DCL / DUCR / DOCRD-S / DOCRD-H

3090-A0300-06

⚠ 위험 / DANGER / 危险

제품설치 및 보수전에 모든 전원을 차단하여 주십시요.
이들 지침을 따르지 않을시
심각한 상해 또는 사망의 원인이 됩니다.

HAZARD OF ELECTRIC SHOCK, EXPLOSION,OR ARC FLASH
Disconnect all power before servicing equipment.
Failure to follow these instructions will result in death or serious injury.

电击、爆炸或电弧危险
在检修设备之前，请断开所有电源.
若违背这些说明，
则可能会导致严重的人身伤害甚至死亡.

이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.

Help & Download

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Customer Care Center
82-2-1588-2630
Customercare.kr@schneider-electric.com

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Seoul,South Korea.
首尔特别市麻浦区盛岩路189, 中小企业DMC大楼 14楼

■ 모든 전기적인 설치 및 보수는 전기기술자의 의해서 작업되어야 합니다.
Authorized technical engineers only for installation, maintanance or repair.
所有电器的安装和维护必须由获得认证的电气技工操作完成.

■ 모터특성에 맞게 시간과 정격전류 설정해야 하며,
잘못된 설정으로 모터가 소손될수 있습니다.
Adjust the settings according to the electric characteristics of a motor, an inappropriate setting may cause permanent damage on the motor.
以电机特性来设定好跳闸时间和额定电流，若误设定会造成电机烧损害.

■ 고조파 함유율이 IEC규정치 이상인 현장에서는 반드시 적절한 외부 필터를 설치하여야 하며, 미설치시 제품손상으로 인해 고장 및 오작동 될수 있습니다.
External filter should be installed to reduce harmonics in an environment where the AC power contains excessive harmonic than IEC standard.
No installation in the site may result in accuracy problem, abnormal operation and mal-function.
在于高周波含有IEC规定以上的现场上，需配备外部滤波器，
未配备滤波器会因为产品 受到干扰而产生误动作.

■ 인버터 또는 SCR 제어부하는 당사에 문의 하시기 바랍니다.
Please contact Customer Care center when our product is installed for devices containing SCR such as inverters.
若有变频器、SCR来控制负荷，请咨询到本公司.

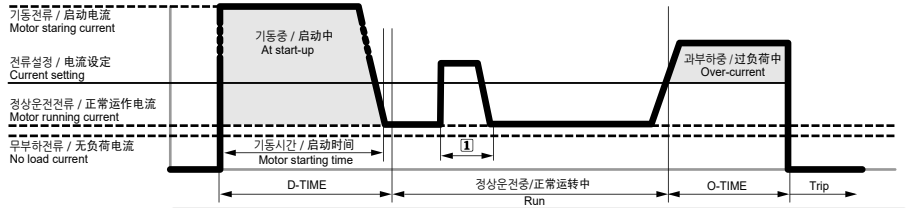
■ 제품의 안정적인 사용을 위해 주기적으로 작동상태를 확인하십시오.
Check periodically whether our product works properly by pressing and holding the test button.
为了保证正常动作，请定时确认产品动作状态.

■ 제품 하자 무상보증기간은 당사의 물류센터 출하 후 18개월입니다.
18 months warranty from the date of shipment.
我公司对于物流中心出库后18个月内出现问题产品进行免费维修.

■ 용어 정의 / Terminology / 用语定义
Control Power / 제어전원 / 控制电源, Trip / 과부하동작 / 超负荷运转
LOAD / 전류설정 / 电流设定, TEST / 시험 / 测试, RESET / 복귀 /复位
O-TIME(Operating Time) / 동작지연시간설정 / 跳闸延迟时间设定
R-TIME(Auto Reset Time) / 복귀시간설정 / 复位时间设定

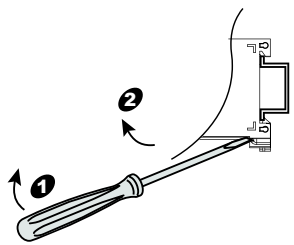
■ 설정 방법 / Setting instruction / 设定方法
O-TIME : 과부하 동작시간으로 모터 단속,연속시간 확인하여 설정.
Over-current run time. Set less than the motor's endurance time with over-current.
过负荷动作时间来确定电机长短时间
LOAD : 모터의 정격전류(FLC)>110% 또는 운전전류<105%~120%.
Set over 110% of the motor's rated current or under 120% of its operating current.
电机的额定(FLC)电流>110%或者运转电流<105%~120%

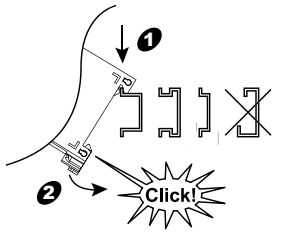
■ TEST 방법 / TEST instruction / 测试方法
TEST 버튼을 누르면 적색 LED가 켜지고 설정된 O-TIME이 경과된 후 출력접점이 동작하면 정상.
Reset Button을 누르거나 Control Power를 차단하면 즉시 복귀함.
With Test button held down, the red LED is on and the product will trip after O-TIME.
The relay will be de-energized when RESET button is pushed or the control power is disconnected.
按TEST按钮, 就亮起红色LED灯, 经过O-TIME后, 输出接点动作, 这属于正常.
按下 Reset Button 或切断 Control Power 则立即复位.



1 과전류가 감지되었으나 설정된 O-Time이내에서 동작하지 않음. The trip is deactivated until the over-current run time is longer than O-time.
虽然感知过电流，如果比设定的 O-Time 时间短 则不会动作.

☐ 설치방법 / Installation / 安装方法





☐ 주문방법 / How to order / 订购方法

①	②	③	④	⑤	⑦
D C L -	7 0	R	Y	M	Q

①	⑥	④	②
D O C R D -	H A L L	B	4 H

①	DCL	전자식 직류 과전류 계전기 / Electronic DC Over-current Relay
	DUCR	전자식 직류 저전류 계전기 / Electronic DC Under-current Relay
	DOCRD	전자식 직류 과전류 계전기 / Electronic DC Over-current Relay
	DUCRD	전자식 직류 저전류 계전기 / Electronic DC Under-current Relay

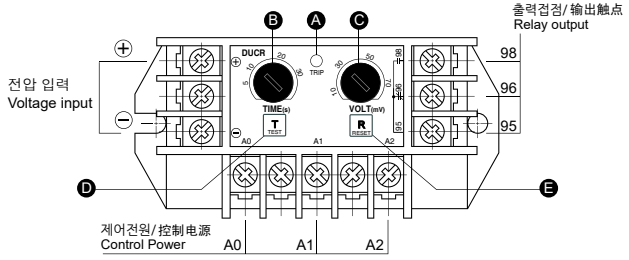
No	Item	Model	Type	전류범위 / Current Range / 电流范围
②	표준형 Standard 标准型	DCL DUCR	70	10~70mV
		DOCRD DUCRD		0.1~240A for SHUNT
				5~360A for HALL
			4H	5~480A for HALL
③	접점상태 Relay output 触点状态	DCL DUCR	N	95-98 Closed when powered (Energized) 정상시 여자
			R	95-96 Closed when powered (De-energized) 정상시 소자

④ 제어전원 / 控制电源 Control Power	Y7 AC 110V/220V	V7 AC 380V/440V	B AC/DC 24V	Z7 AC/DC 85-250V
DCL	○	○	○	
DUCR	○	○	○	
DOCRD			○	○
DUCRD			○	○

⑤	복귀 Reset 复位	DCL DUCR	M	Manual
			R	Auto
⑥	Sensor	DOCRD DUCRD	HALL	Sensor의 정격 전류범위 참조
			SHUNT	
⑦			Q	Export

DCL
DUCR

☐ 외관 / Description / 외观



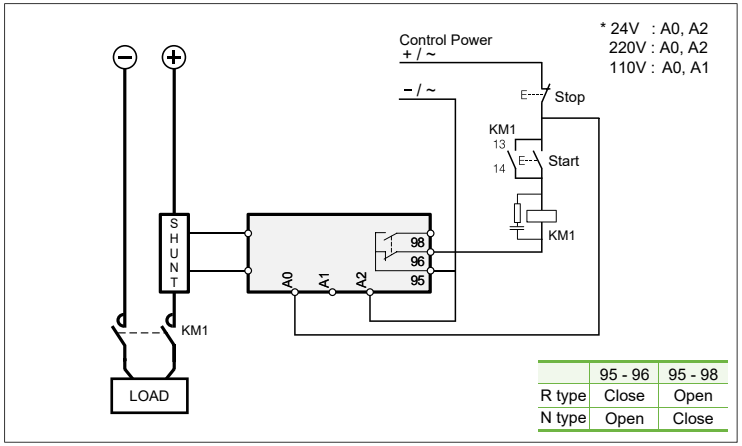
	A	B	C	D	E
DCL	LED(TRIP)	TIME	LOAD	TEST	RESET
DUCR	LED(TRIP)	TIME	VOLT	TEST	RESET

LED 동작표시 / LED Indication / 动作显示

	DCL / DUCR
	TRIP(Red)
정상운전 / Normal operation / 正常运转	Off
과부하 / Over-current / 超负荷	On
이상 동작시(트립) / Trip / 异常动作之时	On

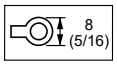
☐ 결선도 / Wiring / 接线图

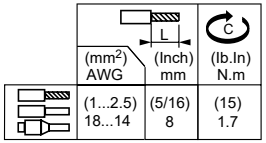
DCL / DUCR



	95 - 96	95 - 98
R type	Close	Open
N type	Open	Close

※ 제어전원은 절연된 전원 사용.
It is highly recommended to use an isolated control power.
控制电源，请使用结缘

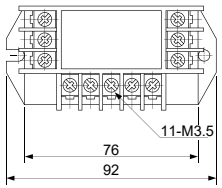


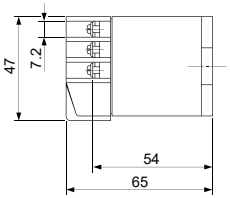


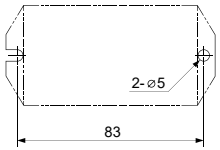
(mm²) AWG	(Inch) mm	(lb.In) N.m
(1...2.5) 18...14	(5/16) 8	(15) 1.7

☐ 외형치수 / Dimensions / 外形尺寸

DCL / DUCR





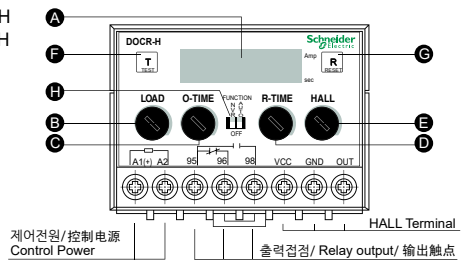


MOUNTING HOLE SIZE

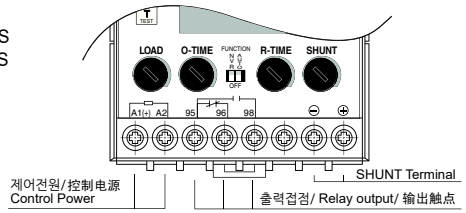
DOCRD-S / DOCRD-H
DUCRD-S / DUCRD-H

☐ 외관 / Description / 外观

DOCRD-H
DUCRD-H



DOCRD-S
DUCRD-S



	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ	Ⓗ
DOCRD-H DUCRD-H	FND	LOAD	O-TIME	R-TIME	HALL	TEST	RESET	Function SW
DOCRD-S DUCRD-S	FND	LOAD	O-TIME	R-TIME	SHUNT	TEST	RESET	Function SW



DIP Switch	ON	OFF
NVR	N Type Normally Energized	R Type Normally De-Energized
AUTO	Auto Reset	Manual Reset

N type : Normally Energized (정상시 여자상태)
R type : Normally De-Energized (정상시 소자상태)

☐ 동작원인표시/ Trip Cause Indication/ 动作原因指示

o 110	과전류 Over current 过电流	과전류 감지하여 동작 표시 / 运转中感知相的过电流. Relay displays a trip, caused by over-current which has been detected
u 70	저전류 Under current 低电流	저전류 감지하여 동작 표시 / 运转中感知相的低电流. Relay displays a trip, caused by under-current. which has been detected

Note

-조작전원과 부하전원이 동일할 경우에는 SHUNT를 (-)전원측에 연결해야함.
- 서지에 의해 조작전원부가 소손될 수 있으므로 퓨즈 설치가 바람직함.
- DC전원이 반파 또는 고조파가 함유된 전원에서는 전류편차가 발생할 수 있음.
- SHUNT는 +,-극성과 HALL소자의 관통방향에 주의해야함.
- HALL소자는 단극성용이므로 HALL소자 선정시 주의요망.

- If the power is equal to the load voltage, SHUNT should be connected to the negative polarity
- Installing a fuse is highly reconmmended since an electrical surge might cause fatal demage on the control power module.
- Current differential might occur with a DC power containing ripple or harmonic noise
- Cautious are the polarity of SHUNT and and the direction of HALL when they are installed.
- When you purchase a HALL sensor, please check carefully that its polarity is mono.

- 如果操作电源和负荷电源一致时，应将SHUNT连接到(-) 电源侧.
- 操作电源有可能被浪涌烧损，因此应安装熔断器.
- 在包含半波或高频波的电源，DC电源会发生电流偏差.
- SHUNT应注意+, -极以及HALL元件的贯穿方向.
- HALL元件是单极性的，因此选择HALL元件时予以注意.

☐ 설정방법 / Setting / 设置

LOAD
LOAD Knob를 천천히 시계 반대 방향으로 돌리면 FND상태에 "c"자와 "숫자"가 표기되어 설정치를 알수 있음.
As the LOAD knob is rotated, the 7 segments displays LOAD set with the initial code 'c'
若将LOAD Knob以逆时针方向慢慢转转，在FND状态下显示“c”和″数字“，可确认设定值.

O-TIME
O-TIME Knob를 천천히 시계 반대 방향으로 돌리면 FND상태에 "t"자와 "숫자"가 표기되어 설정치를 알수 있음.
As the O-time knob is rotated, the 7 segments displays O-time set with the initial code 't'
若将O-TIME Knob以逆时针方向慢慢转转，在FND状态下显示“t”和″数字“，可确认设定值.

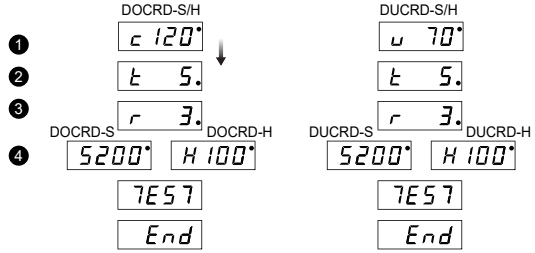
R-TIME
R-TIME Knob를 천천히 시계 반대 방향으로 돌리면 FND상태에 "r"자와 "숫자"가 표기되어 설정치를 알수 있음.
만약 Auto를 선택할 경우, R-TIME은 작동하지 않음.
As the R-time knob is rotated, the 7 segments displays R-time set with the initial code 'r'.
With 'Auto' set, the R-time does NOT work.
Knob以逆时针方向慢慢转转，在FND状态下显示“r”和″数字“, 可确认设定值.
若选择AUTO时, R-TIME就不运作.

SHUNT / HALL
소자 정격 Knob를 이용하여 설정하고자 하는 소자의 정격에 맞게 설정함.
- DUCRD-S : SHUNT Knob를 움직이면 "S"자와 "숫자"가 표기되어 소자정격을 설정할수 있음.
- DUCRD-H : HALL Knob를 움직이면 "H"자와 "숫자"가 표기되어 소자정격을 설정할수 있음.

Set the rated current for a HALL/SHUNT component by adjusting its knob.
- DUCRD-S : As the SHUNT knob is rotated, the 7 segments displays the rated current set with the initial code 'S'
- DUCRD-H : As the HALL knob is rotated, the 7 segments displays the rated current set with the initial code 'H'

利用元件额定Knob，设定符合元件额定电流的设定值.
- DUCRD-S: 若操作SHUNT Knob，就显示“S″和“数字“，可设定元件额定.
- DUCRD-H: 若操作HALL Knob，就显示“H″和“数字“，可设定元件额定.

☐ TEST 방법 / TEST instruction / 测试方法

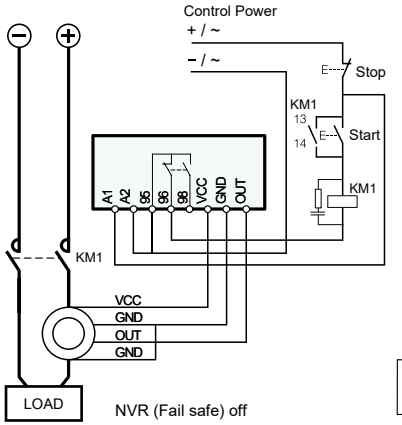


			DOCRD-S / DUCRD-S	DOCRD-H / DUCRD-H
❶	전류 설정 / Current threshold 设定电流		0.1A...240A	5A...480A
❷	전류동작시간 / Current duration 设定电流运作时间		0.5...25sec	0.5...25sec
❸	자동복귀시간 / Auto reset time 自动复位时间		0.5...25sec	0.5...25sec
❹			DOCRD-S / DUCRD-S	DOCRD-H / DUCRD-H
	SHUNT	1	0.1 ... 1.3A	○	
		2	0.2 ... 2.6A	○	
		5	0.5 ... 6.6A	○	
		10	1.0 ... 13.2A	○	
		20	2.0 ... 26.4A	○	
		50	5.0 ... 66.2A	○	
		100	10 ... 132A	○	
		200	20 ... 264A	○	
	HALL	5A	5 ... 64A		○
		100A	10 ... 128A		○
		200A	20 ... 256A		○
		300A	30 ... 384A		○
		400A	40 ... 513A		○

HALL Sensor 입력 : DC 12V (VCC-GND), 출력 DC 4V (OUT-GND)
SHUNT 2차측 출력 : 전압 DC 50mV 출력 / SHUNT secondary voltage: 50mVDC
SHUNT二次侧输出：输出电压 DC 50mV

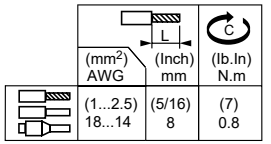
☐ 결선도 / Wiring / 接线图

DOCRD-H / DUCRD-H

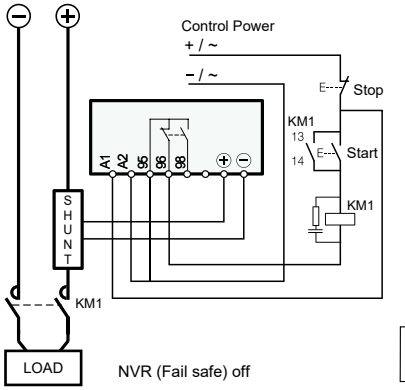


	95 - 96	95 - 98
NVR ON	Open	Close

※ 제어전원은 절연된 전원 사용.
It is highly recommended to use an isolated control power.
控制电源，请使用结缘

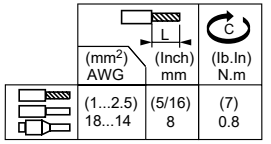


DOCRD-S / DUCRD-S



	95 - 96	95 - 98
NVR ON	Open	Close

※ 제어전원은 절연된 전원 사용.
It is highly recommended to use an isolated control power.
控制电源，请使用结缘



☐ 외형치수 / Dimensions / 外形尺寸

