General Catalogue

Reliable made affordable

Himel

Founded in spain in 1958

درباره هیمل

Himel تولیدکننده بین‌المللی محصولات توزیع انرژی و اتوماسیون است که با بهره گیری از آخرین فناوری طراحی و تولید جهانی به یکی از موفق‌ترین ارائه‌دهندگان راهکارهای توزیع برق و اتوماسیون صنعتی بدل گشته است.

Himel در سال ۱۹۵۸ توسط یک کارآفرین اسپانیایی تاسیس و به سرعت به یکی از پیشگامان صادرات تابلوهای برق در اروپا تبدیل شد. با مطرح‌شدن نام تجاری Himel در سطح جهانی، این شرکت به مجموعه اشنایدر الکتریک پیوسته و اکنون با هدف تولید طیف گسترده‌ای از محصولات قابل اعتماد در صنعت توزیع، اتوماسیون صنعتی و برق خانگی در بیش از ۵۰ کشور دنیا حضور موفق دارد.

آماد برق سپهر به عنوان **نماینده رسمی و انحصاری Himel در ایران**، کلیه‌ی محصولات این شرکت را از طریق نمایندگی‌های فعال خود در سراسر کشور با هولوگرام قابل رهگیری و پوشش گارانتی تعویض و خدمات پس از فروش عرضه می‌نماید.

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FINAL DISTRIBUTION

تجهیزات توزیع نهایی

FINAL DISTRIBUTION

کلید مینیاتوری MCB

Standard: IEC/EN 60898-1

Range Presentation

HDB3w series is Himel 3 series range of Miniature Circuit Breakers designed to protect the power system from short circuit and overload faults.

3 series MCB is mainly used in commercial and residential buildings, including 18mm AC MCB, 27mm AC MCB, phase neutral MCB, and DC MCB.

Features

- Full product range: AC and DC MCB, from 1 to 125A
- MCB without or with indicator window (H series) to display tripping status.
- DPN: Phase neutral MCB in single pole
- Smart design: Complete range of accessories with convenient mounting hole
- HDB3w, HDB3wH: SNI (Indonesia)
- HDB3w, HDB3wH: PS MARK (Philippines)
- HDB3wH: SIRIM (Malaysia)
- HDB3wH, HDB3w-125: TSE (Turkey)

Selection Code

Range name	Breaking capacity	Number of poles	Tripping type	Rated current
HDB3w	**N**	**3**	**C**	**10**
HDB3w: MCB without indicator **HDB3wH:** MCB with indicator	**N:** 6kA	**1:** 1P **2:** 2P **3:** 3P **4:** 4P **5:** 1P+N **6:** 3P+N	**B:** Type B **C:** Type C **D:** Type D	**1:** 1A **2:** 2A **3:** 3A **4:** 4A **6:** 6A **10:** 10A **16:** 16A **20:** 20A **25:** 25A **32:** 32A **40:** 40A **50:** 50A **63:** 63A
HDB3w125: 27mm MCB with indicator, up to 125A	**N:** 6kA **H:** 10KA	**1:** 1P **2:** 2P **3:** 3P **4:** 4P	**B:** Type B **C:** Type C **D:** Type D	**63:** 63A **80:** 80A **100:** 100A **125:** 125A
HDB3wP: Phase Neutral MCB without indicator **HDB3wHP:** Phase Neutral MCB with indicator	**N:** 4.5kA (HDB3wP) **Default:** 4.5kA (HDB3wHP)	**Default:** all are 1P+N in single pole	**C:** Type C **D:** Type D	**6:** 6A **10:** 10A **20:** 20A **25:** 25A **32:** 32A **40:** 40A
HDB3wZ: DC MCB (Direct Current) without indicator	**Default:** 6kA (1P: 250V, 2/3P: 500V)	**1:** 1P **2:** 2P **3:** 3P	**B:** Type B **C:** Type C	**1:** 1A (Type C) **2:** 2A (Type C) **3:** 3A (Type C) **4:** 4A (Type C) **5:** 5A (Type C) **6:** 6A **8:** 8A **10:** 10A **13:** 13A **16:** 16A **20:** 20A **25:** 25A **32:** 32A **40:** 40A **50:** 50A **63:** 63A

Online Content

HDB3w | HDB3wH | HDB3w-125 | HDB3wP | HDB3wHP | HDB3wZ

کلید مینیاتوری MCB

Standard: IEC/EN 60898-1

Technical Parameters						
MCB	**HDB3w**	**HDB3wH**	**HDB3w-125**	**HDB3wP**	**HDB3wHP**	**HDB3wZ**
Description	18mm Miniature Circuit Breaker without indicator	18mm Miniature Circuit Breaker with indicator	27mm Miniature Circuit Breaker with indicator	18mm Phase Neutral MCB without indicator	18mm Phase Neutral MCB with indicator	18mm DC MCB without indicator
Indication: red and green tripping indication window	No	Yes	Yes	No	Yes	No
Electrical characteristics						
Standard	IEC 60898-1		IEC 60947-2	IEC 60898-1		IEC60947-2
Certificate	CE, TUV, CB, ROHS		CE, CB, TUV, ROHS	CE, CB, TUV, ROHS		CE, CB, ROHS
Rated insulation voltage Ui	500V		500V	500V		500V
Frequency	50/60Hz		50/60Hz	50/60Hz		/
Rated operational voltage Ue	240 (1P, 1P+N) 415V (2P, 3P, 4P, 3P+N)		230V (1P) 400V (2P, 3P, 4P)	240V		DC 250V (1P) DC 500V (2P/3P)
Rated short-circuit capacity Icn	6kA		6kA 10kA	4.5kA		6kA
Rated impulse withstand voltage Uimp	4kV		4kV	4kV		4kV
Pollution class	2		2	2		2
Isolation function	Yes		Yes	Yes		Yes
Tripping characteristics	B, C, D Type		B, C, D Type	C, D Type		B, C Type
Mechanical characteristics						
Mechanical endurance	25000		8500 (In ⩽ 100A) 7000 (In > 100A)	10000		20000
Electrical endurance	6000		1500 (In ⩽ 100A) 1000 (In > 100A)	4000		3000
Protection class	IP40(Installed in DB box) IP20(Installed directly)		IP40 (Installed in DB box) IP20 (Installed directly)	IP40 (Installed in DB box) IP20 (Installed directly)		IP40 (Installed in DB box) IP20 (Installed directly)
Mechanical shock resistance	30g, 3 shocks, lasting 11ms		30g, 3 shocks, lasting 11ms	30g, 3 shocks, lasting 11ms		30g, 3 shocks, lasting 11ms
Rated ambient temperature	30°C		30°C	30°C		30°C
Operating ambient temperature	-20°C ~+60°C		-20°C ~+60°C	-20°C ~+60°C		-20°C ~+60°C
Storage temperature	-40°C ~+70°C		-40°C ~+70°C	-40°C ~+70°C		-40°C ~+70°C
Installation features						
Maximum wiring capacity	25mm²		50mm²	16mm²		25mm²
Maximum torque	2.5N.m		3.5N.m	1.5N.m		2.5N.m
Tool	Cross head screwdriver or flat head screwdriver		Cross head screwdriver or flat head screwdriver	Cross head screwdriver or flat head screwdriver		Cross head screwdriver or flat head screwdriver
Installation	35mm DIN rail		35mm DIN rail	35mm DIN rail		35mm DIN rail
Line incoming type	Top or bottom		Top or bottom	Top or bottom		Top or bottom

FINAL DISTRIBUTION

RCBO کلید نشتی جریان ترکیبی

Standard: IEC/EN 61009-1

Range Presentation

HDB3wLE series is the Himel 3 series range of Residual Current operated circuit breakers (RCBO) designed to protect people and power system from short circuit, overload faults and earth leakage.

3 series RCBO is mainly used in commercial and residential buildings including standard RCBO and phase neutral RCBO.

Features

- Full product range from 6A to 125A
- 5 residual current: 30mA , 50mA , 75mA , 100mA , 300mA
- Multi-Selection: MCB with indicator (H series) or without indicator

Selection Code

Range name	Breaking capacity	Number of poles	Tripping type	Rated current	Residual current	Over-voltage protection
HDB3wLE	**N**	**1**	**C**	**6**	**R50**	**G**
HDB3wLE: RCBO without indicator **HDB3wHLE:** RCBO with indicator	**N:** 6kA	**1:** 1P+N **2:** 2P **3:** 3P **4:** 4P **6:** 3P+N	**C:** Type C **D:** Type D	**6:** 6A **10:** 10A **16:** 16A **20:** 20A **25:** 25A **32:** 32A **40:** 40A **50**: 50A **63:** 63A	**Default:** 30mA **R50:** 50mA **R75:** 75mA **R100:** 100mA **R300:** 300mA	**Default:** NO **G:** Over-voltage protection
HDB3WLE125: RCBO with indicator, up to 125A	**Default:** 10kA	**1:** 1P+N **2:** 2P **3:** 3P **4:** 4P **6:** 3P+N	**C:** Type C **D:** Type D	**63:** 63A **80:** 80A **100:** 100A **125:** 125A	**Default:** 30mA **W:** 50mA **Q:** 75mA **Y:** 100mA **T:** 300mA	**Default:** NO **G:** Over-voltage protection
HDB3wPLEY63: Phase netral RCBO without indicator **HDB3wHPLE:** Phase netral RCBO with indicator	**Default:** 4.5kA **A:** 3kA HDB3wHPLE only	**Default:** 1P+N	**C:** Type C **D:** Type D	**6:** 63A **10:** 10A **16:** 16A **20:** 20A **32:** 32A **40:** 40A **50:** 50A (PLEY63 only) **63:** 63A (PLEY63 only)	**Default:** 30mA	**Default:** NO **G:** Over-voltage protection (Only HDB3wHPLE)

Online Content

HDB3wLE | HDB3wHLE | HDB3wLE-125 | HDB3wPLEY63 | HDB3wHPLE

کلید نشتی جریان ترکیبی RCBO

Standard: IEC/EN 61009-1

Technical Parameters					
RCBO	**HDB3wLE**	**HDB3wHLE**	**HDB3wLE-125**	**HDB3wPLEY63**	**HDB3wHPLE**
Indication: red and green tripping indication window	NO	Yes	Yes	NO	Yes
Electrical characteristics					
Standard	IEC 61009-1		IEC 60947-2	IEC 61009-1	IEC 61009-1
Certificate	CE, ROHS (2P, 3P, 4P)		CE, CB, ROHS	CE, CB,TUV, ROHS	CE, CB,TUV, ROHS
Rated insulation voltage Ui	500V		500V	500V	500V
Frequency	50/60Hz		50/60Hz	50/60Hz	50/60Hz
Rated operational voltage Ue	230 (1P+N, 2P) 400V (3P, 4P, 3P+N)		230 (1P+N, 2P) 400V (3P, 4P, 3P+N)	240V	240V
Rated short-circuit capacity Icn	6kA		10kA	4.5kA	3kA 4.5kA
Rated impulse withstand voltage Uimp	4kV		4kV	4kV	4kV
Pollution class	2		2	2	2
Tripping type	Thermal magnetic tripping				
Isolation function	YES		YES	YES	YES
Rated residual operating current In	30, 50, 75, 100, 300mA		30, 50, 75, 100, 300mA	30mA	30mA
Tripping characteristics	C, D Type		C, DType	C, DType	C, DType
Mechanical characteristics					
Mechanical endurance	25000		8500	4000	4000
Electrical endurance	6000		3000	4000	4000
Protection class	IP40 (Installed in DB box) IP20 (Installed directly)		IP40 (Installed in DB box) IP20 (Installed directly)	IP40 (Installed in DB box) IP20 (Installed directly)	IP40 (Installed in DB box) IP20 (Installed directly)
Mechanical shock resistance	30g, 3 shocks, lasting 11ms		30g, 3 shocks, lasting 11ms	30g, 3 shocks, lasting 11ms	30g, 3 shocks, lasting 11ms
Rated ambient temperature	30˚C		30˚C	30˚C	30˚C
Operating ambient temperature	-20˚C ~+60˚C		-20˚C ~+60˚C	-20˚C ~+60˚C	-20˚C ~+60˚C
Storage temperature	-40˚C ~+70˚C		-40˚C ~+70˚C	-40˚C ~+70˚C	-40˚C ~+70˚C
Installation features					
Maximum wiring capacity	Rated current 6~32A: 16mm² Rated current 40~63A: 25mm²		50mm²	16mm²	16mm²
Maximum torque	Rated current 6~32A: 2N.m Rated current 40~63A: 2.5N.m		3.5N.m	1.5N.m	1.5N.m
Tool	Cross head screwdriver or flat head screwdriver		Cross head screwdriver or flat head screwdriver	Cross head screwdriver or flat head screwdriver	Cross head screwdriver or flat head screwdriver
Installation	35mm DIN rail		35mm DIN rail	35mm DIN rail	35mm DIN rail
Line incoming type	Top		Top	Top	Top

FINAL DISTRIBUTION

کلید نشتی جریان RCCB

Standard: IEC/EN 61008-1

Range Presentation

HDB3VR is Himel 3 series range of Residual current circuit breaker(RCCB) designed to protect people and power system form earth leakage.

HDB3VR RCCB can be widely used in commercial and residential building.

Features

- Full range from 10A to 100A
- 4 Residual current sensitivity: 10mA, 30mA, 100mA, and 300mA
- Two types for application: AC type and A type
- HDB3VR: Safety mark (Singapore) TSE (Turkey)
- SNI (Indonesia)

Online Content

HDB3VR

Selection Code

Range name	Number of poles	Rated current	Residual current	Type
HDB3VR	**2**	**10**	**L**	**C**
HDB3VR : Electromagnetic Type RCCB	**2:** 2P **4:** 4P	**10:** 10A **16:** 16A **25:** 25A **40:** 40A **63:** 63A **80:** 80A **100:** 100A	**L:** 10mA **S:** 30mA **Y:** 100mA **T:** 300mA	**C:** AC Type **A:** A Type

Technical Parameters	
RCCB	**HDB3VR**
Electrical characteristics	
Standard	IEC 61008-1
Certificate	CE, TUV, ROHS
Rated insulation voltage Ui	500V
Frequency	50/60Hz
Rated operational voltage Ue	240 (2P) 415V (4P)
Rated short-circuit capacity Icn	6kA
Rated impulse withstand voltage Uimp	4kV
Pollution class	2
Type	A , AC Type
Isolation function	Yes
Rated residual operating current I△n	10, 30, 100, 300mA
Mechanical characteristics	
Endurance	Mechanical endurance: 8500(≤100A) 7000(125A) Electrical endurance: 3000
Protection class	IP40 (Installed in DB box) IP20 (Installed directly)
Mechanical shock resistance	30g, 3 shocks, lasting 11ms
Rated ambient temperature	30℃
Operating ambient temperature	- 20℃ ~ + 60℃
Storage temperature	- 40℃ ~ + 70℃
Installation Features	
Maximum wiring capacity	25mm² (≤63A) 35mm² (> 63A)
Maximum torque	Rated current 6-32A: 2.5N.m Rated current 40-63A: 3N.m
Installation	35mm DIN rail
Line incoming type	Top or bottom

تجهیزات جانبی MCB و RCBO

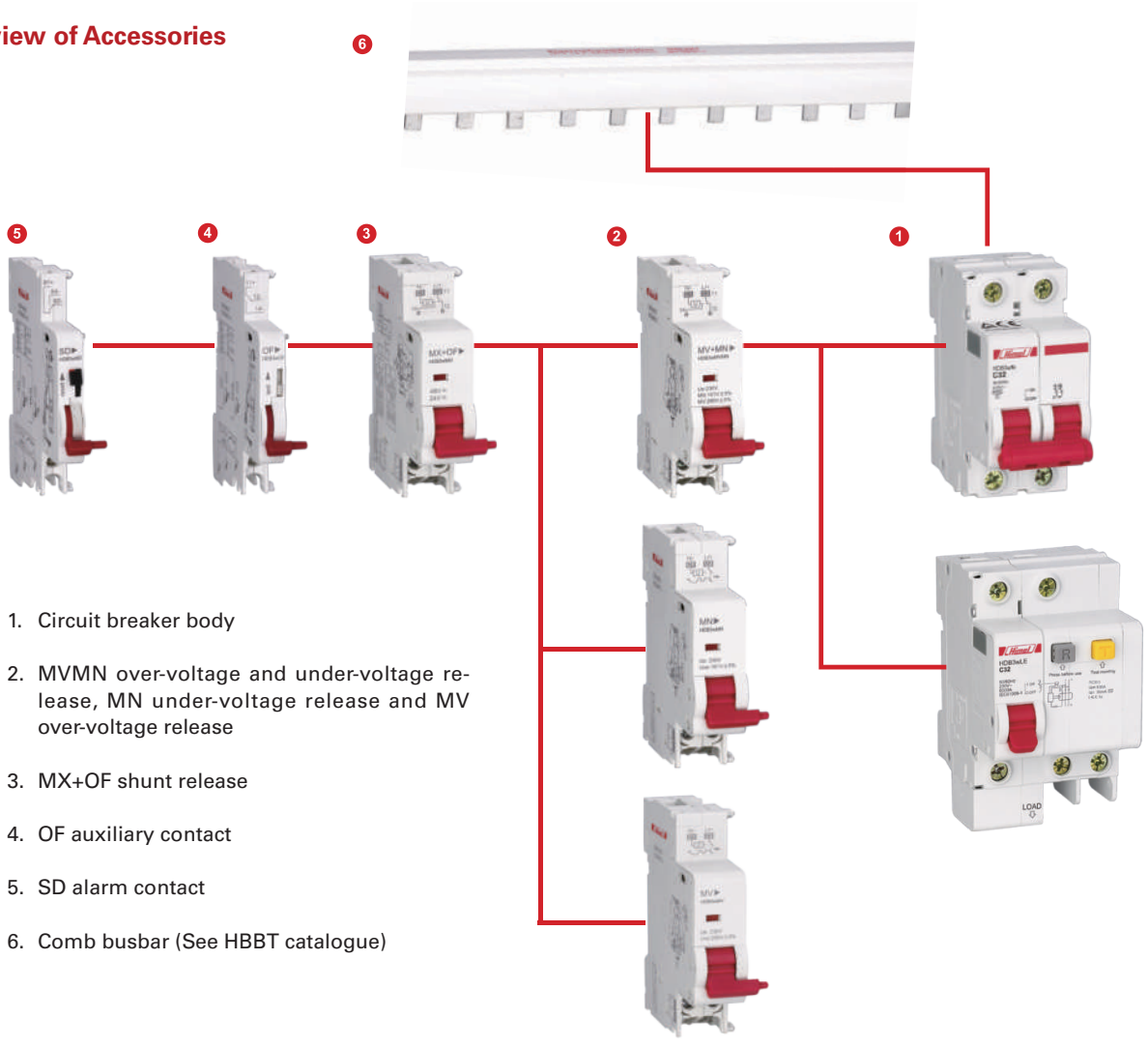
Standard: IEC/EN 60947

Compatible with HDB3w, HDB3wH, HDB3wP, HDB3wHP, HDB3wLE, HDB3wHLE, HDB3wPLEY63, HDB3wHPLE

Technical Parameters						
MCB Accessories	**OF**	**SD**	**MO**	**MV**	**MN**	**MVMN**
Description	Auxiliary contact	Alarm contact	Shunt release	Over-voltage release	Under-voltage release	Over-voltage and under-voltage release
Reference	HDB3wOF	HDB3wSD	HDB3wMO220 (AC 130-415V, DC 110-130V) HDB3wMO24 (AC/DC 24-48V)	HDB3wMV	HDB3wMN	HDB3wMVMN
Rated voltage	AC 240/415 DC 130V,48V,24V	AC 240/415 DC 130V,48V,24V	AC 130V~415V DC 110~130V AC/DC 24V-48V (AC/DC 24~48V)	AC 130V~415V DC 110~130V AC/DC 24V-48V	AC 240V	AC 240V
Wiring capacity	1~2.5mm²	1~2.5mm²	1~2.5mm²	1~2.5mm²	1~2.5mm²	1~2.5mm²
Width	9mm	9mm	18mm	18mm	18mm	18mm
Installation side of MCB	Left	Left	Left	Left	Left	Left
Max installation quantity	6	3	2	2	2	2

Remark: Maximum width of the accessory assembly is 54mm

Overview of Accessories



1. Circuit breaker body
2. MVMN over-voltage and under-voltage release, MN under-voltage release and MV over-voltage release
3. MX+OF shunt release
4. OF auxiliary contact
5. SD alarm contact
6. Comb busbar (See HBBT catalogue)

FINAL DISTRIBUTION

کنتاکتور ماژولار (کنتاکتور بی صدا)

Standard: IEC 61095

Range Presentation

HDCH8S is Himel modular contactor designed to switch on and switch off lighting or other equipments, can be widely used in commercial and residential building.

Features

- Multi-Selection for main contacts
- Full range from 16A to 63A

Online Content

HDCH8S

Selection Code

Range name	Current	Number of poles	Contacts
HDCH8S	**16**: 16A **20**: 20A **25**: 25A **40**: 40A **63**: 63A	**2**: 2P **3**: 3P **4**: 4P	**20**: 2NO (2P) **02**: 2NC (2P) **11**: 1NO 1NC (2P) **30**: 3NO (3P) **03**: 3NC (3P) **21**: 2NO 1NC (3P) **12**: 1NO 2NC (3P) **40**: 4NO (4P) **04**: 4NC (4P) **22**: 2NO 2NC (4P) **31**: 3NO 1NC (4P)

Technical Parameters

Modular Contactors			**HDCH8S**				
Type			16A	20A	25A	40A	63A
Standard			IEC 61095				
Certificate			CE, CB				
Rated current In(A)		AC-7a	16	20	25	40	63
		AC-7b	6	7	8.5	15	20
Conventional free air thermal current Ith (A)			25	25	25	63	63
Rated insulation voltage ui (V)			500				
Rated voltage ue (V)			250 400				
Rated impulse withstand voltage uimp (V)			4kV				
Ambient temperature			-5˚C~ 60˚C				
Making and breaking capacity (AC-7a)			1.05Ie				
Main contacts		2P	1NO1NC, 2NO, 2NC				
		3P	3NO, 3NC, 2NO1NC, 1NO2NC				
		4P	2NO2NC, 3NO1NC, 4NO, 4NC				
Controlled power (kW)	AC-7a	250V	3.5	4.5	5.5	9	14
		400V	6.5	8	10	16	25
	AC-7b	250V	1.4	1.6	2	3.5	4.5
		400V	2.4	2.8	3.4	6	8
Operation frequency		times	≥30000				
Operation frequency /1h (AC-7a)			360				
Coil voltage Us (V)			AC24V AC220-240V 50/60Hz				
IP grade			IP20				
Wiring Ability (mm^2)	Control circuit	Hard wire	1.5-2.5 mm^2			2×1.5mm^2	
		Soft wire	1.5-2.5 mm^2			2×2.5mm^2	
	Main circuit	Hard wire	1.5-6mm^2			6-25mm^2	
		Soft wire	1-4 mm^2			6-16mm^2	

FINAL DISTRIBUTION

صاعقه‌گیر

Standard: IEC 61643-1

Range Presentation

HDY3 is Himel Surge Protective Device designed to protect electric installations and sensitive equipment against indirect surges . It is characterized by its capacity to safely discharge current with 8/20 μs wave form.

HDY3 can be widely used in commercial and residential building.

Features

- Full range from 20kA to 160kA
- Remote signaling

Online Content

HDY3

Selection Code

Range name	Max discharge of current	Number of poles	Max continuous voltage	Accessories
HDY3	**60**	**3**	**275**	**YX**
HDY3	**20:** 20kA **40:** 40kA **65:** 65kA **80:** 80kA **120:** 120kA **160:** 160kA	**1:** 1P **2:** 2P **3:** 3P **4:** 4P **5:** 1P+N **6:** 3P+N	**Default:** AC 385V **275:** AC 275V **440:** AC 440V	**YX:** Remote signaling **Default:** No remote signaling

Technical Parameters

Surge Protective Devices	HDY3-20				HDY3-40				HDY3-65				HDY3-80				HDY3-120				HDY3-160			
Nominal discharge current In(kA)	10				20				30				40				60				80			
Maximum discharge current Imax(kA)	20				40				65				80				120				160			
Maximum allowable backup fuse strength(A gL)	50				100				125				160				200				250			
Maximum continuous operating voltage Uc(V)	275	340	385	440	275	340	385	440	275	340	385	440	275	340	385	440	275	340	385	440	275	340	385	440
Protection level Up(kV)	1.3	1.5	1.6	1.8	1.5	1.7	1.8	2.0	1.6	1.8	2.0	2.2	1.8	2.0	2.2	2.2	2.2	2.4	2.5	3.5	2.3	3.7	3.7	2.8
Leakage current 75%Uc 1mA(μA)	≤20																							
Response time(ns)	≤25																							
Wave form(μs)	8 / 20																							
Product structure	Plug-in																							
Protection rating	II												I											
Poles	1P, 2P, 3P, 4P, 1P+ N, 3P+ N																							
Operating state indicator	Available (green: normal; red: fault)																							
Terminal wiring capacity	Minimum 4mm^2 for copper wire, maximum: 36mm^2 for single strand, 25mm^2 for multi-strand																							
Conformance standard	IEC61643 -1																							
Installation	Installed on standard DIN guide rail(35mm)																							
Maximum ultimate torque	35N.m																							
Optional accessories	Available (YX remote signaling)																							

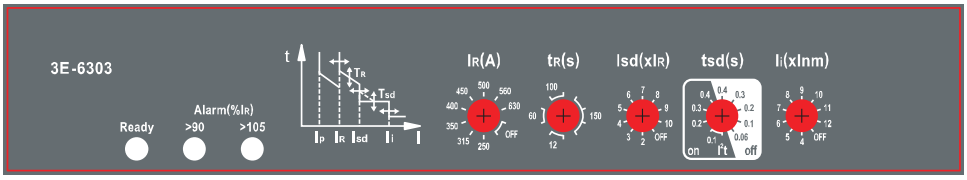
Molded Case Circuit Breaker

کلید کامپکت

کلید کامپکت الکترونیکی

HDM3E-125~800

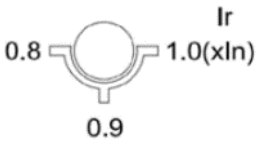
3P controller

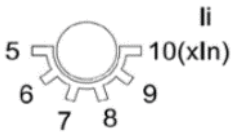


Technical parameters							
Electronic type MCCB		**HDM3E-125**	**HDM3E-250**	**HDM3E-400**	**HDM3E-630**	**HDM3E-800**	**HDM3E-1600**
Rated Voltage Ue(V)		400/415					
Rated insulation Voltage Ui(V)		800	800	800	800	1000	1000
Rated impulse withstand voltage Uimp(kV)		8	8	8	8	12	12
Rated frequency(Hz)		50					
Rated current In(A)		125	250	400	630	800	1000/1250/1600
Number of poles		3/4					
Use Category		A	A	B	B	B	B
Breaking capacity	Breaking Class	M	M	M	M	M	M
	Icu(kA) 400/415V AC	50	50	50	50	50	50
	Ics(kA) 400/415V AC	50	50	50	50	50	50
	Icw(kA) 400/415V AC	2.5(1s)	2.5(1s)	5(1s)	8(1s)	10(1s)	42(1s)
Mechanical life	with maintenance	10000	10000	7000	7000	5000	1500
	without maintenance	7000	7000	4000	4000	2500	500
Electrical life	AC 400/415V	1000	1000	1000	1000	500	500
Power distribution protection	Electrinic trip unit	■	■	■	■	■	■
Isolation function		■	■	■	■	■	■
Certification		TUV, CE	TUV, CE	TUV, CE	TUV, CE	TUV, CE	TUV, CE

کلید کامپکت قابل تنظیم حرارتی مغناطیسی

- جریان نامی از 25 تا 630 آمپر
- قدرت قطع اتصال کوتاه 35 و 50 کیلوآمپر
- دارای گواهی تست از TUV و CB
- قابل تنظیم حرارتی - قابل تنظیم مغناطیسی





Frame size(A)	Rated Current (A) @40℃ In															
	25	32	40	50	63	80	100	125	140	160	200	250	320	400	500	630
160																
250																
400																
630																

Technical Parameters					
Frame	**HDM3S-160**		**HDM3S-250**	**HDM3S-400**	**HDM3S-630**
Standard	IEC 60947-2		IEC 60947-2	IEC 60947-2	IEC 60947-2
[Uimp] rated impulse withstand voltage	8kV		8kV	8kV	8kV
[Ui] rated insulation voltage	AC1000V		AC1000V	AC1000V	AC1000V
Network frequency	50/60 Hz		50/60 Hz	50/60 Hz	50/60 Hz
[Ue] rated operational voltage	400/415VAC		400/415VAC	400/415VAC	400/415VAC
Poles	3/4		3/4	3/4	3/4
Suitability for isolation	Yes		Yes	Yes	Yes
Utilisation category	Category A		Category A	Category A	Category A
[In]Current	25/32/40/50	63/80/100/125/160	140/160/200/250	250/320/400	500/630
Thermal Adjustable	0.8,0.9,1.0	0.8,0.9,1.0	0.8,0.9,1.0	0.8,0.9,1.0	0.8,0.9,1.0
Magnetic Adjustable	/	5,6,7,8,9,10	5,6,7,8,9,10	5,6,7,8,9,10	5,6,7,8,9,10
Breaking Capacity	M		M	M	M
400VAC Icu	35		35	50	50
400VAC Ics	35		35	50	50
Mechanical Life	8500		7000	4000	4000
Electrical Life	1500		1000	1000	1000
Dimension (WxHxD)	90-155-108(3P)/ 120-155-108(4P)		105-165-116(3P)/ 140-165-116(4P)	140-257-155(3P)/ 184-257-155(4P)	140-257-155(3P)/ 184-257-155(4P)
Ambient air temperature for operation	40/50 °C		40/50 °C	40/50 °C	40/50 °C
Certificates	TUV/ CB		TUV/ CB	TUV/ CB	TUV/ CB

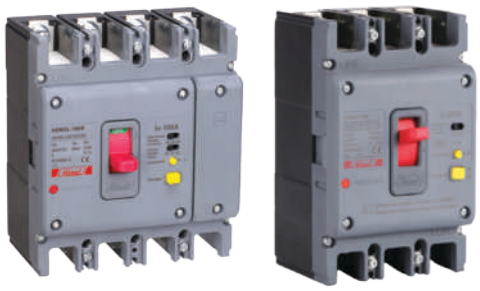
کلید کامپکت غیر قابل تنظیم

- جریان نامی از 16 تا 1600 آمپر
- قدرت قطع اتصال کوتاه 18 تا 85 کیلوآمپر
- دارای گواهی تست از TUV و CB

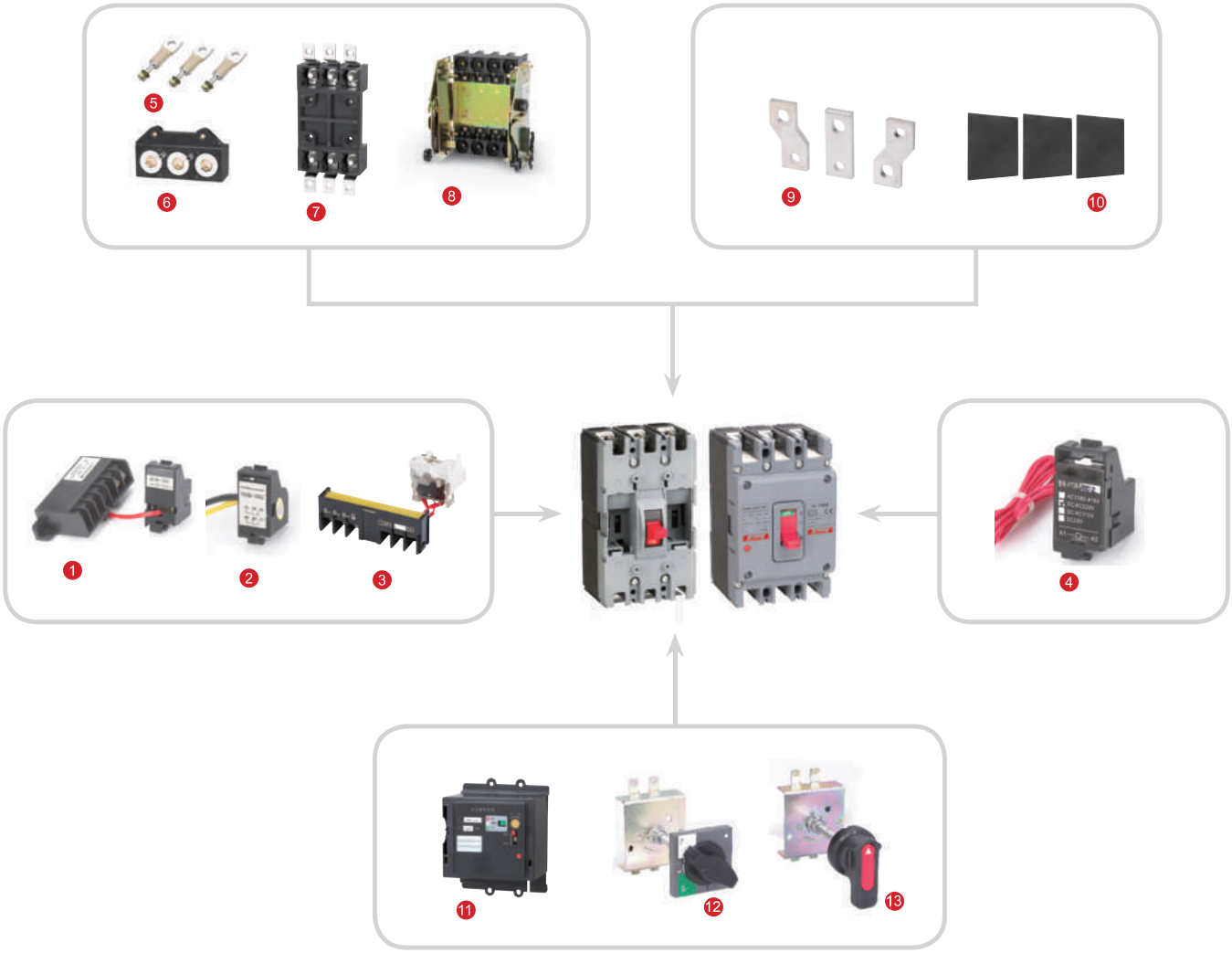
Technical parameters

MCCB		HDM3-63		HDM3-100			HDM3-160			HDM3-250			HDM3-400		HDM3-630		HDM3-800		HDM3-1600
Rated Voltage Ue(V)		400/415																	
Rated insulation Voltage Ui(V)		690		800			800			800			800		800		800		800
Rated impulse withstand voltage Uimp(kV)		6		8			8			8			8		8		8		8
Rated frequency(Hz)		50/60																	
Rated current In(A)		10-63		10-100		40-100	100-160			100-250			200-400		400-630		630-800		800-1600
Number of poles		3/4																	
Use Category		A																	
Breaking capacity	Breaking Class	L	S	L	T	N	L	T	N	L	T	N	T	N	T	N	M	F	N
	Icu(kA) 400/415V AC	18	25	18	30	50	21	36	60	21	36	60	39	70	39	70	40	70	85
	Ics(kA) 400/415V AC	18	18	18	30	30	21	36	36	21	36	36	39	39	39	39	40	40	45
Mechanical life	with maintenance	20000		20000			20000			20000			20000		20000		2500		2500
	without maintenance	10000		10000			10000			10000			5000		5000		1250		1250
Electrical life	AC 400/415V	4000		4000			4000			4000			2000		2000		500		500
Power distribution protection	Thermal magnetic trip unit	■		■			■			■			■		■		■		■
Motor protection	Magnetic trip unit	■		■			■			■			■		■		-		-
Isolation function		■		■			■			■			■		■		■		■
Certification		TUV, CE		TUV, CE		KEMA, CE	KEMA, CE			KEMA, CE			KEMA, CE		KEMA, CE		KEMA, CE		

کلید کامپکت با رله نشتی جریان



- جریان نامی از 125 تا 630 آمپر
- قدرت قطع اتصال کوتاه 50 و 70 کیلوآمپر



1	Undervoltage release	6	Plug-in rear connection	11	Electric operating mechanism
2	Auxiliary contact	7	Plug-in front connection	12	Square handle operating mechanism
3	Alarm contact	8	Withdrawable connection	13	Round handle operating mechanism
4	Shunt release	9	Extension terminal		
5	Fixed rear connection	10	Interphase barriers		

Air Circuit Breaker

کلید هوایی

Himel

کلید هوایی ACB

Standard: IEC/EN IEC2-60947

Technical Parameters

Air Circuit Breakers		HDW3									
Frame size		1600M	1600S	2000M	2000S	3200M	3200S	4000M	4000S	6300M	6300S
Rated current		400, 630, 800, 1000, 1250, 1600		630, 800, 1000, 1250, 1600, 2000		2000, 2500, 3200		1600, 2000, 2500, 3200, 4000		4000, 5000, 3) 6300P only)	
Breaking capacity											
Icu(kA)	415/400V	50	42	80	65	80	65	100	85	120	85
	690/660V	35	35	50	40	65	50	65	65	85	75
Ics(kA)	415/400V	42	42	65	65	65	65	85	85	100	85
	690/660V	35	35	40	40	50	50	65	65	75	75
Icw(kA)	415/400V	42	42	65	65	65	65	85	85	85	85
	690/660V	35	35	40	40	50	50	65	65	75	75
Mechanical life	Without maintenance	12500		15000		10000		10000		2500	
	With maintenance	25000		30000		20000		20000		5000	
Electrical life	415/400V	6000		6500		5000		5000		800	
	690V	4000		4000		3000		3000		500	
Dimension(mm)H*W*D											
Draw-out	3P	322*288*330		436*405*425		436*465*425		439*441*428.6		441.5*815*508	
	4P	322*358*330		436*500*425		436*580*425		439*556*428.6		441.5*930*508	
Fixed	3P	310*276*229		397*364*327		397*428*327		352*422*329.5		/	
	4P	310*346*229		397*459*327		397*543*327		352*537*329.5		/	
Weight(KG)											
Draw-out type	3P	34		73.8		93.8		78		233	
	4P	41		85.5		115		95		271.8	
Fixed type	3P	14		41.4		53.4		42		/	
	4P	17		52		68		52		/	
Tripping time											
Tripping time with arc extinguishing		≤25ms									
Closing time		≤70ms									

ACB کلید هوایی

Standard: IEC/EN IEC60947-2

Intelligent Controller Introduction

L

M

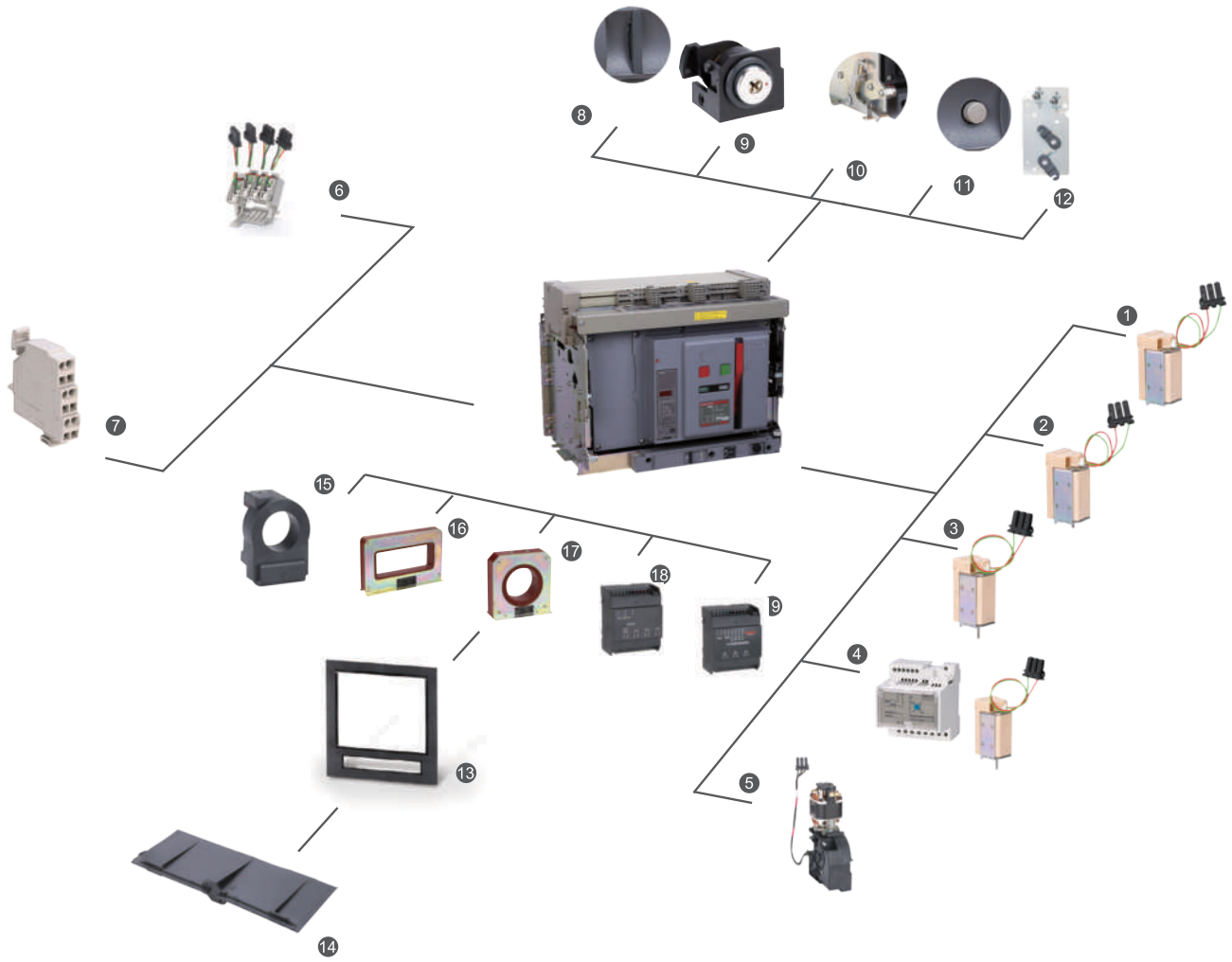
H

Intelligent Controller Introduction			
	iTR326	**iTR326A**	**iTR326H**
Protection function	Overload protection L	Overload protection L	Overload protection L
	Short-circuit protection with short delay S	Short-circuit protection with short delay S	Short-circuit protection with short delay S
	Short-circuit protection instantaneous I	Short-circuit protection instantaneous I	Short-circuit protection instantaneous I
	Ground protection G	Ground protection G	Ground protection G
	MCR Protection	MCR protection	MCR protection
	HSISC protection	HSISC 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
Measurement		Current measurement	Current measurement
			Voltage measurement
			Power measurement
			Frequency measurement
			Harmonics measurement
Auxiliary	Pre-alarm	Pre-alarm	Pre-alarm
	Event record	Self-diagnostic	Self-diagnostic
	Test	Event record	Event record
		Test	Test
Display		LED	LCD
Special function			Load monitoring
			Zone selective interlock
Communication			Modbus

کلید هوایی ACB

Standard: IEC/EN IEC2-60947

Overview of Accessories



Remote Operation	Indication Contact	Lock and Connection	Operation and protection	Controller accessories
1 Shunt coil	6 Auxiliary switch OF	8 Padlock	13 Door frame	15 N phase external transformer
2 Closing coil	7 Secondary terminal	9 Key lock	14 Phase partition	16 Leakage current transformer
3 Undervoltage release		10 Door lock		17 Ground transformer
4 Undervoltage delay release		11 Connection, separation, test position locking mechanism		18 Power module
5 Motor operating mechanism		12 Mechanical interlocking		19 Signal conversion module

Automatic Transfer Switch Controller

تجهیزات چنج اور

رله چنج اور اتوماتیک (ATS) کلید هوایی

Standard: IEC60947-6

Range Presentation

HDW3 ATSE is Himel 3 series range of automatic transfer switch controllers designed with programmable functions, automatic measuring, LCD display and digital communication.

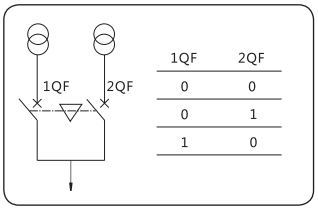
HDW3 ATSE can realize electrical parameters measurement and automatic control according to settings strategy reducing human operation errors.

Features

- HDW3 ATSE consists of microprocessor as core. 3-phase voltage and make precise recognition about abnormal voltage (over-voltage, under-voltage, missing phase, over-frequency, under-frequency) .This device considers fully the application with compact structure, advanced circuit, simple wiring, highly reliable, it can be widely applied to electrical devices, automatic control and debug system in industry of power, post and telecommunications, petroleum, coal, metallurgical, railway,

Two Breaker Interlock C2

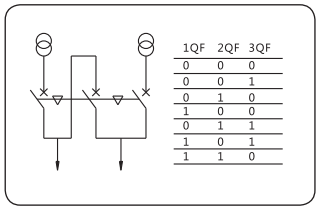
Interlock type A in which one of the two breakers (B1 or B2)can be switched ON. Each breaker must be equipped with a factory mounted interlock type A. Two cables are needed.



1QF	2QF
0	0
0	1
1	0

Three Breaker Interlock C3

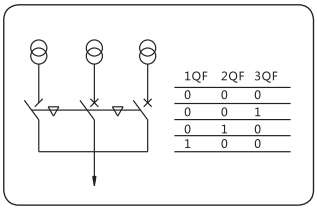
Interlock type B in which one of the three breakers (B1, B2 or B3) can be switched ON. Each breaker must be equipped with a factory mounted interlock type B. Six cables are needed.



1QF	2QF	3QF
0	0	0
0	0	1
0	1	0
1	0	0
0	1	1
1	0	1
1	1	0

Three Breaker Interlock type CM

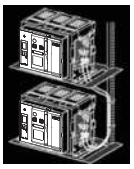
Interlock type A in which one of the two breakers (B1 or B2)can be switched ON. Each breaker must be equipped with a factory mounted interlock type A. Two cables are needed.



1QF	2QF	3QF
0	0	0
0	0	1
0	1	0
1	0	0

TS Controller + ACB + Mechanical Interlock

Two Breaker Interlock type C2

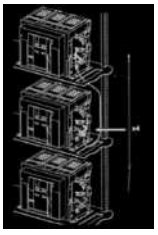


Two Breaker Interlock type A +

→

ATSEC2

Three Breaker Interlock type C3

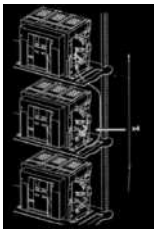


Three Breaker Interlock type B +

→

ATSEC3

Three Breaker Interlock type CM



Three Breaker Interlock type C +

→

ATSECM

کلید چنج اور موتوری خودکار

GB14048.11 / IEC60947-6-1

Technical Parameters					
Model & Spec	**HDQ3HB-63**	**HDQ3HB-100**	**HDQ3HB-250**	**HDQ3HB-400**	**CDQ3HB-630**
Executive circuit breaker	HDM3-63	HDM3-100	HDM3-250	HDM3-400	HDM3-630
Number of poles	3、4				
Available standard	GB14048.11 / IEC60947-6-1				
Electrical level	CB-level				
Use category	GB14048.11 AC-33iB / IEC60947-6-1 AC-32B				
Electrical performance	**HDQ3HB-63**	**HDQ3HB-100**	**HDQ3HB-250**	**HDQ3HB-400**	**HDQ3HB-630**
Rated insulation voltage Ui (V)	690	800			
Rated impulse withstand voltage Uimp (kV)	6	8			
Rated operating voltage Ue (V)	400				
Conventional thermal current Ie (A)	10/16/20/25/ 32/40/50/63	16/20/25/32/40 /50/63/80/100	100/125/140/160/ 180/200/225/250	200/225/250 /315/350/400	400/500/630
Rated working frequency (Hz)	50				
Breaking capacity level	S	S	F	F	F
Rated short circuit breaking capacity Icn (kA)	25	25	50	50	50
Rated short circuit making capacity Icm (kA)	52.5	52.5	105	105	105
Mechanical life (cycles)	10000	10000	5000	5000	5000
Electrical life (cycles)	1500		1000		
Conversion time	≤3s				
EMC level	Environment B				
Sampling mode	Normal and standby three-phase sampling				
Control function					
Power grid (P) – Power grid (P)	■				
Power grid (P) – Generator (G)	■				
Auto operation mode – Auto power-on and auto reset	■				
Auto operation mode – Auto power-on but not auto reset	■				
Auto operation mode – Mutual backup	■				
Electric operation vis button	■				
Manual operation vis handle	■				
Remote transfer	■				
Normal and standby power state output	■[2)]				
Normal and standby power-on state output	■				
Normal and standby trip state output	■				
Fire dual-divided	■(Alarm lamps flash simultaneously)				
Generator startup	■				

کلید دوطرفه

Standard: IEC60947-3

Range Presentation

HDGL is Himel range of Switch Disconnectors used in power distribution system for isolation and switching.

Features

- For AC 50/60Hz systems
- Max. rated operating voltage: 690V
- Max. rated operating current: 3150A

Online Content

HDGL

Selection Code

Range name	Type	Frame current	Pole number	Shaft	Window	Rated current
HDGL						
HDGL	**Default:** Normal type **Z:** Overlap type **ZC:** Symmetric type	**63:** 63A **100:** 100A **160:** 160A **250:** 250A **630:** 630A **1600:** 1600A **3150:** 3150A	**3:** 3P **4:** 4P	**Default:** no shaft **J:** External operation with extended shaft 300mm	**Default:** no window **K:** with observing window	**16:** 16A **25:** 25A **32:** 32A **40:** 40A **63:** 63A ... **2000:** 2000A **2500:** 2500A **3150:** 3150A

Technical Parameters

Switch Disconnectors	**HDGL**							
Utilization Category	AC-22B							
Conventional free air thermal current (A)	16 25 32 40 63	80 100	100 125 160	200 250	315 400	500 630	800 1000 1250 1600	2000 2500 3150
Power frequency withstand voltage (V)	2000							
Rated insulation voltage (V)	800							
Rated impulse with-stand voltage Uimp	12kV(2000m)							
Rated short-time withstand current (kA)	2		12		20	25	50	
Mechanical Endurance	8000				5000		3000	1000
Electrical Endurance	1500		200				100	

Note:

- Default length of the extended shaft for external operation handle is 300mm, (500mm available on request).
- Window: no window for 16-100A, and 125A-3150A can be manufactured with window
- No auxiliary contact for 16-100A

POWER FACTOR CORRECTION

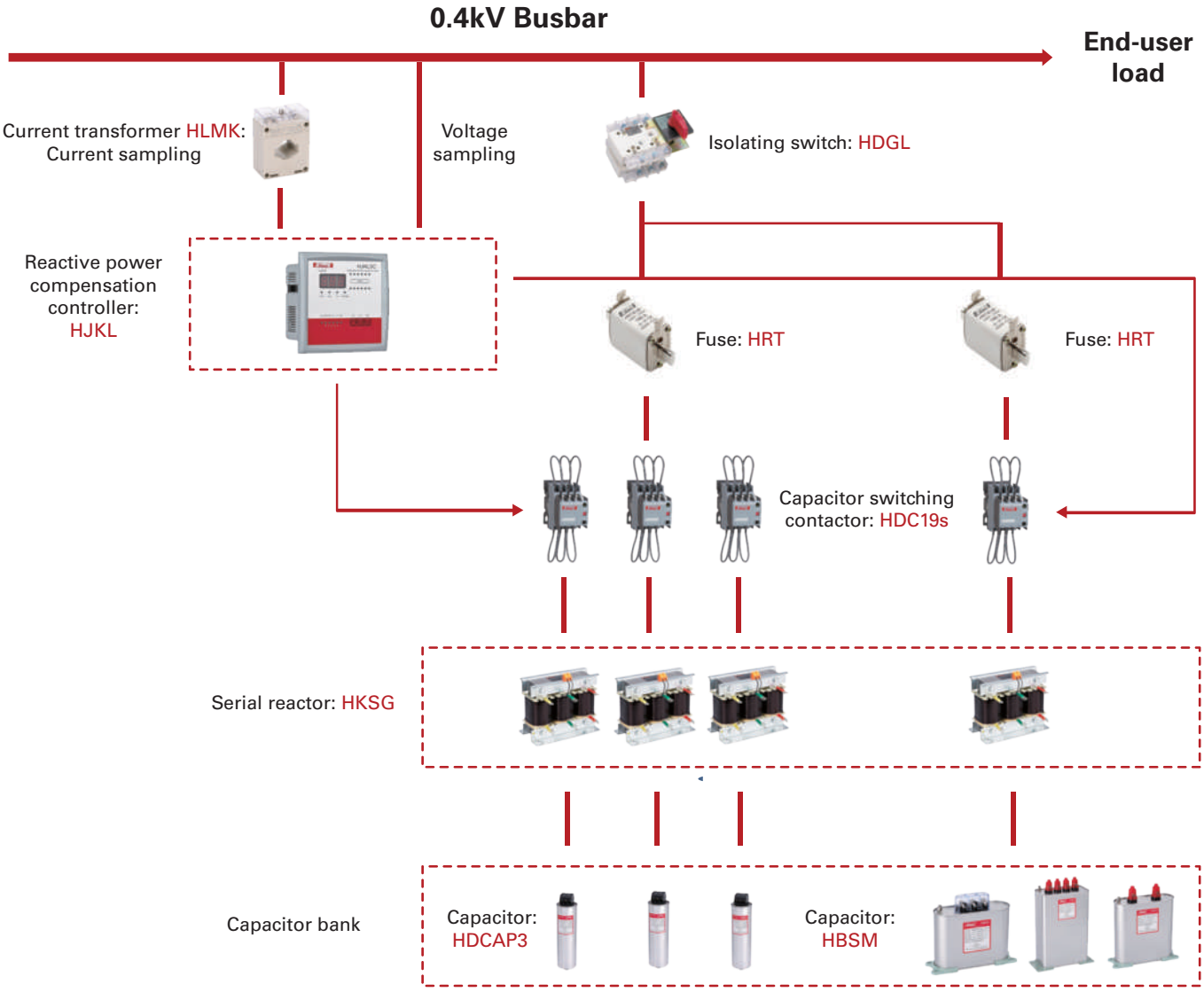
اصلاح ضریب توان

POWER FACTOR CORRECTION

تجهیزات اصلاح ضریب توان

Standard: IEC60947-4-1, IEC60947-5-1

Reactive Power Compensation Solution



System solution for reactive power compensation cabinet.

POWER FACTOR CORRECTION

خازن فشار ضعیف سیلندری

Standard: IEC60831

Range Presentation

Power Factor Correction capacitors with and without reactor form part of a comprehensive offer of products perfectly coordinated to meet low-voltage power distribution needs.

HDCAP3: Cylinder type

Features

- Low loss of medium and temperature with long serving time to save eleltricity bill.
- Metallized Polypropylene technology with built-in SELF HEALING properties.
- Full specifications:
  - **HDCAP3**
    Capacity: 1-30kvar
    Voltage: 400V, 450V, 525V
    Connection type: Three-phase

Online Content

HDCAP3

Selection Code

HDCAP3 series

Range name	Rated voltage	Rated compensation capacity	Compensation method
HDCAP3	**400**	**5**	**3**
HDCAP3: Cylinder type	**0400:** 400V **0450:** 450V **0525:** 525V	**005:** 5kvar **705:** 7.5kvar **010:** 10kvar **025:** 25kvar **030:** 30kvar	**3:** Three-phase compensation

Technical Parameters	
Low-voltage Capacitor	**HDCAP3**
Rated Voltage(AC)	400V, 450V, 525V
Rated Capacity	1-30kvar
Capacity deviation (μF)	0~+10% of the rated capacity
Loss angle tangent (tan)	At the rated power-frequency voltage, 20℃ tan õ≤0.2%
Connection Type	Three-phase
Rated Frequency	50Hz
Ambient Temperature	-25℃ ~+50℃
AC withstand voltage	Inter-electrode: 2.15Un/10s
	Between shell and phase: 3kV/10s
Allowable over-voltage (Un)	1.10 of rated voltage (not greater than 8h in 24h)
Allowable over-current (In)	1.43 of rated current
Altitude	≤2000m
Relative humidity	≤50% at 40℃ ≤90% at 20℃
Appearance	Cylinder
Inside Dipping Material	Polypropylene metallized film
Self discharge characteristic	The residual voltage reduces to 50V or below from √ 2Un after 3 minutes in case of power failure
Standard	IEC60831

POWER FACTOR CORRECTION

خازن فشار ضعیف کتابی

Standard: IEC60831

Range Presentation

Power Factor Correction capacitors with and without reactor form part of a comprehensive offer of products perfectly coordinated to meet low-voltage power distribution needs.

HBSM: Box type

Features

- Low loss of medium and temperature with long serving time to save eleltricity bill.
- Metallized Polypropylene technology with built-in SELF HEALING properties.
- Full specifications:
  - **HBSM: Capacity:** 0.5~60kvar
    Voltage: 230V, 250V, 280V, 400V, 415V, 440V, 450V, 480V, 525V, 660V, 690V, 760V
    Connection type: Single-phase, three-phase, three-phase four-wire
    Housing type: D, M and Q

Online Content

HBSM

HBSM series

Range name	With or without reactor	Rated voltage	Rated compensation capacity	Compensation method	Housing type
HBSM	**0**	**04500**	**0150**	**3**	**D**
HBSM: Box type	**0:** Without reactor **1:** With reactor	**02300:** 230V **02500:** 250V **02800:** 280V **04000:** 400V **04150:** 415V **04500:** 450V **04800:** 480V **05250:** 525V **06900:** 690V **07500:** 750V **02303:** 230√3V **02503:** 250√3V **02803:** 280√3V **04003:** 400√3V	**0005:** 0.5kvar ... **0075:** 7.5kvar ... **0100:** 10kvar ... **0150:** 15kvar ... **0200:** 20kvar ... **0300:** 30kvar ... **0400:** 40kvar ... **0600:** 60kvar	**1:** Single-phase compensation **3:** Three-phase compensation **4:** Three-phase four-wire compensation 3YN	**D:** D type **M:** M type **Q:** Q type

Technical Parameters	
Low-voltage Capacitor	**HBSM**
Rated Voltage(AC)	230V, 250V, 280V, 400V, 415V, 440V, 450V, 480V, 525V, 660V
Rated Capacity	0.5-60kvar
Capacity deviation (μF)	0~+10% of the rated capacity
Loss angle tangent (tan)	At the rated power-frequency voltage, 20℃ tan õ≤0.2%
Connection Type	Single-phase, three-phase, three-phase four-wire
Rated Frequency	50Hz
Ambient Temperature	−25℃ ~ +50℃
AC withstand voltage	Inter-electrode: 2.15Un/10s
	Between shell and phase: 3kV/10s
Allowable over-voltage (Un)	1.10 of rated voltage (not greater than 8h in 24h)
Allowable over-current (In)	1.43 of rated current
Altitude	≤2000m
Relative humidity	≤50% at 40℃ ≤90% at 20℃
Appearance	Box
Inside Dipping Material	Polypropylene metallized film
Self discharge characteristic	The residual voltage reduces to 50V or below from √ 2Un after 3 minutes in case of power failure
Standard	IEC60831

رگولاتور بانک خازنی هوشمند

Standard: IEC60831

رگولاتور هوشمند

- 12 پله
- صفحه نمایش LCD
- اندازه‌گیری THD هارمونیک ولتاژ و جریان
- کلیدزنی اتوماتیک و دستی
- نمایش ولتاژ، جریان، ضریب توان، توان اکتیو و راکتیو، فرکانس، هارمونیک ولتاژ و جریان، دمای محیط
- آلارم قابل برنامه‌ریزی
- قابلیت کنترل فن تابلو
- پورت ارتباطی RS485 مودباس

Technical Parameters	
Rated operating voltage	AC400V (±15%)
Frequency	50 / 60Hz
Rated current	≤5A
Sensitivity	≤50mA
Compensation method	Common three-phase compensation
Power loss	<5VA
Response time	1s~120s
Output capacity	220V/5A
Output loop number	12 loops
Hole size	113*113(mm)
Weight	<0.6kg

POWER FACTOR CORRECTION

رگولاتور بانک خازنی ساده

Standard: IEC60831

رگولاتور ساده

- 12 پله
- صفحه نمایش LED
- اندازه‌گیری و نمایش جریان
- کلیدزنی اتوماتیک و دستی

Technical Parameters		
Power Factor Correction Controllers	**HJKL**	
Category	Parameter value	Default Value
Sampling voltage	380V(HJKL5C)/ 220V(HJKL2C)±15%	
Sampling current	n/5A (Is≤5A)	
Frequency	50-60(Hz)	
Sensitivity	50mA	
Input threshold	lag 0.80-lead-0.82 adjustable step 0.01	0.95
Cut-off threshold	lead-0.80-lag0.82 adjustable step 0.01	-0.99
Loop setting	1-12 adjustable step 1	
Time setting	1s~120s adjustable step 1s	30s
Overvoltage setting	400~450V(HJKL5C)adjustable step 5V	430V
	235~260V(HJKL2C)adjustable step 5V	245V
Undervoltage protection	300V(HJKL5C) / 170V(HJKL2C)	
Undercurrent setting	0mA~500mA adjustable step 50mA	200mA (0 is for close)
COS display	Lead & Lag (0.00~0.99) resolution 0.01	
Working methods	Continuous working, circular switching	
Output loops	4, 6, 8, 10, 12 loops	
Capacity of output	Each group 5A, 220V resistive / 3A, 380V resistive	
IP grade	IP30 for cover	

POWER FACTOR CORRECTION

راکتور بانک خازنی

Standard: IEC60289

Range Presentation

Capacitors get easily affected and damaged by harmonic current, inrush current, and due to over voltage in the reactive power compensation system. Therefore, to avoid parallel resonance and the issue about amplified harmonic current, reactors need to be added in series along with the capacitors. Reactors are applied to avoid excessive amplification of power grid harmonics and resonance resulting from the connection of capacitor banks to prolong the service time of capacitors.

Features

Reactors adopt three-phase three-column type structure:

- High-impact binder is applied (high-temperature tolerance) and no noise during the operation
- Coils are tightly wound with enameled flat wires to ensure that coils of reactors do not vibrate during the operation(foil winding is used when current is more than 100A).
- High efficiency and low loss

Online Content

HKSG

Selection Code

Model	Winding Material	Rated Capacity of the Reactor	Rated Voltage of the Capacitor	Reactance Ratio
HKSG	**L**	**1P0**	**G048**	**H7**
	Default: Copper windings **L:** Aluminum windings	**P6:** 0.6kvar **P7:** 0.7kvar **1P0:** 1kvar ... **9P8:** 9.8kvar	**G048:** 480V **G052:** 525V	**H7:** 7% **H14:** 14%"

Technical Parameters	
Basic Information	**HKSG Series**
Rated Operating Voltage(AC)	AC0.48kV, AC0.525kV (others can be customized)
Reactance Ratio	7% and 14% (others can be customized)
Phase	Three-phase
Rated Frequency	50Hz
Withstand voltage grade	3000V / min
Overload ability	≤1.35 times
Temperature rise limitation	Coil temperature rise≤85K Winding temperature rise≤95K
Reactor noise	< 50dB
Insulation class	> F
IP grade	IP00
Altitude	≤ 2000m
Ambient temperature	-25°C~+50°C
Standard	IEC 60289

POWER FACTOR CORRECTION

کنتاکتور خازنی

Standard: IEC60947-4-1, IEC60947-5-1

CE

Range Presentation

HDC19s is Himel range of contactors dedicated for switching of capacitors. It is developed based on 3 series contactor with technology to reduce capacitor closing current impact on contactor contacts.

Features

- Current range covers from 25A to 170A
- Various auxiliary contact types can be selected for different applications
- Manufactured on automated production line for better reliability.

Online Content

HDC19s

Selection Code

Range name	Frame current	Auxiliary contact	Coil voltage	Frequency
HDC19s	**25**	**11**	**M**	**5**
HDC19s: Capacitor Switching Contactor	**25:** 25A **32:** 32A **43:** 43A **63:** 63A **95:** 95A **115:** 115A ***150:** 150A ***170:** 170A	**HDC19s-25~43A:** **11:** 1NO+1NC **20:** 2NO+0NC **02:** 0NO+2NC **HDC19s-63~115A:** **12:** 1NO+2NC **21:** 2NO+1NC **HDC19s-150~170A:** **32:** 3NO+2NC	**F:** 110V **S:** 127V **M:** 220/230V **U:** 240V **Q:** 380/400V **L:** 415V **X:** 440V	**5:** 50Hz **7:** 50/60Hz

Note:"*" pruducts are not yet on the market, please consult local Himel office if necessary.

Technical Parameters

Capacitor Switching Contactors			HDC19s-25	HDC19s-32	HDC19s-43	HDC19s-63	HDC19s-95	HDC19s-115	HDC19s-150	HDC19s-170
Standard			IEC60947-4-1, IEC60947-5-1							
Certificate			CE							
Main circuit										
Rated operating voltage (Ue)		V	380/400							
Rated insulation voltage (Ui)		V	690							
Rated current of controlled capacitor	AC-6b 380V	A	17	23	29	43	63	87	115	130
Rated capacity of controlled capacitor (Qn: kvar)	Rated operating voltage of capacitor	AC-6b 220V	6	10	15	18	30	35	46	52
		AC-6b 380V	12	20	25	30	50	60	80	90
Rated conventional thermal current		A	25	32	43	63	95	125	200	200
Controlling capability of inrush current		A	≤35In			≤55In			≤60In	
Mechanical endurance		10000 times	100							
Electrical endurance	AC-6b 380V	10000 times	15				12			
Operating frequency	AC-6b 380V	Times/h	300				120			
Coil										
Coil voltage (Us)		V	24,36,48,110,127,220/230,240,380/400,415,440							
Coil frequency		Hz	AC 50Hz & 50/60Hz							
Operating voltage		V	85%-110%Us							
Drop-out voltage		V	20%-75%Us							
Auxiliary Contact										
Auxiliary contact combination			11,20,02			12,21			32	
Rated conventional thermal current (Ith)		A	10							

Note: Parameters above are considered under three-phase system; for single-phase capacitor, please consult us.

MOTOR MANAGEMENT COMPONENTS

کنترل و حفاظت موتور

Himel

MOTOR MANAGEMENT

کلید حرارتی

Standard: IEC60947-4

Range Presentation

HDP6 Motor Control & Protection range is meant to help optimize and secure your installation from HVAC to small Genset applications. It also helps your packaging or pumping businesses to run on a reliable product.

The range covers application up to 32A including wide range of voltage from 230V up to 690V

Features

- Frame Current: 32A, 80A
- Setting Current: 0.1-32A, 25-80A

Online Content

HDP6

Selection Code

Range name	Frame size	Setting currents
HDP6	**32**: 32A	**P16**: 0.1-0.16A **32**: 24-32A
HDP17K	**80**: 80A	**40**: 25-40A **63**: 40-63A **80**: 56-80A

Order Information

Thermal release Setting current	Magnetic release Current Id	400/415V, 50/60Hz, AC-3 Rated operating power	Recommended Contactor	Reference
0.1-0.16A	1.5A	-	HDC3-0911	HDP632P16
0.16-0.25A	2.4A	0.06kW	HDC3-0911	HDP632P25
0.25-0.4A	5A	0.09kW	HDC3-0911	HDP632P4
0.4-0.63A	8A	0.12kW	HDC3-0911	HDP632P63
0.63-1A	13A	0.25kW	HDC3-0911	HDP6321
1-1.6A	22.5A	0.37kW	HDC3-0911	HDP6321P6
1.6-2.5A	33.5A	0.75kW	HDC3-0911	HDP6322P5
2.5-4A	51A	1.5kW	HDC3-0911	HDP6324
4-6.3A	78A	2.2kW	HDC3-0911	HDP6326P3
6-10A	138A	4kW	HDC3-0911	HDP63210
9-14A	170A	5.5kW	HDC3-1211	HDP63214
13-18A	223A	7.5kW	HDC3-1811	HDP63218
17-23A	327A	9kW	HDC3-2511	HDP63223
20-25A	327A	11kW	HDC3-2511	HDP63225
24-32A	416A	15kW	HDC3-3211	HDP63232
25-40A	480A	16kW	HDC3-4011	HDP17K8040
40-63A	756A	20kW	HDC3-6511	HDP17K8065
56-80A	960A	25kW	HDC3-8011	HDP17K8080

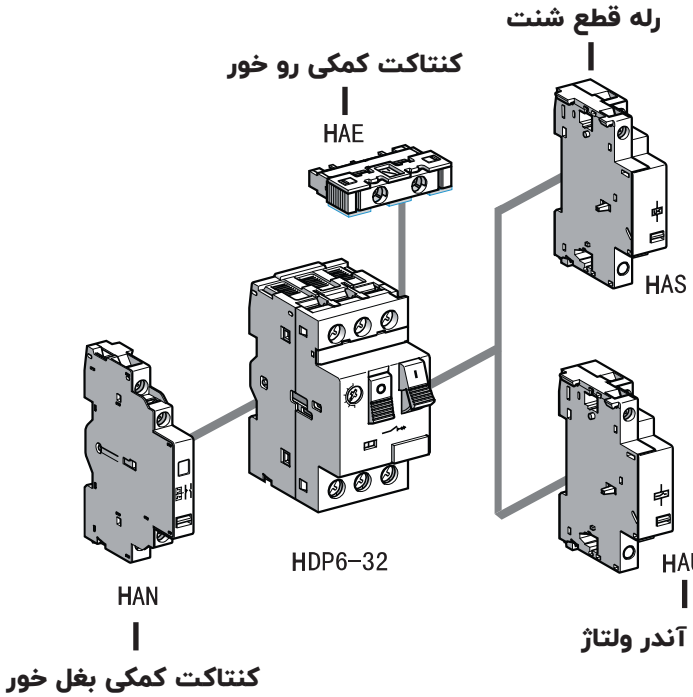
کلید حرارتی

Standard: IEC60947-4

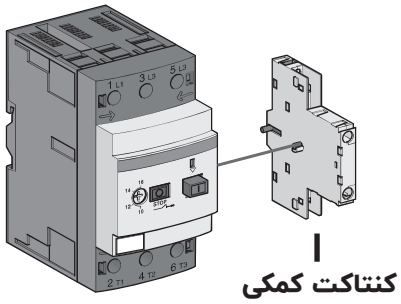
Technical Parameters		
Motor Circuit Breakers	**HDP6-32**	**HDP17Z-80**
Operation mode	Button operated	
Frame current	32A	80A
Rated impulse withstand voltage	6000V	
Maximum rated operating voltage	690V	
Rated insulation voltage	400/690V	
Rated operating frequency	50/60Hz	
Trip class	10A	
Fastening torque	1.7N • m	4 N • m
Mechanical durabilities	100,000	
Electrical durabilities AC-3 400V	100000	
Overload protection category	Thermal Overload Protection Open-phase Protection	
Short circuit protection	Yes	
Isolation function	Yes	
Temperature compensation function	Yes	
Accessories	Side Auxiliary Contact Top Auxiliary Contact Shunt release	Side Auxiliary Contact
Certificate	CE, SEMKO	

Overview of Accessories

HDP6-32



HDP17Z-80



کنتاکتور

Standard: IEC60947-4

Technical Parameter

AC Contactors			HDC3											
Contactor model			06	09	12	18	25	32	38	40	50	65	80	95
Main circuit characteristics														
Conversional thermal current(Ith), AC-1	380/400V	A	16	25	25	32	40	50	50	60	80	80	125	125
Rated operating current (Ie), AC-3		A	6	9	12	18	25	32	38	40	50	65	80	95
Rated operating power(Pe), AC-3	220/230V	kW	1.1	2.2	3	4	5.5	7.5	11	11	15	18.5	22	25
	380/400V	kW	2.2	4	5.5	7.5	11	15	18.5	18.5	22	30	37	45
	660/690V	kW	3	5.5	7.5	10	15	18.5	18.5	30	33	37	45	45
Mechanical endurance		10k times	1200				1000			900			650	
Electrical endurance	AC-3	10k times	110					90					65	
Operation frequency		Times/hour	1200					600						
Number of poles			3P											
Rated insulation voltage(Ui)		V	690											
Maximum rated operating voltage(Ue)		V	660/690											
Certificate			CB, CE, SEMKO											
Coil														
Rated control circuit voltage(Us)	50Hz	V	24, 36, 48, 110, 127, 220/230, 240, 380/400, 415, 440											
	50/60Hz	V	24,36, 48, 110, 127, 220/230, 240, 380/400, 415, 440											
Allowable control circuit voltage(Us)	Operation	V	AC:70%~120% (vertical installation)											
	Drop-out	V	AC: 20%-75%											
Coil power	Actuation	VA	50	60			70			200			200	
	Holding	VA	6-9.5	6-9.5			6-9.5			15-20			15-20	
Main circuit terminal wiring capability														
Soft wire	1 wire	mm²	1…4				1.5…6			2.5..25			4…50	
	2 wire	mm²	1…4				1.5…6			2.5..16			4…25	
Hard wire	1 wire	mm²	1…4				1.5…6		1.5…10	2.5..25			4…50	
	2 wire	mm²	1…4				1.5…6		1.5…6	2.5..10			4…25	
Auxiliary contact														
Conventional thermal current(Ith)		A	10											
Rated operating voltage	AC	V	380											
	DC	V	220											
Rated control capacity	AC-15	VA	380											
	DC-13	W	33											

MOTOR MANAGEMENT

کنتاکتور

Standard: IEC60947-4

Main technical parameter

AC Contactor			HDC3								
Contactor model			120	160	185	225	265	330	400	500	630
Main Circuit Characteristic											
Conversional thermal current(Ith), AC-1	380/400V	A	200	200	275	275	315	380	450	630	700
Rated operating current (Ie), AC-3		A	120	160	185	225	265	330	400	500	630
Rated Operating Power(Pe), AC-3	220/230V	kW	37	45	55	63	75	90	132	160	200
	380/400V	kW	55	75	90	110	132	160	220	250	355
	660/690V	kW	80	100	110	110	165	220	300	350	450
Mechanical Durabilities		10k times	600								
Electrical Durabilities	AC-3	10k times	120				80			60	
Operation Frequency		Times/hour	1200		600						
Number of Poles			3P								
Rated Insulation Voltage(Ui)		V	1000								
Maximum Rated Operating Voltage(Ue)		V	690								
Certificate			CB, CE, SEMKO								
Coil											
Rated Control Circuit Voltage(Us)	50Hz	V	110V,127V,220V,380V				-				
	50/60Hz	V	48-130V, 100-250V, 250-500V (AC-DC)								
Allowable Control Circuit Voltage(Us)	Operation	V	AC:85%-110% (vertical installation); AC-DC: 85%-110%								
	Drop-out	V	AC: 20%-75%; AC-DC: 10%-70%								
Coil Power	Actuation	VA	500			600			800		
	Holding	VA	78			18.5			18.5		
Main Circuit terminal Wiring Capability											
Soft Wire	1 wire	mm^2	10~240								
	2 wire	mm^2	10~75								
Hard Wire	1 wire	mm^2	10-150				50-240				
	2 wire	mm^2	10-75				50-240				
Auxiliary Contact											
Conventional Thermal Current(Ith)		A	10								
Rated Operating Voltage	AC	V	380								
	DC	V	220								
Rated Control Capacity	AC-15	VA	380								
	DC-13	W	33								

رله حرارتی (بی متال)

Standard: IEC60947-4

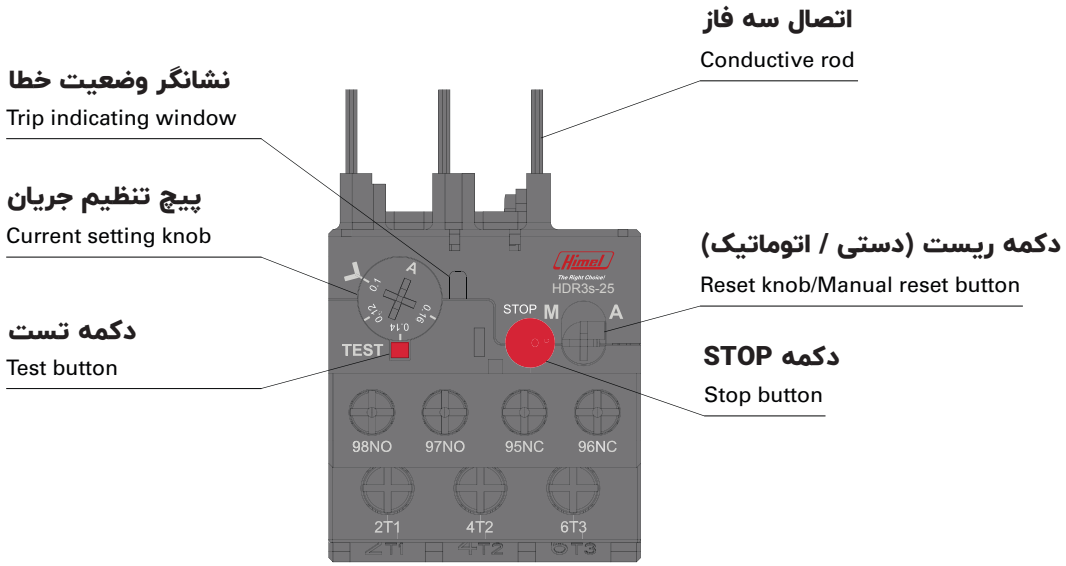
Order Information

Frame Current (A)	Setting Current(A) code		Recommended HRT16	Recommended Contactor	Reference
25	0.1-0.16	P16	4	HDC3 09-38 HJX2 4P 09-40	HDR3s25P16
	0.16-0.25	P25	4		HDR3s25P25
	0.25-0.4	P4	4		HDR3s25P4
	0.4-0.63	P63	4		HDR3s25P63
	0.63-1	1	4		HDR3s251
	1-1.6	1P6	4		HDR3s251P6
	1.6-2.5	2P5	6		HDR3s252P5
	2.5-4	4	10		HDR3s254
	4-6	6	16		HDR3s256
	5.5-8	8	20		HDR3s258
	7-10	10	20		HDR3s2510
	9-13	13	25	HDC3 12-38 HJX2 4P 12-40	HDR3s2513
	12-18	18	35	HDC3 18-38 HJX2 4P 25-40	HDR3s2518
	17-25	25	50	HDC3 25-38 HJX2 4P 25-40	HDR3s2525
38	23-32	32	63	HDC3 32-38 HJX2 4P 25-40	HDR3s3832
	30-40	40	80	HDC3 32-38 HJX2 4P 40	HDR3s3840
93	7.0-10	10	20	HDC3 40-95	HDR3s9310
	9.0-13	13	25		HDR3s9313
	12-18	18	35		HDR3s9318
	17-25	25	50		HDR3s9325
	23-32	32	63		HDR3s9332
	30-40	40	80		HDR3s9340
	37-50	50	100	HDC3 50-95 HJX24P 50-95	HDR3s9350
	48-65	65	100		HDR3s9365
	55-70	70	125	HDC3 65-95 HJX2 4P 65-95	HDR3s9370
	63-80	80	125	HDC3 80-95 HJX2 4P 80-95	HDR3s9380
	80-93	93	160	HDC3 95 HJX2 4P 80-95	HDR3s9393

رله حرارتی (بی متال)

Standard: IEC60947-4

Frame Current (A)	Setting Current(A) code		Recommended HRT16	Recommended Contactor	Reference
185	48-65	65	100	HDC3 120~185 HJX2F 4P 115-185	HDR3s18565
	55-70	70	100		HDR3s18570
	63-80	80	100		HDR3s18580
	75-95	95	125		HDR3s18595
	90-115	115	200		HDR3s185115
	105-135	135	200		HDR3s185135
	120-150	150	200		HDR3s185150
	130-160	160	250		HDR3s185160
	150-185	185	250		HDR3s185185
630	145-200	200F	400	HDC3 225~630 HJX2F 4P 225-630	HDR3s630200F
	180-250	250F	400		HDR3s630250F
	230-320	320F	500		HDR3s630320F
	290-400	400F	630		HDR3s630400F
	350-480	480F	800		HDR3s630480F
	460-630	630F	800		HDR3s630630F

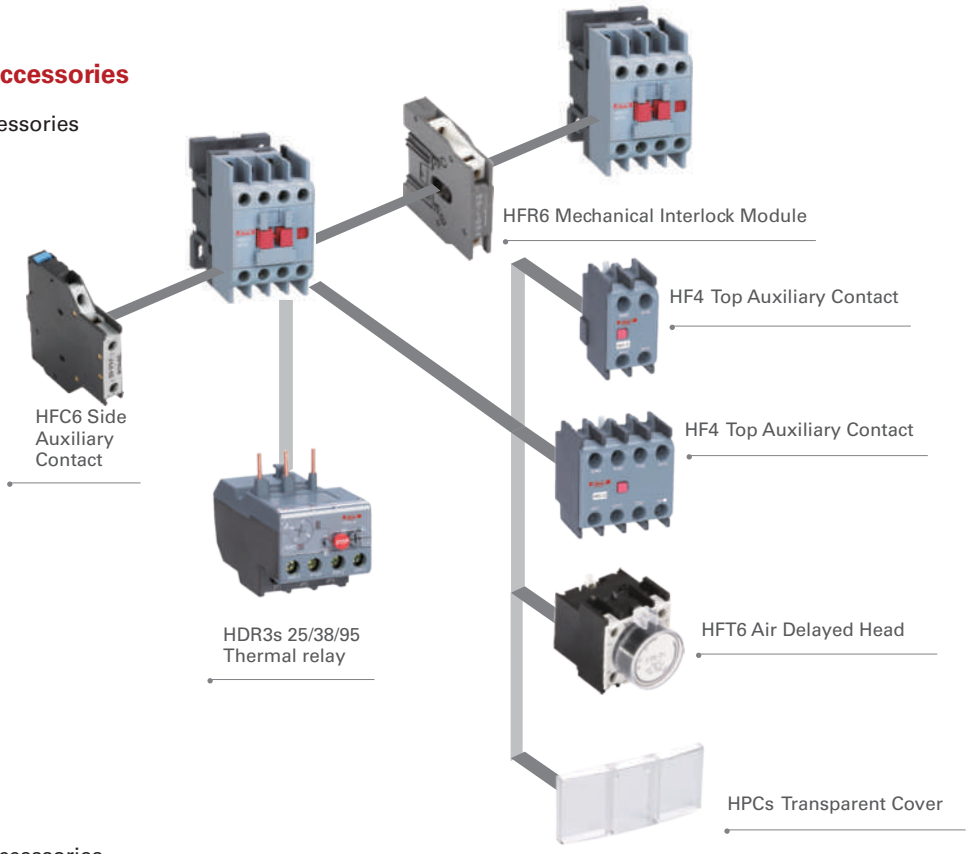


تجهیزات جانبی کنتاکتور

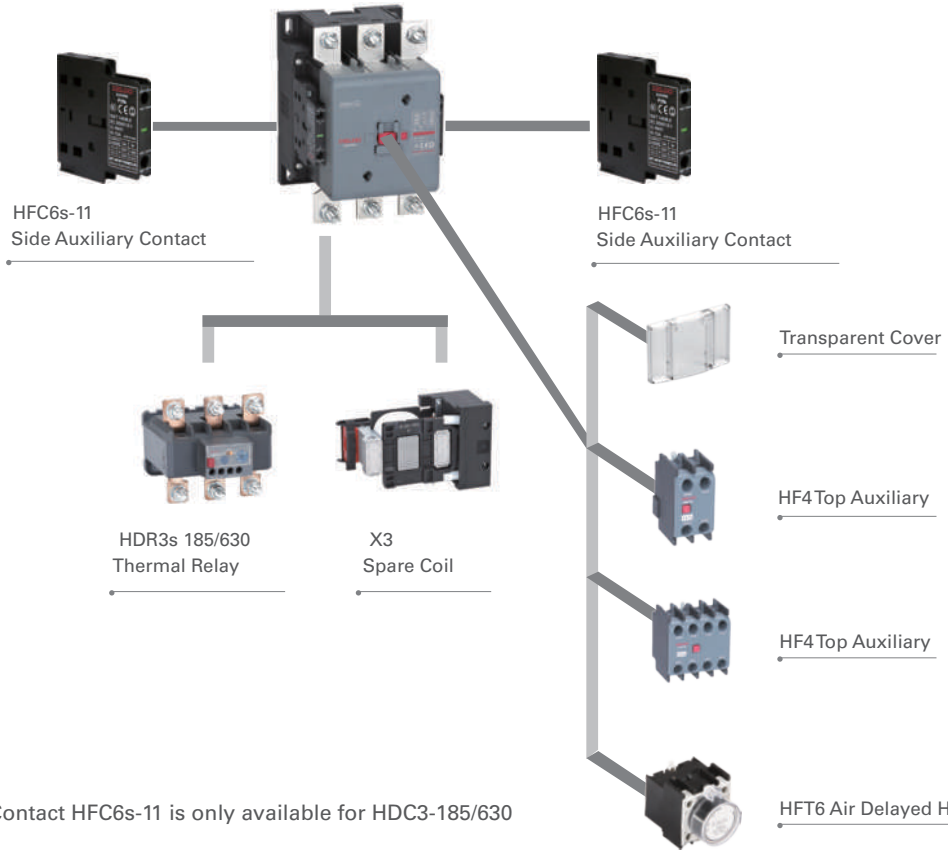
Standard: IEC60947-4

Overview of Accessories

HDC3 09-95A Accessories



HDC3 120-630A Accessories



Note:Side Auxiliary Contact HFC6s-11 is only available for HDC3-185/630

کنترل فاز

Standard: IEC 60947-5-1

Function

HXJ9 phase failure and sequence proctection relay provides:

- ◆ Rated frequency is 50Hz, and rated control supply AC voltage is 400V
- ◆ Phase failure and phase sequence protections

Order Information

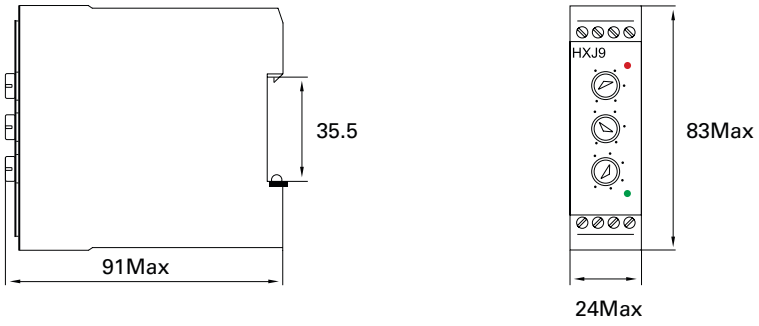
Function	Voltage	Reference
Phase Failure and sequence Protection	380V	HXJ9
	400V	HXJ9400

Technical Data

Standard	IEC 60947-5-1
Overvoltage protection	Adjustable, HXJ9: 380~460V, HXJ9400: 400~480V, Reaction time: 1.5s-4s (adjustable)
Undervoltage protection	Adjustable, HXJ9: 300~380V, HXJ9400: 320~400V. Reaction time: 2s-9s (adjustable)
Phase failure & phase wrong protect time	Reaction time ≤2s
Contactor mode	1 NO, 1NC
Contactor endurance	5A Resistive
Power voltage	AC 400V
Mechanical lifetime	1×10^6 times
Electrical lifetime	$\geq1\times10^5$ times
Power loss	≤1W
Contactor capacity	AC400V×3

Overall Dimensions

Unit: mm



مینی کنتاکتور

Standard: IEC60947-4

Technical Parameters					
Miniature AC Contactors			**HDC17-K06**	**HDC17-K09**	**HDC17-K12**
Main circuit characteristics					
Rated operating current	380V/400V, AC-3	A	6	9	12
	380V/400V, AC-4	A	2.6	3.5	5
	660V/690V, AC-3	A	3.5	5	6
	660V/690V, AC-4	A	1.2	1.5	2
Rated operating voltage		V	220/230, 380/400, 660/690		
Rated insulation voltage		V	690		
Rated conventional thermal current		A	16	20	20
Pole			3, 4		
Power of controlled 3-phase cage motor	220V/230V, AC-3	kW	1.5	2.2	3
	380V/400V, AC-3	kW	2.2	4	5.5
	660V/690V, AC-3	kW	3	4	4
Electric endurance	AC-3	$\times 10^4$ operations	100		
Operating rate		cycles/h	1200		
Electric endurance	AC-4	$\times 10^4$ operations	20		
Operating rate		cycles/h	600		
Mechanical endurance		$\times 10^4$ cycles	1000		
Matched Fuse			HRT16-16	HRT16-20	
Cable connection	Inflexible cable	number of piece	2		
	Cross Section of Cable	mm^2	4		
Certificate			CB, CE		
Coil					
Coil voltage(Us)		V	AC 24V,36V,110V,127V,220/230V,380/400V		
Operating voltage		V	85%～110% Us		
Drop-out voltage		V	20%～75% Us		
Inrush		VA	30		
Auxliary contact					
Rated conventional thermal current		V	690		
Rated insulation voltage		A	10		
Rated operating current		A	0.95		
Control capacity	380V, AC-15	A	0.15		
	220V, DC-13	VA	360		
	AC-15	W	33		
	DC-13				

VARIABLE SPEED DRIVE (VSD)

کنترل دور موتور

Product Specifications

درایو کنترل دور موتور

Target Application		Small & Simple General Purpose Applications	P&F & Advanced General Purpose Applications
Range Name		BASIC	EXPERT XS
Design			
Capacity range	Single phase 200V Class	200V(-15%)-220V(+10%) 0.4~2.2kW	200V(-15%)-220V(+10%) 0.75~2.2kW
	Three phase 200V Class	—	200V(-15%)-240V(+10%) 0.75~160kW
	Three phase 400V Class	380V(-15%)-440V(+10%) 0.4~5.5kW	0.75～450kW [380V (-15%)～440V (+10%)] 500kW ~ 850kW (380V -15% +10%)
Frequency	Input frequency	50/60Hz	
	Output frequency	0-650Hz	0 - 550Hz
Overload capacity	Normal Duty	—	120% for 1min, 150% for 1s, 180% instant protection
	Heavy Duty	150% for 1min, 180% for 1s,200% instant protection	150% for 1min, 180% for 3s, 200% instant protection
Control method	V/f	√	√
	Sensor less vector control		√
	Eco-mode control	√	√
Start torque		0.5Hz, 150%	
Inbuilt PID		√	√
Keypad		Fixed	Pluggable
Display		Single row LED	Double row LED
Multispeed control		Up to 16 stages in one cycle	
I/O	DI1-DI4	NPN/PNP, Input: 9-30VDC	
	DI5	NPN/PNP, Input: 15-30VDC, Pulse input: max. 50kHz	
	DO1	9-30VDC, max. 50mA	
	DO2	9-30VDC, max. 50mA Pulse output max. 50kHz	
	AI1	V: 0-10V I: 0-20mA Resolution: 1/1000	V: 0-10V I: 0-20mA Resolution: 1/1000
	AI2	V: 0-10V Resolution: 1/1000	
	AO1	V:0-10V	V:0-10V I: 0-20mA
	AO2	V:0-10V I: 0-20mA	
	RO(Ta, Tb, Tc)	NO: 24VDC 3A / 250VAC 5A NC: 24VDC 3A / 250VAC 3A	
Inbuilt communication (Max. speed)		RS485, Modbus RTU (38.4kbps)	
Options	Extension I/O	—	DI/DO/AI/AO/RO/PT100/PT1000
	Extension keypad	Support, cable length:2m, 5m	
Installation Way		Wall mounted, cabinet, din-rail	Wall mounted, cabinet, flange installation
Dust Shields		—	Optional
EMC Filter	C3	—	External card available (≥ 30kW)
Braking unit		Built-in	Built-in (≤ 22W)
Environment	Operation temperature	-10-40 ˚C no capacity reduction, 40 ˚C -50˚C capacity reduction	
	Humidity	≤90%RH	
	Altitude	≤1000m, no capacity reduction	
	IP level	IP20	
Standards		EN 61800-3: 2004 +A1: 2012 +A1: 2012, EN 55011: 2016+A1: 2017, EN 61000-6-2: 2005, EN 61000-3-2: 2014, EN 61000-3-3: 2013, EN 61000-4-2: 2009, EN 61000-4-3: 2006+A1: 2008+A2: 2010, EN 61000-4-4: 2012, EN 61000-4-5: 2014, EN 61000-4-6: 2014, EN 61000-4-8: 2010, EN 61000-4-11: 2004	
Certificates		CE	CE

Product Specifications

درایو کنترل دور موتور

Target Application		Small & Simple General Purpose Applications	P&F & Advanced General Purpose Applications
Range Name		BASIC	EXPERT XS
Design			
Features	Velocity ratio	1:100	
	Frequency precision	Digital setting: Max frequency X ±0.01% Analog setting: Max frequency X ±0.2%	
	Frequency resolution	Digital setting :Max frequency X ±0.01% Analog setting: Max frequency X ±0.1%	
	Torque rise	Integrated auto-torque rising function Manual- setting: 0.1%~30.0%	
	V/F control curve	Linear, Square, $V^{1.7}/F$, $V^{1.2}/F$	
	Acceleration/Deceleration Time	4 types of ACC/DEC time selection; optional time unit selection (Min/s); setting range: 0~60hours;	
	DC braking	Start frequency: 0.00~60.00Hz; braking time: 0.0~30.0s; braking current: 0.0~100%	
	Automatic voltage regulation(AVR)	√	
	Auto current limitation	√	
	Auto PWM adjustment	√	
Protection	Prevent mis operation	–	√
	Protection function	Over-current, over-voltage, under-voltage, over-heat, over-load, short circuit.	
	Cooling	Air- cooling	
Warranty		24 months	

Reference Selection

Range Name	Series Name	Input	Adaptation	AC Drive
HAV	BA	4T	0015	G (-W)

BA: BASIC XS: EXPERT Standard	2: 220V 4: 380V – 440V	**Adaptation** 0015: 1.5kW 0075: 7.5kW 0110: 11kW 0185: 18.5kW 1100: 110kW	**AC Drive Type** G: Heavy Duty P: Normal Duty
	S: Single-phase T: Three-phase		W: Wall Mounted

Refrences & Mechanical Data

درایو کنترل دور موتور

Range	Input Voltage	Commercial Reference	Heavy Duty G-type		Normal Duty P-Type		Dimensions(mm)			Mounting Dimensions (mm)					Mounting Hole Diameter (mm)	CAD Diagram
			Motor Power (kW)	Continuous Output Current (A)	Motor Power (kW)	Continuous Output Current (A)	W	H	D	W1	H1	D1	D2	D3	Ø	
BASIC	200-240V Single Phase	HAV-BA-2S0004G	0.4	2.4	-	-	80	150	136.5	68	138	133	-	-	5	(a)
		HAV-BA-2S0007G	0.75	4.5	-	-	80	150	136.5	68	138	133	-	-	5	
		HAV-BA-2S0015G	1.5	7.1	-	-	80	150	136.5	68	138	133	-	-	5	
		HAV-BA-2S0022G	2.2	9.8	-	-	106	200	148.5	94	188	144.6	-	-	6	(b)
	200-240V Three Phase	HAV-BA-2T-0007G	0.75	4.5	-	-	80	150	136.5	68	138	133	-	-	5	(a)
		HAV-BA-2T-0015G	1.5	7.1	-	-	80	150	136.5	68	138	133	-	-	5	
		HAV-BA-2T-0022G	2.2	9.8	-	-	106	200	148.5	94	188	144.6	-	-	5.5	(b)
		HAV-BA-2T-0030G	3	11.5	-	-	108	217	167	96	205	163	-	-	5.5	
	380-440V Three Phase	HAV-BA-4T0004G	0.4	1.5	-	-	80	150	136.5	68	138	133	-	-	5	(a)
		HAV-BA-4T0007G	0.75	2.3	-	-	80	150	136.5	68	138	133	-	-	5	
		HAV-BA-4T0015G	1.5	3.7	-	-	80	150	136.5	68	138	133	-	-	5	
		HAV-BA-4T0022G	2.2	5	-	-	80	150	136.5	68	138	133	-	-	5	
		HAV-BA-4T-0030G	3	6.7			106	200	148.5	94	188	144.6	-	-	5.5	(b)
		HAV-BA-4T0040G	4	8.8	-	-	106	200	148.5	94	188	144.6	-	-	6	
		HAV-BA-4T0055G	5.5	13	-	-	106	200	148.5	94	188	144.6	-	-	6	
EXPERT XS	200-240V Single Phase	HAV-XS-2S0007G	0.75	5	-	-	120	215	158	109	204	133	85	-	5.5	(c)
		HAV-XS-2S0015G	1.5	7.8	-	-	120	215	158	109	204	133	85	-	5.5	
		HAV-XS-2S0022G	2.2	10.8	-	-	120	215	158	109	204	133	85	-	5.5	
	200-240V Three Phase	HAV-XS-2T0007G	0.75	5	-	-	120	215	158	109	204	133	85	-	5.5	
		HAV-XS-2T0015G	1.5	7.8	-	-	120	215	158	109	204	133	85	-	5.5	
		HAV-XS-2T0022G	2.2	10.8	-	-	120	215	158	109	204	133	85	-	5.5	
		HAV-XS-2T0030G	3	11.5	-	-	120	215	158	109	204	133	85	-	6.5	
		HAV-XS-2T0040G	4	16.2	-	-	150	259	183	138	248	176	150	105	5.5	
		HAV-XS-2T0055G	5.5	20.3	-	-	150	259	183	138	248	176	150	105	5.5	
		HAV-XS-2T0075G	7.5	26.7	-	-	205	322	219	188	305	210	168	143	6.5	
		HAV-XS-2T0110G	11	39	-	-	235	370	237	218	350	230	200	145	7	
		HAV-XS-2T0150G	15	52.5	-	-	235	370	237	218	350	230	200	145	7	
		HAV-XS-2T0185G	18.5	62.4	-	-	305	490	270	200	470	235	207	-	10	(d)
		HAV-XS-2T0220G	22	73.6	-	-	305	490	270	200	470	235	207	-	10	
		HAV-XS-2T0300G	30	98.7	-	-	320	560	302	197	543	275	237	-	10	
		HAV-XS-2T0370G	37	121	-	-	320	560	302	197	543	275	237	-	10	
		HAV-XS-2T0450G	45	147	-	-	320	560	302	197	543	275	237	-	10	
		HAV-XS-2T0550G	55	188	-	-	355	678	307	240	659	257	257	-	11	
		HAV-XS-2T0750G	75	256	-	-	355	678	307	240	659	257	257	-	11	
		HAV-XS-2T0900G	90	308	-	-	450	900	372	300	875	345	300	-	12	
		HAV-XS-2T1100G	110	376	-	-	480	1070	412	-	-	400	313	-	-	(e)
		HAV-XS-2T1320G	132	451	-	-	480	1070	412	-	-	400	313	-	-	
		HAV-XS-2T1600G	160	547	-	-	525	1300	438	-	-	425	335	-	-	

Refrences & Mechanical Data

درایو کنترل دور موتور

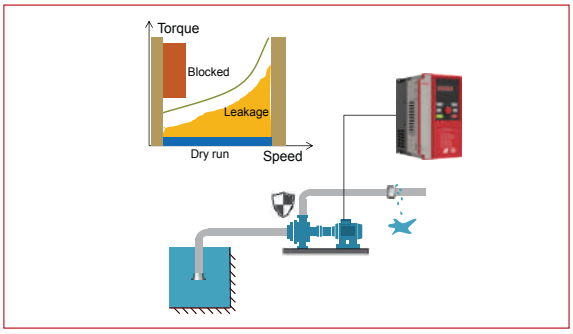
Range	Input Voltage	Commercial Reference	Heavy Duty G-type		Normal Duty P-Type		Dimensions(mm)			Mounting Dimensions (mm)					Mounting Hole Diameter (mm)	CAD Diagram
			Motor Power (kW)	Continuous Output Current (A)	Motor Power (kW)	Continuous Output Current (A)	W	H	D	W1	H1	D1	D2	D3	Ø	
EXPERT XS	380-440V Three Phase	HAV-XS-4T0007G	0.75	2.5	-	-	120	215	158	109	204	133	85	-	5.5	(c)
		HAV-XS-4T0015G	1.5	4.1	-	-	120	215	158	109	204	133	85	-	5.5	
		HAV-XS-4T0022G	2.2	5.5	-	-	120	215	158	109	204	133	85	-	5.5	
		HAV-XS-4T-0030G	3	6.7	-	-	120	215	158	109	204	133	85	-	5.5	
		HAV-XS-4T0040G-0055P	4	9.6	5.5	13	120	215	158	109	204	133	85	-	5.5	
		HAV-XS-4T0055G-0075P	5.5	13	7.5	17	120	215	158	109	204	133	85	-	5.5	
		HAV-XS-4T0075G-0110P	7.5	17	11	25	150	259	183	138	248	176	150	105	5.5	
		HAV-XS-4T0110G-0150P	11	25	15	32	150	259	183	138	248	176	150	105	5.5	
		HAV-XS-4T0150G-0185P	15	32	18.5	37	205	322	219	188	305	210	168	143	6.5	
		HAV-XS-4T0185G-0220P	18.5	37	22	45	235	370	237	218	350	230	200	145	7	
		HAV-XS-4T0220G-0300P	22	45	30	60	235	370	237	218	350	230	200	145	7	
		HAV-XS-4T0300G-0370P	30	60	37	75	305	490	278	200	470	270	235	207	10	(d)
		HAV-XS-4T0370G-0450P	37	75	45	90	305	490	278	200	470	270	235	207	10	
		HAV-XS-4T0450G-0550P	45	90	55	110	320	560	308	197	535	302	275	237	10	
		HAV-XS-4T0550G-0750P	55	110	75	157	320	560	308	197	535	302	275	237	10	
		HAV-XS-4T0750G-0900P	75	157	90	180	320	560	308	197	535	302	275	237	10	
		HAV-XS-4T0900G-1100P	90	180	110	214	355	678	320	240	659	307	257	257	11	
		HAV-XS-4T1100G-1320P	110	214	132	256	355	678	320	240	659	307	257	257	11	
		HAV-XS-4T1320G-1600P	132	256	160	307	355	678	320	240	659	307	257	257	11	
		HAV-XS-4T1600G-1850P	160	307	185	340	450	900	378	300	875	372	345	300	12	
		HAV-XS-4T1850G-2000P	185	340	200	385	450	900	378	300	875	372	345	300	12	
		HAV-XS-4T2000G-2200P	200	385	220	430	480	1070	412	-	-	400	313	-	-	(e)
		HAV-XS-4T2200G-2500P	220	430	250	465	480	1070	412	-	-	400	313	-	-	
		HAV-XS-4T2500G-2800P	250	465	280	525	525	1300	438	-	-	425	335	-	-	
		HAV-XS-4T2800G-3150P	280	525	315	590	525	1300	438	-	-	425	335	-	-	
		HAVXS-4T-3150G-3550P	315	600	355	645	525	1388	447	400	1357	447	440	350	-	
		HAVXS-4T-3550G-4000P	355	645	400	750	635	1577	482	450	1538	482	475	371	-	
		HAVXS-4T-4000G-4500P	400	750	450	850	635	1577	482	450	1538	482	475	371	-	
		HAVXS-4T-4500G-5000P	450	850	500	920	635	1577	482	450	1538	482	475	371	-	
		HAV-XS-4T2000G-2200P-W	200	385	220	430	480	1158	421	320	1127	414	329	-	12	(f)
		HAV-XS-4T2200G-2500P-W	220	430	250	465	480	1158	421	320	1127	414	329	-	12	
		HAV-XS-4T2500G-2800P-W	250	465	280	525	525	1388	447	400	1357	440	350	-	12	
		HAV-XS-4T2800G-3150P-W	280	525	315	590	525	1388	447	400	1357	440	350	-	12	
		HAVXS-4T-3150G-3550P-W	315	600	355	645	525	1388	447	400	1357	440	350	-	12	
		HAVXS-4T-3550G-4000P-W	355	645	400	750	635	1577	482	450	1538	475	371	-	16	
		HAVXS-4T-4000G-4500P-W	400	750	450	850	635	1577	482	450	1538	475	371	-	16	
		HAVXS-4T-4500G-5000P-W	450	850	500	920	635	1577	482	450	1538	475	371	-	16	
		HAVXS-4T-5000G-5600P	500	920	560	1050	950	1812	490.5	900	1845	388.5	276	154	-	(g)
		HAVXS-4T-5600G-6300P	560	1050	630	1150	950	1812	490.5	900	1845	388.5	276	154	-	
		HAVXS-4T-6300G-7100P	630	1150	710	1350	950	1812	490.5	900	1845	388.5	276	154	-	
		HAVXS-4T-7100G-8500P	710	1350	850	1630	1200	1900	580.5	1150	1939	510	402.5	307	-	(h)
		HAVXS-4T-8500G	850	1630	-	-	1200	1900	580.5	1150	1939	510	402.5	307	-	

PUMP MANAGEMENT

کنترل دور پمپ

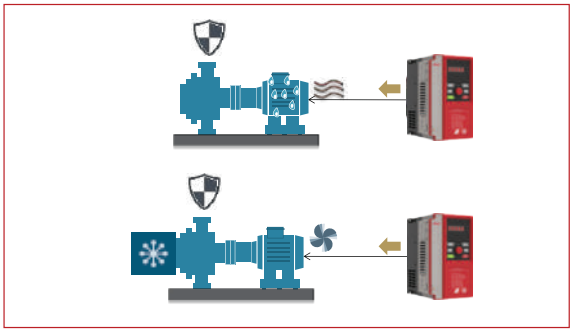
ویژگی‌ها و مزایای خاص کنترل دور پمپ

حفاظت‌های ویژه پمپ



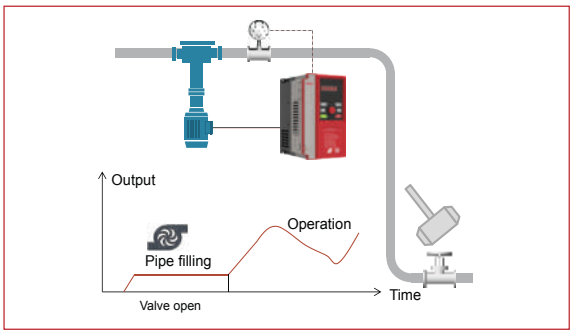
- حفاظت در برابر خشک کار کردن پمپ
- قطع پمپاژ آب در صورت نبود آب
- افزایش طول عمر پمپ
- حفاظت در برابر نشتی یا شکستگی لوله
- حفاظت در برابر گرفتگی لوله
- حفاظت از پمپ در برابر بارهای غیرعادی

حفاظت دربرابر یخ‌زدگی و رطوبت



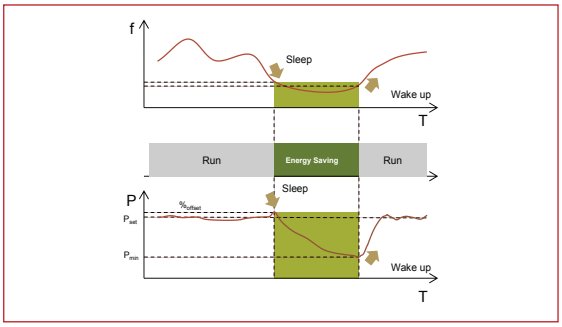
- موتور را به آرامی در حال حرکت نگه می‌دارد تا از یخ زدن آب در داخل پمپ جلوگیری نماید.
- موتور را گرم نگه میدارد تا رطوبت و شبنم به موتور آسیب نرساند.

حفاظت اثر چکشی



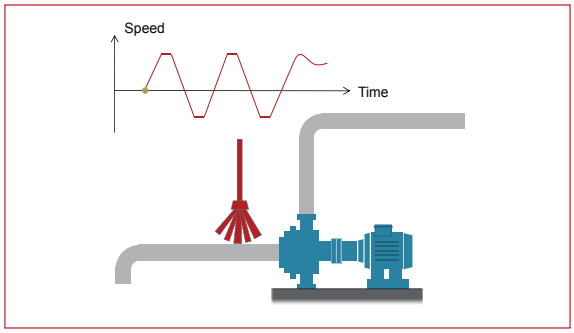
- هنگام خالی بودن لوله جریان آب را کنترل می کند، بنابراین اثر چکشی را در مرحله شروع حذف می نماید.
- " اثر چکشی": در مرحله شروع، آب هجومی با سرعت بالا می تواند به پمپ آسیب جدی بزند که به عنوان اثر چکشی شناخته می‌شود.

حالت کنترل PID



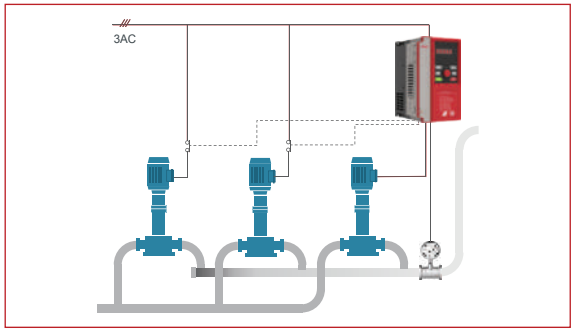
- توقف و استارت مکرر پمپ باعث هدر رفتن انرژی و استهلاک پمپ می شود.
- با افزایش فشار داخل لوله از مقدار تنظیم شده، PID پمپ را به حالت خواب تغییر می‌دهد.
- اگر فشار داخل لوله کمتر از کمترین فشار مورد نیاز تعیین شده توسط کاربرباشد، PID پمپ را بیدار می‌کند.
- PID با حالت خواب به صرف ه جویی بیشتر در انرژی و افزایش عمر پمپ کمک می‌کند.

پاک‌سازی پمپ



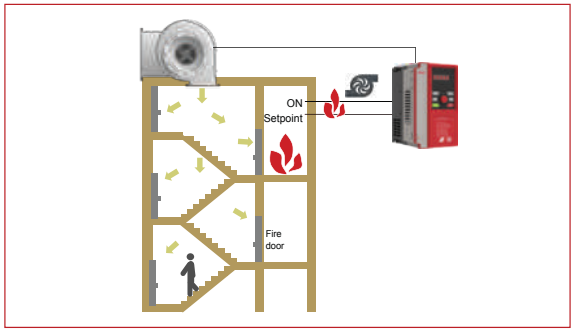
- در کاربری تصفیه آب، گرفتگی پمپ باعث کاهش راندمان می‌شود.
- با عملکرد پاکسازی پمپ، گرفتگی به صورت خودکار توسط درایو رفع می‌گردد.
- این ویژگی باعث کاهش هزینه های نگهداری می شود.

کنترل چند پمپ



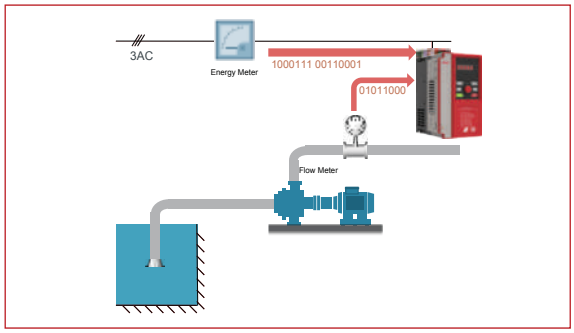
- کنترل سه پمپ با کارت ورودی/خروجی توسط کنترل کننده PID
- راه‌اندازی و توقف نرم هر پمپ جهت اطمینان از بهترین عملکرد
- کاهش هزینه های بهره برداری

حالت آتش‌سوزی



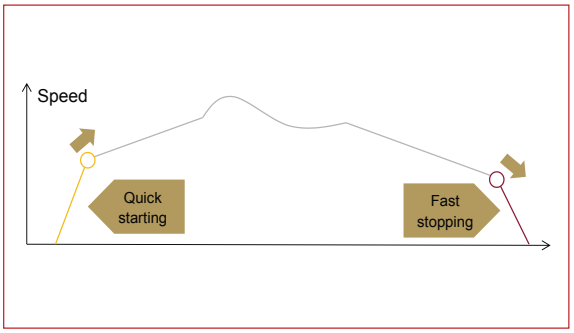
- فن های اصلی با تمام توان بدون توجه به پارامترهای حفاظتی شروع به حرکت می‌کنند.

محاسبه دبی و انرژی



- محاسبه دبی و انرژی بدون سنسور خارجی

شیب دوگانه



- قابلیت تنظیم شیب دوگانه برای مرحله START و STOP پمپ
- افزایش طول عمر پمپ

Soft Starter

سافت استارتر

سافت استارتر

Himel Soft Starters

Range		HASBS	HASXS
Applications		Controlled acceleration/decelereation of simple and complex machines	
Design			
Power Range	Three Phase 380...440V	11...600kW	
Drive	Control Type	Current limit, voltage ramp, voltage ramp + current limit	
Functions	Bypass	Need to install externally	Integrated
	Operation control mode	Keypad/external terminals/RS485 Modbus communication	
	Start mode	Current limit/voltage limit/current + voltage limit	
	Adjustable Acceleration/Decceleration time	√	√
	Start delay	√	√
	Emergency stop	√	√
	Current Limit function	√	√
	Initial voltage setting	√	√
	No/Light load detection	Protects against accidents such as belt tripping	
	Auto-restart	√	√
	Fault signal	Relay output - AC 250V 5A, DC 30V 5A	
	Multifunction relay output	Start delay, start, running, stop, complete stop,restart	
	Analog output	0~20mA / 4~20mA, optional	
	Protections	Overcurrent, overload, overheat, phase imbalance, phase-loss, light load, external fault	
	Alarms	Emergency shutdown, light load and restart	
Keypad		Pluggable	
Working Conditions	Rated insulation voltage	660V	
	Rated impulse withstand voltage	4kV	
IP rating	IP20	11 to 55kW	-
	IP00	75 to 600kW	11 to 600kW
Environment	Operation frequency	≤ 12 times/h	
	Ambient temperature	-10°C~ 40°C(Derating above 40°C)	
	Storage temperature	-20 ~ 65	
	Ambient humidity	Max. 90 % RH (no condensation)	
	Altitude	< 1,000 m (Deration above 1,000 m)	
	Vibration	< 5.9m/s² (=0.6g)	
	Type	No corrosive/inflammable gas, oil mist, dust or others	
Cooling Method	Natural air cooling	11 to 600kW	11 to 75kW
	Forced air cooling	-	93 to 600kW

سافت استارتر

References and Dimensions

Range	Input Voltage	Himel reference	Motor Power (kW)	Motor Power (HP)	Rated Output Current (A)	Dimensions(mm)			Mounting Dimensions (mm)					Mounting Hole Diameter (mm)	CAD Diagram
						W	H	D	W1	H1	D1	D2	D3	Ø	
HASBS	380-440V Three Phase	HASBS4T0110G	11	15	25	160	265	164	145	220	67	10	111	8	(a)
		HASBS4T0150G	15	20	32	160	265	164	145	220	67	10	111	8	
		HASBS4T0185G	18.5	25	37	160	265	164	145	220	67	10	111	8	
		HASBS4T0220G	22	30	45	160	265	164	145	220	67	10	111	8	
		HASBS4T0300G	30	41	60	160	265	164	145	220	67	10	111	8	
		HASBS4T0370G	37	50	75	160	265	164	145	220	67	10	111	8	
		HASBS4T0450G	45	61	90	160	265	164	145	220	67	10	111	8	
		HASBS4T0550G	55	75	110	160	265	164	145	220	67	10	111	8	
		HASBS4T0750G	75	102	152	280	534	255	230	430	98	44	180	10	(b)
		HASBS4T0900G	93	127	176	280	534	255	230	430	98	44	180	10	
		HASBS4T1100G	110	150	210	280	534	255	230	430	98	44	180	10	
		HASBS4T1320G	132	180	253	280	534	255	230	430	98	44	180	10	
		HASBS4T1600G	160	218	300	280	534	255	230	430	98	44	180	10	
		HASBS4T2000G	200	272	380	310	594	255	265	475	98	44	180	10	
		HASBS4T2500G	250	340	480	310	594	255	265	475	98	44	180	10	
		HASBS4T3200G	320	435	600	310	594	255	265	475	98	44	180	10	
		HASBS4T4000G	400	544	750	416	740	275	375	555	106	44	200	10	
		HASBS4T4500G	450	612	892	416	740	275	375	555	106	44	200	10	
		HASBS4T5000G	500	680	930	416	740	275	375	555	106	44	200	10	
		HASBS4T6000G	600	816	1100	416	740	275	375	555	106	44	200	10	

METERNIG

تجهیزات اندازه‌گیری

METERING

پاور متر

Standard: IEC60051

Technical Parameters			
Digital Power Meters			**HP606**
Input	Network system		Single-phase &Three-phase
	Voltage	Overload	Continuous: 1.2×Un; Instantaneous: 2×Un for lasting 1s
	Current	Overload	Continuous: 1.2×In; Instantaneous: 10×In for lasting 5s
	Frequency		45~65Hz
Function module	Switch output		Output of two-loop passive relay, contact capacity: 3A/30VDC， 3A/250VAC； Values of upper and lower limit alarm, hysteresis can be set as what you want.
			Output method: remote control (used as switch output) or off-limit alarm
	Electrical energy pulse		Two-loop electrical pulse output
	Electrical energy pulse constant		Active power: 8000imp/kwh Reactive power: 8000imp/kvarh
	Communication	Method	RS485
		Protocol	MODBUS-RTU
		Baud rate	1200, 2400, 4800, 9600 bps
		Parity bit	Odd parity, even parity, no parity
Display	Display mode		(1) Long lifecycle and highlighted LED display; (2) Wide viewing LCD display
Accuracy class	Voltage, current, frequency, active power, power factor		Class 0.5
	Reactive power		Class 1.0
IP protection	IP54		
Auxiliary power supply	Range		AC220V
	Power consumption		＜5VA
Standard	IEC 60068-2, IEC 61010-1, IEC 60529, IEC 61000-4, IEC 61557-1		

Metering

ترانسفورماتور جریان (CT)

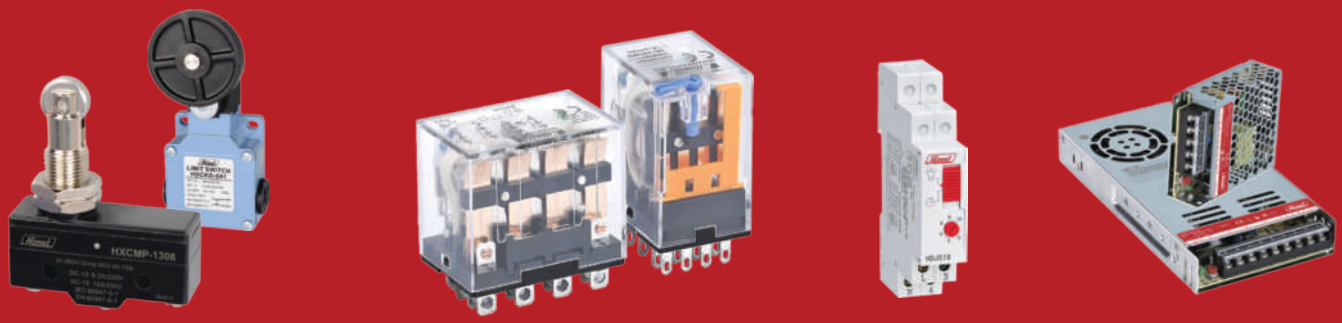
Standard: IEC60044-1

CE

Rating Table

Busbar diameter (mm)	Φ30	Φ40	Φ50	Φ60	Φ80	Φ100	Φ120
Rated primary current to select (A)	30 50 75 100 150 200	250 300 400 500	300 400 500 600 750 800 1000	500 600 750 800 1000 1200 1500	600 750 800 1000 1200 1500 2000 2500	600 750 800 1000 1200 1500 2000 2500 3000	1500 2000 2500 3000 4000 5000

Technical parameters	
Current Transformers	**HLMK**
Rated primary current	30A-5000A
Rated secondary current	5A
Maximum rated voltage	0.66kV
Accuracy class	0.5, 1.0
Short time thermal current	Ith=100Ih
Security coefficient security coefficient	FS<5
Standard	IEC 60044-1



SIGNALING & CONTROL

تجهیزات مدار فرمان

رله مینیاتوری

Standard: IEC60947-4

Range Presentation

HDZ9 is Himel range of Miniature Relays designed to implement control signal conversion to low power output.
They can be widely used for industrial control applications

Features

- Rated current: 3A, 5A, 10A
- Pole: 2-pole, 3-pole, 4-pole
- Maximum rated operating Voltage: 690V
- Rated operating frequency: 50/60Hz
- Coil specification: DC: 6V~220V; AC: 6V~380V
- New specification: Rotary push button

Online Content

HDZ9

Selection Code

Range name	Current specification	Poles	AC/DC	LED	Coil voltage	Type
HDZ9	**05**	**2**	**D**	**L**	**M**	**R**
HDZ9	**03:** 3A **05:** 5A **10:** 10A	**2:** 2P **3:** 3P **4:** 4P	**Default:** AC **D:** DC	**Default:** None **L:** LED	**T:** 6V **J:** 12V **B:** 24V **C:** 36V **E:** 48V **F:** 110V **S:** 127V **M:** 220V **N:** 230V **U:** 240V **Q:** 380V	**Default:** Classic **R:** Rotary button

Technical Parameters

Miniature relays		**HDZ9**						
Type		3A	5A			10A		
		4P	2P	3P	4P	2P	3P	4P
Max load current		3A	5A			10A		
Max operation voltage		250VAC 28VDC						
Contact resistance		≤100mΩ						
Contact material		Silver Alloy						
Electrical endurance		≥100000 times (1800 times/h)						
Mechanical endurance		≥10000000 times (18000 times/h)						
Actuation voltage (23℃)		DC: ≤75% (rated voltage), AC: ≤80% (rated voltage)						
Release voltage (23℃)		DC: ≥10% (rated voltage), AC: ≥30% (rated voltage)						
Maximum voltage (23℃)		110% (rated voltage)						
Insulation resistance		≥100MΩ (500VDC)						
Coil power		DC: 0.9 W AC:1.2VA						
Actuation time (rated voltage)		≤15ms						
Release time (rated voltage)		≤10ms						
Withstand voltage	polar- contacts	1500VAC/1min (residual current is 1mA)						
	bipolar - contacts	1200VAC/1min (residual current is 1mA)						
	coil -contacts	1500VAC/1min (residual current is 1mA)						
Ambient temperature		-25℃ ~+55℃						
Ambient humidity		35%~85%RH						
Atmospheric pressure		86~106KPa						
Installation method		Plug-in						
Weight		30g						
Coil voltage		DC: 6V~220V; AC: 6V~380V.						
Certificate		CB, CE, SEMKO						

FINAL DISTRIBUTION

تایمر

IEC 60947-5

Range Presentation

HDJS18 is Himel range ofTime Relay and it provides:
- Switch-off Delay
- Switch-on Delay

It is widely used for staircase lamps on automatic switch-off control according to scheduled time.

Features

- Small size;
- Elegant appearance;
- High accuracy of time delay;
- High capacity of contacts;
- Strong anti-interference ability;
- Easy for installation.

Online Content

HDJS18

Selection Code

Model	Time-delay type	Time delay	Control voltage	Voltage type
HDJS18	**A**	**10S**	**220**	**AD**
HDJS18: Product name	**A:** off delay **B:** switch-on delay	**10S:** 1-10s **120S:** 12-120s **480S:** 48-480s	**220:** 220V **24:** 24V	**Default:** AC **AD:** AC/DC

Technical Parameters		
Time Relays		**HDJS18**
Rated conventional thermal current Ith (A)		10
AC-15	Ue (V)	380/240
	Ie (A)	1.9/3
DC-13	Ue (V)	24
	Ie (A)	1.1
Control voltage Us (V)		AC: 220, 110 (customized), 380 (customized)
Repetitive error		AC/DC: 24
Time delay		≤5%
Mechanical durability (time)		5s, 10s, 30s, 60s, 120s, 180s, 360s, 480s
Electrical durability (time)		≥1 million
Time-delay method		≥100 thousand
Standard		Switch-on delay, off delay
Ambient temperature		IEC 60947-5
Range of operating control voltage		-5°C~+40°C
Altitude		85%~110% Us
Installation category		≤2000m
Pollution class		II
		3

منبع تغذیه

Standard: EN 61558-1

Selection Code

Model	Type	Rated Power	Output Voltage
HDK	**US**	**50**	**12**
نصب کف خواب	**US:** Ultra-thin type	**35:** 35W **50:** 50W **75:** 75W **100:** 100W **150:** 150W **200:** 200W **350:** 350W	**05:** 5V **12:** 12V **24:** 24V **36:** 36V **48:** 48V
نصب ریلی	**NS:** Narrow surface type	**75:** 75W **120:** 120W **240:** 240W **480:** 480W	**12:** 12V **24:** 24V **36:** 36V **48:** 48V (for 240W and 480W, only 24V and 48V are available)

Technical Parameters		
Product Type	کف خواب	ریلی
AC Input Voltage	35W, 50W, 75W, 100W, 150W: 100~264 V (actual input voltage range: 90~264 V) 200W, 350W: 85~132 V / 176~264 V (can be switched)	100-240VAC
Voltage Accuracy	±1%	±1%
Ripple and Noise	≤1% peak value (100mVp-p standard)	1%(mVp-p) of rated output voltage
Regulation range of Output Voltage	±10%	±10%
Voltage Tolerance	±1%	±1%
Overload Protection	110%-150%	110%-150%
Load Regulation Rate	±1%	±1%
Leakage Current	＜ 2mA240VAC	＜ 2mA240VAC
Efficiency	O/5V: ⩾ 80% O/12V: ⩾ 85% O/24V, 36V: ⩾ 86% O/48V: ⩾ 88%	88%
Standard	EN61558-1	EN61558-1

فن

Standard: EN 55032:2015; EN61000-3-2:2014; EN61000-3-3:2013;

Range Presentation:

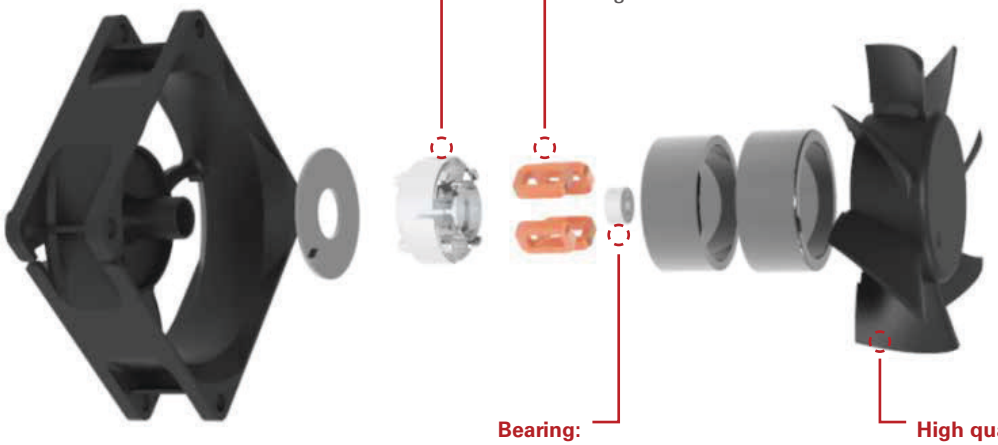
HICF series axial fan is designed for cooling and air ventilation for control panels, cabinets, machines, electric appliance, EV cars, etc.
The products meet the requirements of 24h continuous working condition.

Features:

- With good quality and high strength shell, the HICF series axial fan is temperature, break and corrosion resistant.
- Equipped with high quality motor, the axial fan has large air volume, low noise and good heat dissipation effect.
- High quality copper coil, good conductivity, low power consumption, low heating.
- Anti-reverse wire connection protection - safer to use.

Silicon steel:
Super thick steel, ensure stability of the fan

Cooper wire:
High quality cooper wire, lower temperature rise, long mechanical life



Bearing:
Dual-ball bearing: High quality dual-ball bearing motor, low friction, high efficiency and longer life endurance
Oil bearing motor: Low cost, vibration absorption and low noise

High quality PBT balde:
Environment friendly and fireproof PBT blade, excellent structure stability and large air volume.

Selection Code

Range name	Width	Height	Voltage	Bearing	Connection
HICF	**280**	**80**	**A2**	**B**	**L**
HICF	**40:** 40x40mm **50:** 50x50mm **80:** 80x80mm **92:** 92x92mm **120:** 120x120mm **160:** 160x160mm **180:** 180x180mm **200:** 200x200mm ... **Special:** **170:** 172x150mm	**15:** 15mm **20:** 20mm **25:** 25mm **38:** 38mm **50:** 50mm **60:** 60mm **70:** 70mm	**A2:** AC220V **D2:** DC24V **D1:** DC12V ...	**B:** ball **S:** lube	**L:** cable-out

لیمیت سوئیچ

Standard: EN60947-5-1

Range Presentation

Limit Switches are basic switches that are used to protect machine and device.
Different type of limit switches are available e.g. heat, cold, or corrosion resistant and other high-precision models as well.

Features

- Double circuit type of limit switch
- Compact size, IP65/66 water-proof and oil-proof construction
- Built-in contact box has double-spring and long mechanical life
- Smooth operation with larger over travel distance
- Various types for different application

Selection Code

Range name	Series	Type	Head
HXC	**KM**	**8108**	**E**
Limit Switch	**KM:** Metal box **KP:** Plastic box **KD:** full-metal box **MP:** Micro switch, plastic box	**Selection of trigging head type**	**E:** Eco type

Technical Parameters

series	HXCKM	HXCKP	HXCKD	HXCMP
Operation speed	5mm-0.5m/s	5mm-0.5m/s	5mm-0.5m/s	0.05mm-1m/s (Plunger type)
Operating frequency	Electical: 30 operations/min	Electical: 30 operations/min	Electical: 30 operations/min	Electical: 20 operations/min
Contact resistance	25mΩ max. (initial value)	25mΩ max. (initial value)	25mΩ max. (initial value)	15mΩ max. (initial value)
Insulation resistance	100mΩ min. (below 500VDC)	100mΩ min. (below 500VDC)	100mΩ min. (below 500VDC)	100mΩ min. (at 500VDC)
Vibration	10-55Hz,1.5mm double amplitude	10-55Hz,1.5mm double amplitude	10-55Hz,1.5mm double amplitude	(*10 to 20Hz): 1.5 Vibration amplitude action duration: 10 to 55Hz
Shock	Mechanical durable: 1, 000m/Sec2 (about 100G'S)	Mechanical durable: 1, 000m/Sec2 (about 100G'S)	Mechanical durable: 1, 000m/Sec2 (about 100G'S)	Mechanical durable: 1, 000m/Sec2 (about 100G'S)
Malfunction	300m/Sec2 (about 30G'S)	300m/Sec2 (about 30G'S)	300m/Sec2 (about 30G'S)	300m/Sec2 (about 30G'S)
Ambient temperature	Using:-20~+70°C (With no icing)	Using: -20~+70°C (With no icing)	Using: -20~+70°C (With no icing)	Using: -20~+80°C (With no icing)
Humidity	<95% RH	<95% RH	<95% RH	General purpose type: 85% RH max. Sealed type: 95% RH max.
Electrical life	500,000 operations above	500,000 operations above	500,000 operations above	500,000 operations above
Protection level	IP65	IP65	IP66	IP65(with cap)
CE	YES	YES	YES	YES

PANEL COMPONENTS

شستی و سلکتور

Standard: IEC 60947-5-1

Selection Code

Range Name	Type	Contacts
HLAY5	**BE10**	**1**

HLAY5BE10: Contact blocks

1: 1NO
2: 1NC
3: 2NO
4: 2NC
5: 1NO+1NC

Technical Parameters

Range name			HLAY5					
Usage mode			Rated value					
AC-15	Rated voltage (Ue) Rated current (Ie)	V A	380 2			220 3.3		
DC-13	Rated voltage (Ue) Rated current (Ie)	V A	220 0.5			110 1.1		
Mechanical endurance		10^5	10(Flush, Mushroom, Illuminated type)					
			1(Other types)					
Electric endurance		10^5	AC: 10 / DC: 2 (Flush,Mushroom type)					
			0.5 (Other types)					
Rated themal current (Ith)		A	6					
Rated impulse withstand voltage (Uimp)		V	6000					
Degree of protection			IP40 (IP65 with protective cover)					
Illuminated pushbutton								
Power supplier voltage		V	6	12	24	110	220	380
LED			√	√	√	√	√	√

Environment

Temperature	-5°C to +40°C
Relative humidity	⩽50% (40°C) 90% (20°C)
Altitude	⩽2000m
Pollution degree	3

سیگنال

Standard: IEC 60947-5-1

Range Presentation

HLD11 is Himel range of Pilot Lights designed for:
- Pilot signal and alarm signal
- Emergency signals and other instructions incidents signals

Features

- Compact design, all-in-one construction
- LED light provides long life, low consumption, high brightness
- IP65 front-of-panel high protection against ingress of solid objects, dust, and water
- Excellent resistance to mechanical shock and vibration
- Anti-interference, no improper indication of residual lights

Online Content

HLD11

Selection Code

Range name	Drilling or cut-out for mounting	Type	Step-down type	Shape of head	Rated voltage	Color
HLD11	**22**	**D**	**4**	**1**	**M**	**4**
	22: Ø22	**A:** Full cover head & long terminal	**2:** Resistance type **4:** Capacitance type	**1:** Circular	**T:** AC/DC 6V **J:** AC/DC 12V **B:** AC/DC 24V **F:** AC/DC 110V **M:** AC/DC 220V **N:** AC 230V **Q:** AC 380V	**7:** White **3:** Green **4:** Red **5:** Yellow **8:** Blue
	22: Ø22	**B:** Half cover head & long terminal	**2:** Resistance type **4:** Capacitance type	**1:** Circular	**T:** AC/DC 6V **J:** AC/DC 12V **B:** AC/DC 24V **F:** AC/DC 110V **M:** AC/DC 220V **N:** AC 230V **Q:** AC 380V	**7:** White **3:** Green **4:** Red **5:** Yellow **8:** Blue
	22: Ø22	**C:** Full cover head & short terminal	**2:** Resistance type **4:** Capacitance type	**1:** Circular	**T:** AC/DC 6V **J:** AC/DC 12V **B:** AC/DC 24V **F:** AC/DC 110V **M:** AC 220V **N:** AC 230V **Q:** AC 380V	**7:** White **3:** Green **4:** Red **5:** Yellow **8:** Blue
	22: Ø22	**D:** Half cover head & short terminal	**2:** Resistance type **4:** Capacitance type	**1:** Circular	**T:** AC/DC 6V **J:** AC/DC 12V **B:** AC/DC 24V **F:** AC/DC 110V **M:** AC 220V **N:** AC 230V **Q:** AC 380V	**7:** White **3:** Green **4:** Red **5:** Yellow **8:** Blue

Technical Parameters

Pilot Lights	HLD11	
Rated voltage	AC/DC (Resistance type) A2,B2: 6V,12V,24V,36V,48V,110V,220V, C2,D2: 6V,12V,24V,36V,48V,110V	AC (Capacitance type) A4,B4,C4,D4: 220V,230V,380V
Rated current (mA)	≤50	≤20
Working life (H)	30000	
Brightness of light (cd/m^2)	≥40	
Power frequency withstand voltage	2500V AC 1min	
Degree of protection	IP65	

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Founded in spain in 1958