50*10
	1600	4	50*5	2	50*10	4	50*5	2	50*10	4	50*5	2	50*10
2000	630	2	40*5	1	40*10	2	50*5	1	50*10	2	60*5	1	60*5
	800	2	50*5	1	50*10	2	50*5	1	50*10	2	60*5	1	60*5
	1000	3	50*5	2	40*10	3	50*5	2	40*10	3	60*5	2	50*5
	1250	3	60*5	2	50*10	3	60*5	2	50*10	3	60*5	2	50*5
	1600	4	60*5	2	60*10	4	60*5	2	60*10	4	60*5	2	60*5
	2000	6	60*5	3	60*10	6	60*5	3	60*10	6	60*5	3	60*5
3200	2000	4	100*5	2	100*10	4	100*5	2	100*10	4	100*5	2	100*10
	2500	4	100*5	2	100*10	4	100*5	2	100*10	4	100*5	2	100*10
	3200	8	100*5	4	100*10	8	100*5	4	100*10	8	100*5	4	100*10
	1600	2	100*5	1	100*10	2	100*5	1	100*10	2	100*5	1	100*10
	2000	4	100*5	2	100*10	4	100*5	2	100*10	4	100*5	2	100*10
	2500	4	100*5	2	100*10	4	100*5	2	100*10	4	100*5	2	100*10
4000	3200	8	100*5	4	100*10	8	100*5	4	100*10	8	100*5	4	100*10
	4000		5	100*10		5	100*10		5	100*10		6	100*10
	4000		5	100*10		5	100*10		5	100*10		6	100*10
6300	5000		7	100*10		7	100*10		7	100*10		8	100*10
	6300		8	100*10		8	100*10		8	100*10			

### Screw table

	1600M&S	2000M&S	3200M&S	4000M&S	6300M&S
Screw dimension	M10	M12	M12	M10	M12
Torque	50N·m	95N·m	95N·m	50N·m	95N·m

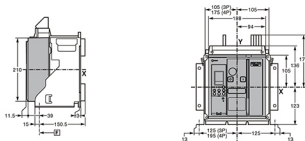
### Holes dimension on busbar and installation torque

	1600M&S	2000M&S	3200M&S	4000M&S	6300M&S
Hole dimension	Ø11	Ø13	Ø13	Ø11	Ø13
Torque	50N·m	95N·m	95N·m	50N·m	95N·m

## Installation Dimension

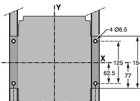
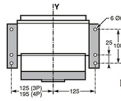
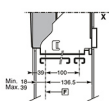


### Dimensions HDW3-1600 Fixed type 3P&4P



Horizontal Fixed (On a substrate or track)

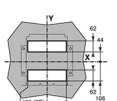
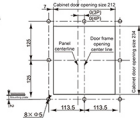
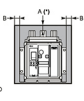
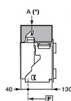
Vertical Fixed diagram (On the back or rack)



### Safety clearance

### Door open dimension

### Back panel open dimension



F : Datum point

	Insulation parts	Metal parts	Energized parts
A	0	0	100
B	0	0	60

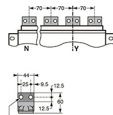
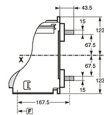
Note: the X and Y axes of the 3-pole breaker are symmetrical with the breaker front face mask.  
 (\*) For the safety distance, the space required for removing the arcing mask shall be considered as 50mm, and the safety distance for removing the terminal block shall be 20mm.

## Installation Dimension

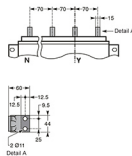
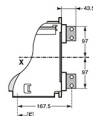


### Connection HDW3-1600M&S fixed type

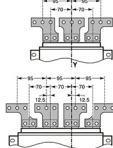
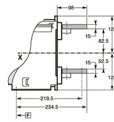
#### Horizontal back connection



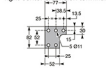
#### Vertical back connection



#### Back connection with expanding terminal



#### 4-pole Left-center or right-center extension terminal



#### 3-pole intermediate extension terminal



#### 4-pole Left or right extension terminal



#### 3-pole Left or right extension terminal



Note: The X and Y axes of the 3-pole breaker are symmetrical with the breaker nomenclature front face mask.

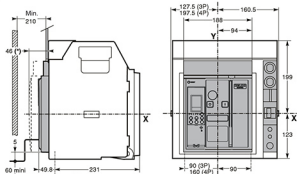
F : Datum point

## Installation Dimension

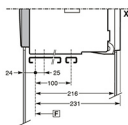


### Dimensions HDW3-1600 draw-out type

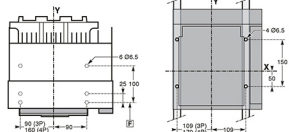
3P&4P



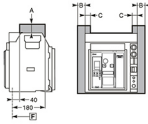
#### Horizontal Fixed (On a substrate or track)



#### Vertical fixation diagram (On the back or rack)



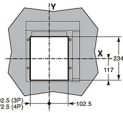
#### Safety clearance



#### Door open dimension



#### Back panel open dimension



	Insulation parts	Metal parts	Emerged parts
A	0	0	30
B	10	10	60
C	0	0	30

Note: The X and Y axes of the 3-pole breaker are symmetrical with the breaker nomenclon front face mask.

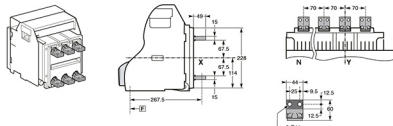
F : Datum point

## Installation Dimension

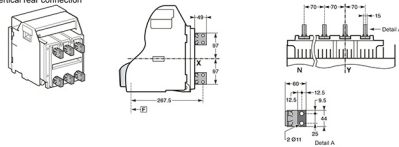


### Connection HDW3-1600M&S drawout type

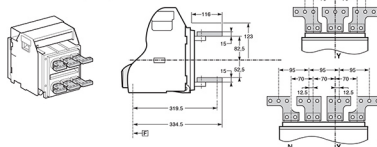
#### Horizontal rear connection



#### Vertical rear connection



#### Rear connection with expanding terminal



#### 4-pole Left-center or right-center extension terminal



#### 3-pole Intermediate extension terminal



#### 4-pole Left or right extension terminal



#### 3-pole Left or right extension terminal



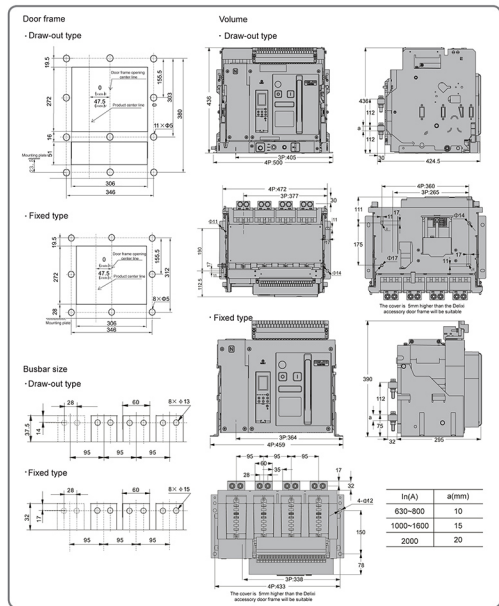
Note: The X and Y axes of the 3-pole breaker are symmetrical with the breaker nomenclon front face mask.

F : Datum point

## Installation Dimension



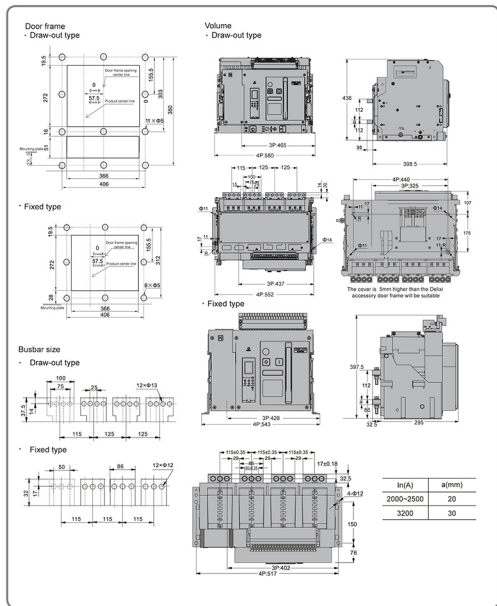
### Dimensions of HDW3-2000 3P&4P



## Installation Dimension



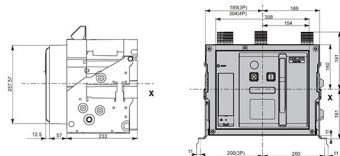
### Dimensions of HDW3-3200 3P&4P



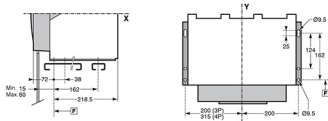
## Installation Dimension



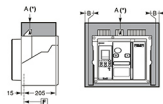
### Dimensions of HDW3-4000 fixed type 3P&4P



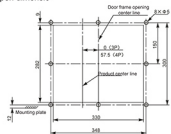
#### Horizontal Fixed (On a substrate or track)



#### Safety clearance



#### Door open dimension



	Insulated part	Metal part	Live part
A	0	0	100
B	0	0	60

Datum point

Note: The X and Y axes of the 3-pole breaker are symmetrical with the breaker nomenclature front face mask.

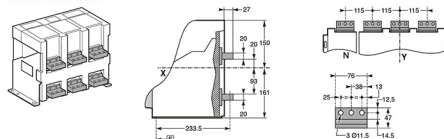
\* The safe distance should consider the space needed to remove the arcing shield 110mm, the safe distance when removing the terminal block is 20mm

## Installation Dimension

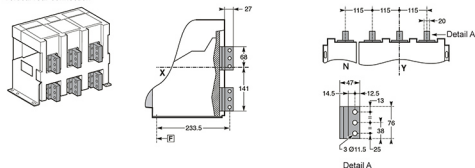


### Connection HDW3-4000 fixed type 3P&4P 1600A-3200A

#### Horizontal rear connection



#### Vertical rear connection

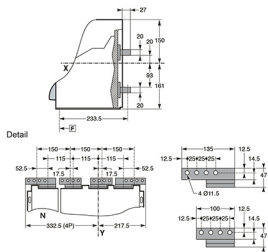
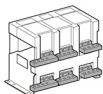


## Installation Dimension

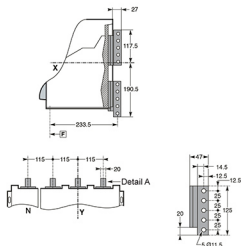
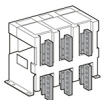


### Connections HDW3-4000 fixed type 3P&4P 4000A

Horizontal rear connection



Vertical rear connection

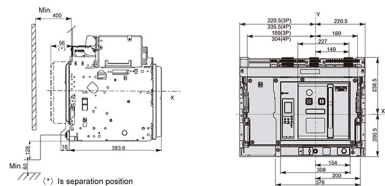


☒ Datum point

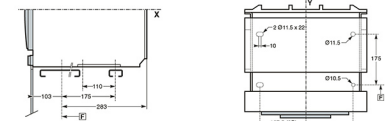
## Installation Dimension



### Dimensions of HDW3-4000 draw-out type 3P&4P

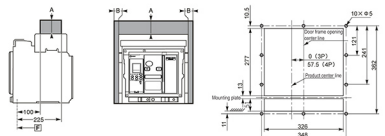


Horizontal Fixed (On a substrate or track)



Safety clearance

Door open dimension



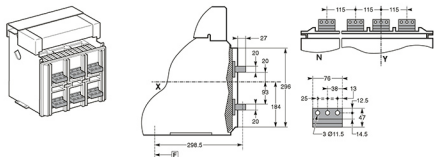
	Insulated part	Metal part	Live part
A	0	0	0
B	0	0	60

☒ Datum point

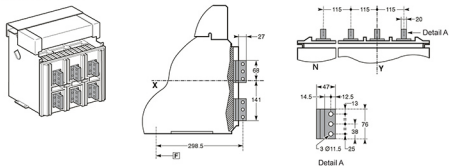
\* Note: The X and Y axes of the 3-pole breaker are symmetrical with the breaker nomenclature front face mask. The safe distance should consider the space needed to remove the arcing shield

## Connections HDW3-4000 draw-out type 3P&4P 1600A-3200A

Horizontal rear connection

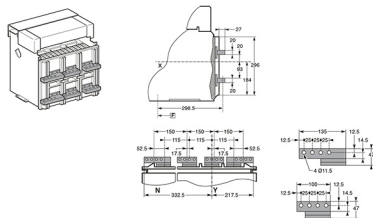


Vertical rear connection

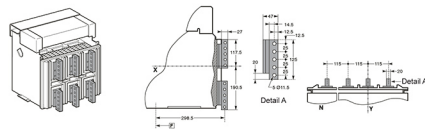


## Connections HDW3-4000 draw-out type 3P&4P 4000A

Horizontal rear connection



Vertical rear connection



**[Z]**: Datum point

It is suggested to connect the circuit breaker with guide line

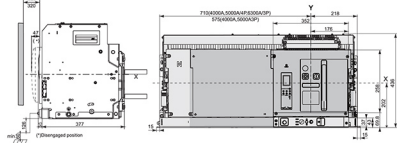
Rated current A	Specification of external copper plating	Pole number	Sectional area mm <sup>2</sup>
400	None	1	240
630	40×5	2	400
800	50×5	2	500
1000	60×5	2	600
1250	80×5	2	800
1600	100×5	2	1000
2000	100×5	3	1500
2500	100×5	4	2000
3200	120×10	3	3600
4000	100×10	5	5000

Detailed information please refer to the specification

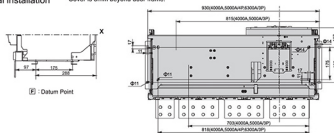


## Connections HDW3-6300M&S

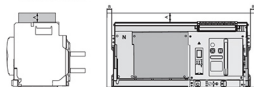
### 6300M&S Draw-out type 3P&4P Dimension Datum Point



### Horizontal installation \*Cover is 5mm beyond door frame.

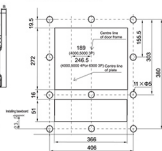


### Safety clearance



Safety clearance (mm)	Draw-out type	
	A	B
Non-conductor	0	0
Metals	0	0
Energized conductor	100	60

### Holes size on door

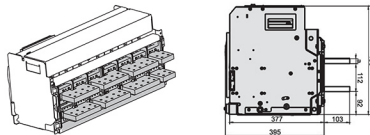


## Connections HDW3-6300M&S

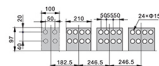
### 6300M&S Draw-out type connection Datum Point

#### 4000A-6300A

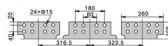
#### Horizontal connection



#### In=4000A/5000A



#### In=6300A

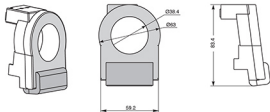


In (A)	a (mm)
4000	20
5000	30
6300	30

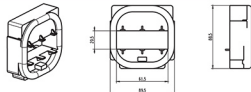
Dimensions of external transformer

N-phase extend current transformer

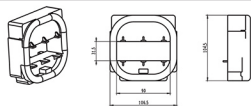
1) 1600M&S



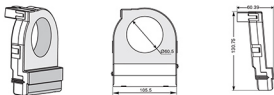
2) 2000M&S



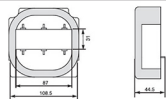
3) 3200M&S



4) 4000M&S

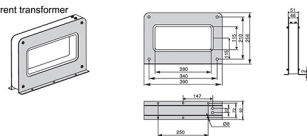


5) 6300M&S

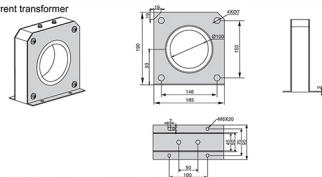


Dimensions of external transformer

Earth-leakage current transformer

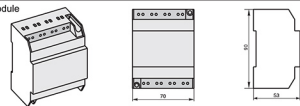


Ground return current transformer

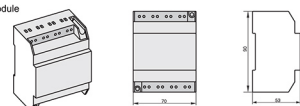


Remark Dimension of 4000A,5000A,6000A is the same with earth-leakage current transformer

Power supply module



Signal convert module

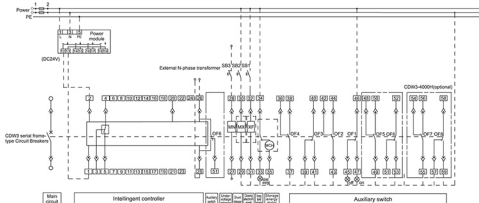


# Electrical Schematic Diagram



## ITR326, ITR326A Electrical schematic diagram

Wiring diagrams of ITR326, ITR326A intelligent controllers



### Controller wiring annotations

- UM: Voltage test signal input  
 21#(UN), 22#(UA), 23#(UB), 24#(UC) represent the input ends of N, A, B, C phase voltage respectively.  
 POW: External power input  
 1#(V1+), 2#(V2-): Auxiliary power input/output terminals, 1#(V1) is the positive terminal for DC  
 SWT: Fault trip contact output  
 3#(S2), 4#(S1), 5#(S3): Fault trip contact output (4#(S1) is the common terminal), contact capacity: AC400V, 5A  
 CT: External transformer, including external N-phase transformer or ZT100 or ZCT1 (one out of three), where  
 25# - 26#, apply to external N-phase transformer input;  
 25# - 26#, apply to external ground transformer ZCT100 input;  
 25# - 26#, apply to external leakage transformer ZCT1 input;  
 Note 1: MN under-voltage release 27#, 28# wired on the main circuit line  
 Note 2: Different powers can be applied respectively if the control power voltages for MN, MX, XF, MCH are different from each other. HDW3-1600 auxiliary switch offer 4#4b only; HDW3-2000&HDW3-3200 auxiliary switches can offer 4#4b and 6#6b; HDW3-4000 auxiliary switch can offer 4#4b, 6#6b and 8#8b, where 4#4b is a standard configuration, others need to be purchased separately (the dashed parts in the diagram are connected by the users);  
 Note 3: Terminal 35# not only can be connected directly to the power (pre-store energy automatically), but also can be connected with the NO button in series then connected to the power (hand control energy pre-storage)  
 Note 4: The controller should be connected to the power module, adopt IPUA331 power module when the power voltage is AC220V/AC230V; adopt IPUA332 power module when the power voltage is AC380V/AC400V; adopt IPUA332D when the power voltage is DC110V and DC220V;  
 Note 5: The auxiliary switch is 4#4b when HDW3-2000 and HDW3-3000 are circuit 47;  
 Note 6: The auxiliary switch is 6#6b (5#6b) when HDW3-2000 and HDW3-3200 are circuit 51; 25#, 26#, 51# can not take the external transformer after forming a NO NC contact.

- Elements:
- MN Under-voltage release
  - MX Shunt release
  - XF Closed electromagnet
  - OF1-OF8 auxiliary switch
  - SB1 closing button
  - SB2 opening button
  - SB3 emergent disconnect button

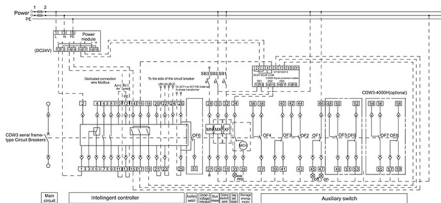
Element No.
27-02
28-01
28-02
30-01
30-02
30-03
30-04
30-05
30-06

# Electrical Schematic Diagram



## ITR326H Electrical schematic diagram

Wiring diagrams of ITR326H intelligent controllers



### Controller wiring annotations:

- UM: Voltage test signal input  
 21#(UN), 22#(UA), 23#(UB), 24#(UC) represent the input ends of N, A, B, C phase voltage respectively.  
 ZSI: Zone selective interlock  
 13#(Z+), 14#(Z-) are the zone selective interlock input DC24V  
 16#(Z1+), 15#(Z1-), 17#(Z2+), 19#(Z2-) are 300 output, adopt the optocoupler output, where 16#(Z1) is the common terminal  
 POW: External power input  
 1#(V1+), 2#(V2-): Auxiliary power input/output terminals, 1#(V1+) is the positive pole for DC.  
 SWT: Fault trip contact output  
 3#(S2), 4#(S1), 5#(S3): Fault trip contact output (4#(S1) is the common terminal contact capacity: AC400V, 5A)  
 COM, Communication output  
 10#, 11#: Communication outgoing lines of RS485(A45+), RS485(B45-) respectively; 12#: PE line, shield ground wire  
 CT: External transformer, including an external N-phase transformer or ZT100 or ZCT1 (one out of three), where  
 25# - 26#, Apply to external N-phase transformer input;  
 25# - 26#, Apply to external ground transformer ZT100 input;  
 25# - 26#, Apply to external leakage transformer ZCT1 input.  
 Note 1: MN under-voltage release 27#, 28#, wired on the main circuit line  
 Note 2: Different powers can be applied respectively if the control power voltages for MN, MX, XF, MCH are different from each other. HDW3-1600 auxiliary switch offer 4#4b only; HDW3-2000 and HDW3-3200 auxiliary switches can offer 4#4b and 6#6b; HDW3-4000 auxiliary switch can offer 4#4b, 6#6b and 8#8b, where 4#4b is a standard configuration, others need to be purchased separately (the dashed parts in the diagram are connected by the users);  
 Note 3: Terminal 35# not only can be connected directly to the power (pre-store energy automatically), but also can be connected with the NO button in series then connected to the power (hand control energy pre-storage)  
 Note 4: The controller should be connected to the power module, adopt IPUA331 power module when the power voltage is AC220V/AC230V; adopt IPUA332 power module when the power voltage is AC380V/AC400V; adopt IPUA332D when the power voltage is DC110V and DC220V;  
 Note 5: The auxiliary switch is 4#4b when HDW3-2000 and HDW3-3000 are circuit 47; 25#, 26# are the external transformer input terminals, used for ground fault protection (3P+N);  
 Note 6: The auxiliary switch is 6#6b (5#6b) when HDW3-2000 and HDW3-3200 are circuit 51; 25#, 26#, 51# can not take the external transformer after forming a NO NC contact.  
 Note 7: When the remote control is working, the signal conversion modules are needed, signal conversion module contact capacity is AC240V, 10A  
 Note 8: The communication protocol is Modbus, CAN485 or CAN1455 is needed to be ordered when Profibus or Devicenet protocol is used, the module uses DC24V electricity supply, the input end is connected to the secondary circuit 10#(455+), terminal 11#(455-), the output end is connected to the corresponding protocol bus.

### Elements:

- MN Under-voltage release
- XF Closed electromagnet
- OF1-OF8 Auxiliary switch
- SB1 Ground transformer
- SB2 Closing button
- SB3 Opening button
- SB2 Emergent disconnect button
- MX Shunt release
- MCH Motor
- ZCT1 Leakage transformer

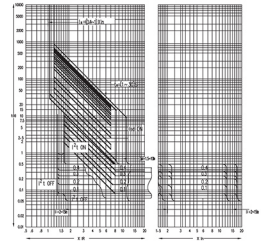
Element No.
27-02
28-01
28-02
30-01
30-02
30-03
30-04
30-05
30-06

# Tripping Curve

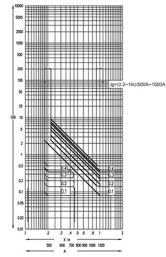


## Tripping Curve

3 phases protection



Ground protection



## HDW3 Air Circuit Breaker

Reliable made affordable



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