

HONEYWELL

DC 1010 / 1020

1030 / 1040

DIGITAL CONTROLLER
KULLANIM KILAVUZU

07/02

BU KILAVUZU KULLANMADAN ÖNCE CİHAZIN MODEL NO'SUNU GİRİŞ TİPİ ,ÖLÇÜM ARALIĞI VE ÇIKIŞ TİPLERİNİ NOT EDEREK İHTİYACINIZA UYGUNLUGUNU KARŞILAŞTIRIN.

1. ÖN PANEL

1.1 EKRAN

PV : Proses Değeri, 4-digit ekran (KIRMIZI)

SP : Set Değeri, 4-digit ekran (YEŞİL)

1.2 LED GOSTERGELER

OUT1 : ÇIKIŞ 1, YEŞİL RENK

OUT2 : ÇIKIŞ 2, YEŞİL RENK

AT : Auto-Tuning, SARI RENK

PRO : Program, SARI RENK


AL1 : Alarm 1, KIRMIZI RENK

AL2 : Alarm 2, KIRMIZI RENK

MAN : Manual , SARI RENK

1.3 TUSLAR

SET : MODE & SET TUSU

 : SHIFT TUSU

 : AŞAĞI OK TUSU

 : YUKARI OK TUSU

A/M : Auto/Manual TUSU

2. Auto Tuning

2.1 AT SEÇENEGİ "YES " İSE, AUTO-TUNING BAŞLAR.

2.2 AUTO-TUNING İŞLEMİ BİTİNCE, PID PARAMETRELERİ OTOMATİK OLARAK HAFIZAYA KENDİ KENDİNE KAYDEDİLİR.

2.3 ATVL = AUTO-TUNING OFFSET, OFF SET DEĞERİ GİRİLDİĞİNDE HESAPLANIR VE SET DEĞERİNDEN ÇIKARTILIR.

(AUTO TUNING İŞLEMİ SIRASINDA SET DEĞERİ DİŞİNE ÇIKILMASINI ENGELLER.)

SP-ATVL = Auto-tuning değeri, ATVL = Auto tuning offset

(Örnek) SP = 200°C, ATVL = 5, Auto tuning başlama değeri= 195°C

2.4 AUTO TUNING HATASI

2.4.1 ATVL değeri çok yüksek

=> Eger emin degilseniz, ATVL = 0 değerini girin)

2.4.2 Process değişim süresi Auto Tune fonksiyonunun düzgün çalışabilmesi için fazla uzun.=>PID parametrelerini manuel olarak siz girin.

3. HATA MESAJLARI

1 n IE	GİRİŞ 1 SENSÖRÜ AÇIK DEVRE
* AdCF	A/D ÇEVİRİCİSİ BAŞARISIZ
* C JCE	COLD JUNCTION KOMPANZASYONU BAŞARISIZ
1 n 2E	GİRİŞ 2 SENSÖRÜ AÇIK DEVRE
UUU 1	PV DEĞERİ USPL (ÜST LİMİT)DEĞERİNİN ÜSTÜNDE
nnn 1	PV DEĞERİ LSPL (ALT LİMİT)DEĞERİNİN ALTINDA
UUU 2	GİRİŞ 2 SİNYALİ LİMİT DEĞERİN ÜSTÜNDE
nnn 2	GİRİŞ 2 SİNYALİ LİMİT DEĞERİN ALTINDA
* rAdCF	RAM HATASI
1 n EF	ARABİRİM HATASI
AUEF	AUTO TUNING BAŞARISIZ

(Önemli Not) * işaretli hatalar kritik hatalar olup bu birimlerin değişimini gerektirir.

4. ÇALIŞMA DIAGRAMI

4.1 SEVİYE 1

PV Değeri

SP Değeri

ÇIKIŞ

% ORANI

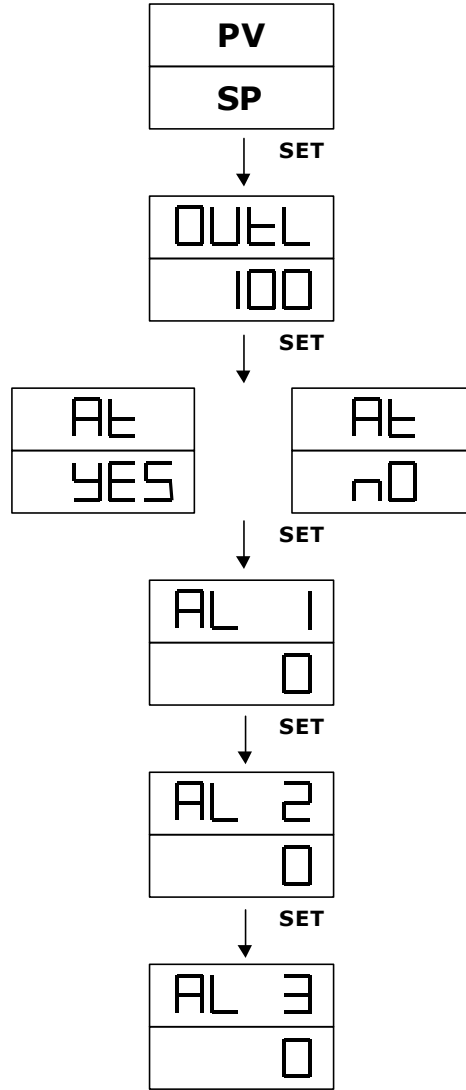
Auto Tuning

Durumu

Alarm 1 Set

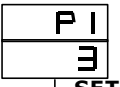

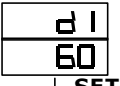
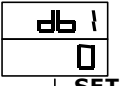
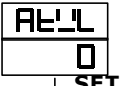


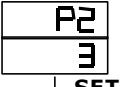

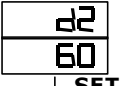





Alarm 2 Set

Alarm 3 Set



- 4.1.1 Parametreler SHIFT (◀) tuşuna basarak değiştirilir, SHIFT tuşuna basınca ilk dijit yanıp sönmeye başlar.Yukarı ok tuşuna basınca (▲ ya da aşağı ok tuşu▼) dijite değerleri yükselmeye ya da düşmeye baslar, SHIFT tuşuna tekrar basınca bir sonraki dijite geçilir, tekrarlanması durumunda istenen dijite ulaşılır ve istenen değer girilmesi için oklar kullanılır.SET tuşuyla girilen değer kaydedilir.
- 4.1.2 SET tusu aynı zamanda MODE 'leri degistirmeye yarar. SET tusuna basilrsa ekran bir sonraki MODE 'u gösterir.
- 4.1.3 SET tusunu 5 saniye basili tutun. Ekran Seviye 2 'e geçer, tekrar SET tusuna basilrsa Seviye 1 'e dönülür.
- 4.1.4 Eger 1 dakika boyunca hiçbir tusa basılmazsa ekran Seviye 1 'e döner.
- 4.1.5 Herhangi bir anda A/M tusuna basilrsa Seviye 1 'e dönülür.
- 4.1.6 Eger ÇIKIŞ % ORANI "0" ise , kontrol cihazinin çikisi kapalıdır.

4.2 Seviye 2

	Ana Kontrol Proportional Band	ARALIK: 0~200% P=0 olursa ON/OFF
↓ SET		
	Ana Kontrol Integral Süresi	ARALIK: 0~3600 sn I=0 olursa Integral=off
↓ SET		
	Ana Kontrol Derivative Süresi	ARALIK: 0~900 sn D=0 olursa Derivative=off
↓ SET		
	Ana Kontrol Ölü-band Süresi	Ölü Süre Kompansasyonu ARALIK: 0~1000 sn
↓ SET		
	Ana Kontrol Auto Tuning off-set	ARALIK: 0~USPL
↓ SET		
	Ana Kontrol Proportional Cycle	ÇIKIS (SSR → 1, 4~20mA→0, relay→over 10) ARALIK: 0~150 sn * Bknz. 8.10 Cycle Time
↓ SET		
	Ana Kontrol Hysteresis	Yalnız ON/OFF kontrol için ARALIK: 0~1000
↓ SET		
	Alt Kontrol Proportional band	P1 gibi ayarlanacak
↓ SET		
	Alt Kontrol Integral Süresi	I1 gibi ayarlanacak
↓ SET		
	Alt Kontrol Derivative Süresi	D1 gibi ayarlanacak
↓ SET		
	Alt Kontrol Proportional Cycle	CYT1 gibi ayarlanacak
↓ SET		
	Alt Kontrol Hysteresis	HYS1 gibi ayarlanacak
↓ SET		
	Ana Kontrol Gap (ÇIKIS 1)	Yalnız ÇIKIS 2 kullanımı için, Set Degeri'nden önce "OFF" 'a dönüşüm degeri
↓ SET		
	Alt Kontrol Gap (ÇIKIS 2)	Yalnız ÇIKIS 2 kullanımı için, Set Degeri'nden önce "ON" 'a dönüşüm degeri
↓ SET		
	Kilitleme Fonksiyonu	LCK=0100, Seviye 1 & 2 'ye giris ve yukaridaki gibi parametreleri degistirme izni. LCK=0110, Seviye 1 & 2 'ye giris ve yalnızca Seviye 1 parametreleri degistirme izni. LCK=0001, Yalnızca Seviye 1'e giris ve SP degerini degistirme izni. LCK=0101, Hicbir isleme izin vermez yalnızca LCK degerini degistirme izni
↓ SET		

Return to

'P1'

4.3 Seviye 3

Seviye 3 e girmek için LCK=0000 iken, SET + SHIFT tuşlarına 5 saniye süreyle basın.

	Ana Kontrol Giris seçimi	Giris araligini seçer Bknz. 5.1 Giris seçimi sayfa.13~sayfa.14
↓ SET		
	Ana Kontrol Analog Alt Deger	AN1-AN5 arasi Giris kodlari gibi kullanilir Aralik: LSPL~USPL
↓ SET		
	Ana Kontrol Analog Üst Deger	ANL1 'de oldugu gibi
↓ SET		
	Desimal nokta	Desimal nokta pozisyonunu ayarlamak için
↓ SET		
	Alt Set-Deger limiti	INP1 için geçerli ayarlanabilecek min.alt set degeri
↓ SET		
	Üst Set-Deger limiti	INP1 için geçerli ayarlanabilecek max.üst set degeri
↓ SET		
	Alt Kontrol Analog Alt Deger	AN1-AN5 arasi Giris kodlari gibi kullanilir. Aralik: LSPL~USPL
↓ SET		
	Alt Kontrol Analog Üst Deger	ANL2 'de oldugu gibi
↓ SET		
	AL1 'in Alarm modu	Aralik: 00~19 Bknz. '6.1 Alarm Fonksiyon Seçimi' sayfa.15
↓ SET		
	Alarm 1 Süresi	Program Fonksiyonlarında kullanilir Aralik: 0~99.59 0=Tetikleme, 99.59=Sürekli, Diger = Gecikme süresi
↓ SET		
	AL2'in Alarm modu	Aralik: 00~19
↓ SET		
	Alarm 2 Süresi	ALT 1 de oldugu gibi
↓ SET		
	AL3in Alarm modu	Aralik: 00~19
↓ SET		
	Alarm 3 Süresi	ALT 1 de oldugu gibi
↓ SET		
	Alarm Hysterisisi	Aralik: 0~1000
↓ SET		

↓ CLO1 150 ↓ SET	Ana Kontrol % 0 Kalibrasyonu	Çıkış alt değerinin kalibrasyonu Aralık: LSPL~USPL (Yalnızca Akım çıkışı için)
↓ SET CHO1 3500 ↓ SET	Ana Kontrol % 100 Kalibrasyonu	Çıkış üst değerinin kalibrasyonu Aralık: 0~9999 (Yalnızca Akım çıkışı için)
↓ SET CLO2 150 ↓ SET	Alt Kontrol % 0 Kalibrasyonu	CL01 'de olduğu gibi
↓ SET CHO2 3500 ↓ SET	Alt Kontrol % 100 Kalibrasyonu	CH01 'de olduğu gibi
↓ SET CLO3 150 ↓ SET	Transmitter kontrol % 0 Kalibrasyonu	CL01 'de olduğu gibi
↓ SET CHO3 3500 ↓ SET	Transmitter kontrol % 100 Kalibrasyonu	CH01 'de olduğu gibi
↓ SET PUCY 00 ↓ SET	Motor Valve Kontrolü Zamanlayıcı	Proportional motor (potensiyometresiz) için tam açma süresi Aralık: 5~200 sn
↓ SET CA. t 0 ↓ SET	Devam eden operasyonlu programlarda kullanım için	0=Bekleme yok Diğer = Bekleme süresi
↓ SET SETA 0000 ↓ SET	Kontakt Röle & Program RUN & End ALM	0= "a" contact, 1= "b" contact SET A.4=0 RUN Alarm, SET A.4=1 END Alarm
↓ SET IDno 1 ↓ SET	ID no'su (bu adımı atlayın)	Haberleşme ID no'su
↓ SET BAUD 2400 ↓ SET	Baud hızı (bu adımı atlayın)	UART band hızı seçimi Aralık: 110~9600 BIT/sn
↓ SET SuOS 0 ↓ SET	SP Kompansasyonu	Aralık: -1000~1000
↓ SET PvOS 0 ↓ SET	PV Kompansasyonu	Aralık: LSPL~USPL
↓ SET Unit C ↓ SET	PV & SP Birimleri	Aralık: C, F, A (analog)
↓ SET SOFT 1000 ↓ SET	Soft filtre (bu adımı atlayın)	PV değişim süresini ayarlar Aralık: 0.05~1.00

* Dikkat:Lütfen SET8.4 degerini degistirmeyin, aksi takdirde kontrol cihazinin prosesinde karisikliklar olacaktır.

4.4.3 SET Fonksiyonlari

SET	Fonksiyon	SET	Fonksiyon
1.1	OUTL	5.1	CL02, CH02
1.2	AT	5.2	CL03, CH03
1.3	AL1	5.3	Rucy, WAIT, HYSM
1.4	AL2	5.4	ID NO, BAUD
2.1	AL3	6.1	SVOS
2.2	ANL1, ANH1, DP	6.2	PVOS
2.3	LSPL, USPL	6.3	UNIT
2.4	ANL2, ANH2	6.4	SOFT
3.1	ALD1	7.1	CASC
3.2	ALT1	7.2	ODD
3.3	ALD2	7.3	OPAD
3.4	ALT2	7.4	Hz
4.1	ALD3		
4.2	ALT3		
4.3	HYSA		
4.4	CL01, CH01		

SET	Fonksiyon	Açıklaması
8.1	0= Tekrar yok	
	1= Program Tekrari	
8.2	0= Power kesintisi yok	
	1= Power kesintisi var	
8.3	0= Program 0 'dan baslar	
	1= Program PV den baslar	
	0=Yok	NOIS MLNB COMP OFFS
	0=Göster	NOIS MLNB COMP OFFS
9.1	1= PV/SP switching	Tek satır ekran ayari icin
9.2	1= Programsız modelde	Rampa gösterimi
9.2*	1= Programlı modelde	Zaman formati H/m den m/sn)
9.3	1= TRS SV	Auxiliary çıkis kullanimi
9.4	1= TRS PV	Auxiliary çıkis kullanimi

8.4 *= 1 Ekran tek satirli ekrana tipine dönüşür
9.2 *= 1 Saat : Dakika / Dakika :saniye

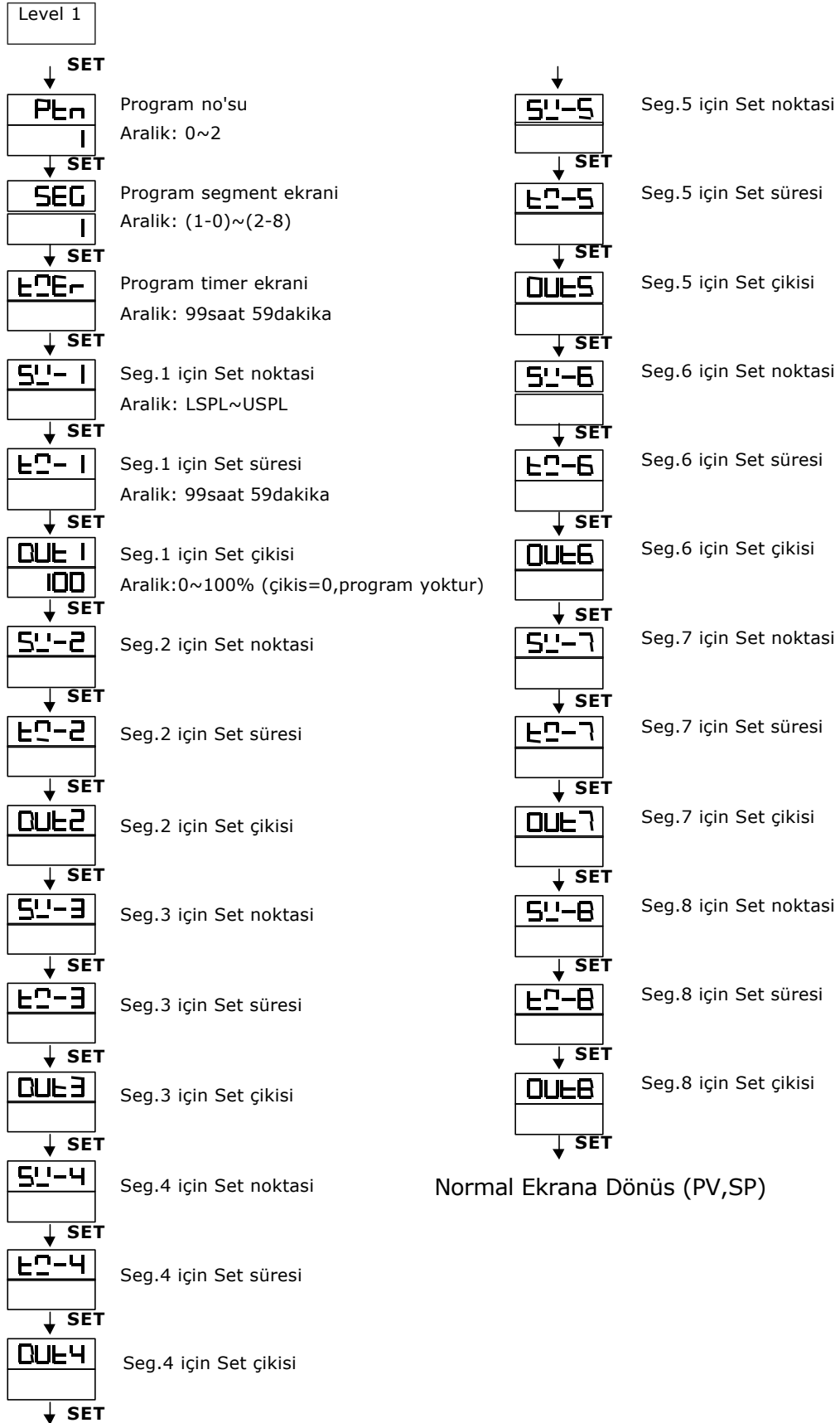
SET	Fonksiyon	Açıklaması
0.1*	0= Bu fonksiyon haberleşmesiz DC1000 de işlevsizdir	
0.2	1= AL3 için Rate	(ALD 3 = 0)
0.3	1= Remote SP	
9.4	0= Motor valf close = "b" çıkis normalde kapali kontakt	
9.4	1= Motor valf close = "a" çıkis normalde açık kontakt	

0.1* Haberleşmeli Modelde

0.1 0= TTL Communication (Slave)

0.1 0= TTL Communication (Master)

4.5 Program Seviyesi



4.5.1 Bu programda 2 patern vardır. Her patern 8 segment içerir. Segmentler RAMP SOAK durumlarına göre sıralanırlar.

4.5.2 Terminoloji

Patern : Segmentlerden oluşan programdır

Adım : RAMP durumları + SOAK durumları

RAMP durumu : Değişken SP değerlerinden oluşur

SOAK durumu : Sabit SP değerlerinden oluşur

4.5.3 Çalışma

1) Tus fonksiyonları (Parametre değişimi yapmaz)

△(START) : Programı başlatma tusu, PRO indikatörü titreterek yanar

▽(WAIT) : Çalışmaya başlamış programı beklemeye alır, PRO indikatörü titreterek değil devamlı yanar.

△+SET (JUMP) : Bir sonraki segmente atlar

▽+SET (RESET) : Programı iptal eder, PRO indikatörü soner "off" durumunda bekler

2) Alarm fonksiyonu

ALD1= 07 değerine set edilmişse(*Bknz seçim),

AL1 = 2 ye set edilmişse(AL1=2, segment 2 'nin sonunda alarm demektir),

ALT1= 00.10 ye set edilmişse (alarm süresi 10 sn.).

*Bu durumda , program 2.segment sonuna gelince, ALM1 rölesi 10 saniye süreyle kontakt verecektir.

3) Program sonu (End) fonksiyonu

ALD = 17 değerine set edilmişse(*Bknz seçim), tbu program 8. yada 16. segmentinde son bulacaktır.

* Bu durumda, PV ve END indikatörleri titreterek yanarlar, ve alarm rölesi aktif duruma geçer

Bu kontrol cihazında eğer program prosedüründe 8 den az segment varsa programı bitir komutu oluşmaz. Bu durumda sonraki segment çıkışlarına lütfen 0 değeri girin, böylece program son segmentinde son bulacaktır. Aksi takdirde 8 yada 16 segment işleme girecektir.

4) Birleştirme fonksiyonu

PTN=1, 1.paterni işleme sokar, (8 segment içerir)

PTN=2, 2.paterni işleme sokar, (8 segment içerir)

PTN=0, 1.ve 2.paterni işleme sokar ,toplam 16 segment içerir

(Önce PTN1 ve PTN2 değerlerini ayrı ayrı girin, sonra PTN=0 şeklinde değer girerek birleştirin)

5) Diger fonksiyonlar (*Bknz Seviye 4)

SET8.1=1 Program tekrari

SET8.2=0 Power kesintisi yok

SET8.2=1 Power kesintisi var

(Power kesilmesi durumunda kontrol cihazı son durumu hafızasında saklar)

SET8.3=0 Program 0 'dan baslar

SET8.3=1 Program o anki PV degerinden baslar

5. Input

5.1 Giriş seçimi (INP 1)

TIP	KODU	ARALIK	HEX
K	K1	0.0~200.0°C/0.0~392.0°F	01H
	K2	0.0~400.0°C/0.0~752.0°F	02H
	K3	0.0~600.0°C/0.0~1112.0°F	03H
	K4	0.0~800.0°C/0.0~1472.0°F	04H
	K5	0.0~1000.0°C/0.0~1832.0°F	05H
	K6	0.0~1200.0°C/0.0~2192.0°F	06H
J	J1	0.0~200.0°C/0.0~392.0°F	07H
	J2	0.0~400.0°C/0.0~752.0°F	08H
	J3	0.0~600.0°C/0.0~1112.0°F	09H
	J4	0.0~800.0°C/0.0~1472.0°F	0AH
	J5	0.0~1000.0°C/0.0~1832.0°F	0BH
	J6	0.0~1200.0°C/0.0~2192.0°F	0CH
R	R1	0.0~1600.0°C/0.0~2912.0°F	0DH
	R2	0.0~1769.0°C/0.0~3216.0°F	0EH
S	S1	0.0~1600.0°C/0.0~2912.0°F	0FH
	S2	0.0~1769.0°C/0.0~3216.0°F	10H
B	B1	0.0~1820.0°C/0.0~3308.0°F	11H
E	E1	0.0~800.0°C/0.0~1472.0°F	12H
	E2	0.0~1000.0°C/0.0~1832.0°F	13H
N	N1	0.0~1200.0°C/0.0~2192.0°F	14H
	N2	0.0~1300.0°C/0.0~2372.0°F	15H
T	T1	-199.9~400.0°C/-199.9~752.0°F	16H
	T2	-199.9~200.0°C/-199.9~392.0°F	17H
	T3	0.0~350.0°C/0.0~662.0°F	18H
W	W1	0.0~2000.0°C/0.0~3632.0°F	19H
	W2	0.0~2320.0°C/0.0~2372.0°F	1AH
PLII	PL1	0.0~1300.0°C/0.0~2372.0°F	1BH
	PL2	0.0~1390.0°C/0.0~2534.0°F	1CH
U	U1	-199.9~600.0°C/-199.9~999.9°F	1DH
	U2	-199.9~200.0°C/-199.9~392.0°F	1EH
	U3	0.0~400.0°C/0.0~752.0°F	1FH
L	L1	0.0~400.0°C/0.0~752.0°F	20H
	L2	0.0~800.0°C/0.0~1472.0°F	21H

* Fabrika çıkış ayarı K2 'dir.

T IP	KODU	ARALIK	HEX
JIS Pt100	JP 1	-199.9~600.0°C/-199.9~999.9°F	22H
	JP2	-199.9~400.0°C/-199.9~752.0°F	23H
	JP3	-199.9~200.0°C/-199.9~392.0°F	24H
	JP4	0.0~200.0°C/0.0~392.0°F	25H
	JP5	0.0~400.0°C/0.0~752.0°F	26H
	JP6	0.0~600.0°C/0.0~1112.0°F	27H
DIN Pt100	dP 1	-199.9~600.0°C/-199.9~999.9°F	28H
	dP2	-199.9~400.0°C/-199.9~752.0°F	29H
	dP3	-199.9~200.0°C/-199.9~392.0°F	2AH
	dP4	0.0~200.0°C/0.0~392.0°F	2BH
	dP5	0.0~400.0°C/0.0~752.0°F	2CH
	dP6	0.0~600.0°C/0.0~1112.0°F	2DH
JIS Pt50	JP. 1	-199.9~600.0°C/-199.9~999.9°F	2EH
	JP.2	-199.9~400.0°C/-199.9~752.0°F	2FH
	JP.3	-199.9~200.0°C/-199.9~392.0°F	30H
	JP.4	0.0~200.0°C/0.0~392.0°F	31H
	JP.5	0.0~400.0°C/0.0~752.0°F	32H
	JP.6	0.0~600.0°C/0.0~1112.0°F	33H
AN1	An 1	-10~10mV/-1999~9999	34H
AN2	An2	0~10mV/-1999~9999	35H
AN3	An3	0~20mV/-1999~9999	36H
AN4	An4	0~50mV/-1999~9999	37H
AN5	An5	10~50mV/-1999~9999	38H

6. Alarm

6.1 Alarm fonksiyon seçimi

KOD	AÇIKLAMA	Hold-On
00/ 10	Yok	
01	Deviation üst limit alarmi	Evet
11	Deviation üst limit alarmi	Hayir
02	Deviation alt limit alarmi	Evet
12	Deviation alt limit alarmi	Hayir
03	Deviation üst/alt alarmi	Evet
13	Deviation üst/alt alarmi	Hayir
04/ 14	Deviation üst/alt range alarmi	Hayir
05	Absolut deger üst limit alarmi	Evet
15	Absolut deger üst limit alarmi	Hayir
06	Absolut deger alt limit alarmi	Hayir
16	Absolut deger alt limit alarmi	Evet
07	Segman sonu alarmi (use for program only)	-
17	Program basladi alarmi(use for program only)	-
08	System hatasi alarm-on	-
18	System hatasi alarm-off	-
19	Devreye girme alarmi	-

* Not : "Hold-On" Alarm ilk olustugunda devreye girmeyecek demektir.

6.2 Alarm oluşma açıklamaları Hold-on=Inhibit=Evet Inhibitsiz=Hayir

6.1.1 KOD 00/10 : Yok

6.1.2 KOD 01 : Deviation üst alarm inhibit



▲ : SP
△ : Alarm set degeri

6.2.3 KOD 11 : Deviation üst alarm inhibitsiz



6.2.4 KOD02 : Deviation alt alarm inhibit



6.2.5 KOD12 : Deviation alt alarm inhibitsiz



6.2.6 KOD03 : Üst/alt alarm inhibit



6.2.7 KOD13 : Üst/alt alarm inhibitsiz



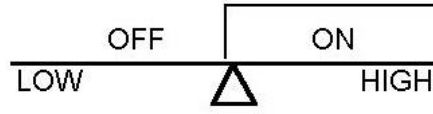
6.2.8 KOD04/14 : Band alarm



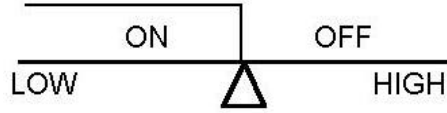
6.2.9 KOD05 : Absolut üst alarm inhibit



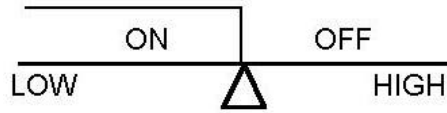
6.2.10 KOD15 : Absolut üst alarm inhibitsiz



6.2.11 KOD06 : Absolut alt alarm inhibit



6.2.12 KOD16 : Absolut alt alarm inhibitsiz



6.2.13 KOD07 : Segment sonu alarmi (Yalnizca program için)

i) ALD 1~3, 07 degeri girilecek

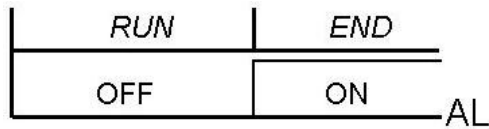
ii) AL1~3, alarm segman no. degeri girilecek

iii) ALT1~3, Eger 0 ise = flicker alarm

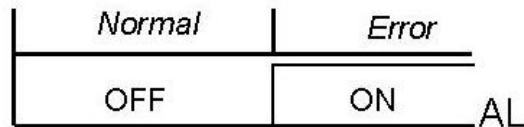
99.59 ise = alarm continued

Digerleri = Devreye girme gecikme süresi

6.2.14 KOD17 : Program basladi alarmi (Yalnizca program için)



6.2.15 KOD08 : System Hatasi- ON



6.2.16 KOD18 : System Hatasi-OFF

<i>Normal</i>	<i>Error</i>
ON	OFF

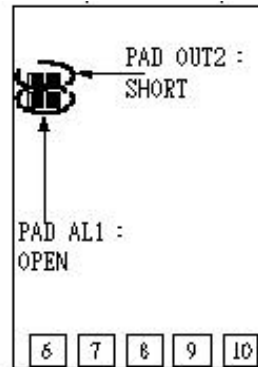
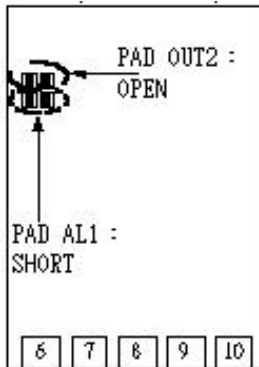
AL

6.2.17 KOD19 : Devreye girme gecikmesi

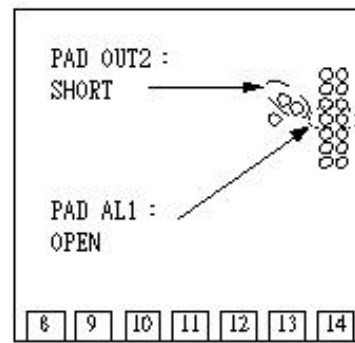
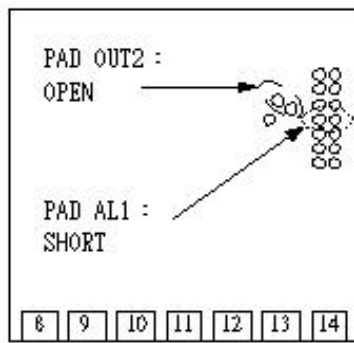
PV=alarm SP, oldugunda girilen deger kadar süre (set süresi)
alarm devreye girmeden bekler (Aralik: 00H00M~99H59M)

7. HEAT/ALARM → HEAT/COOL Degisimi (Pc kartta)

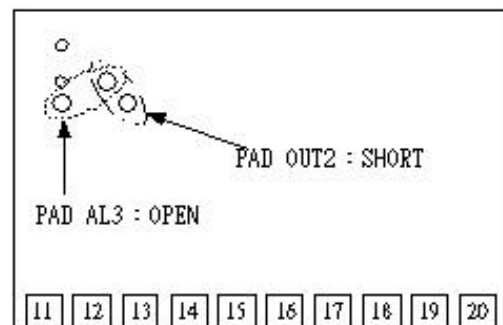
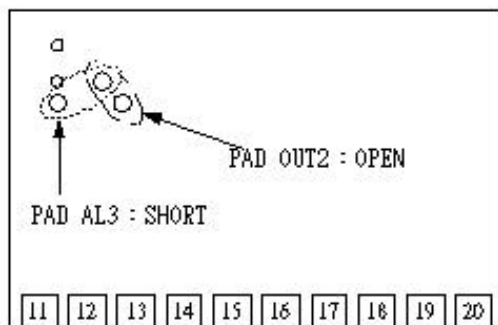
7.1 DC1010



7.2 DC1030

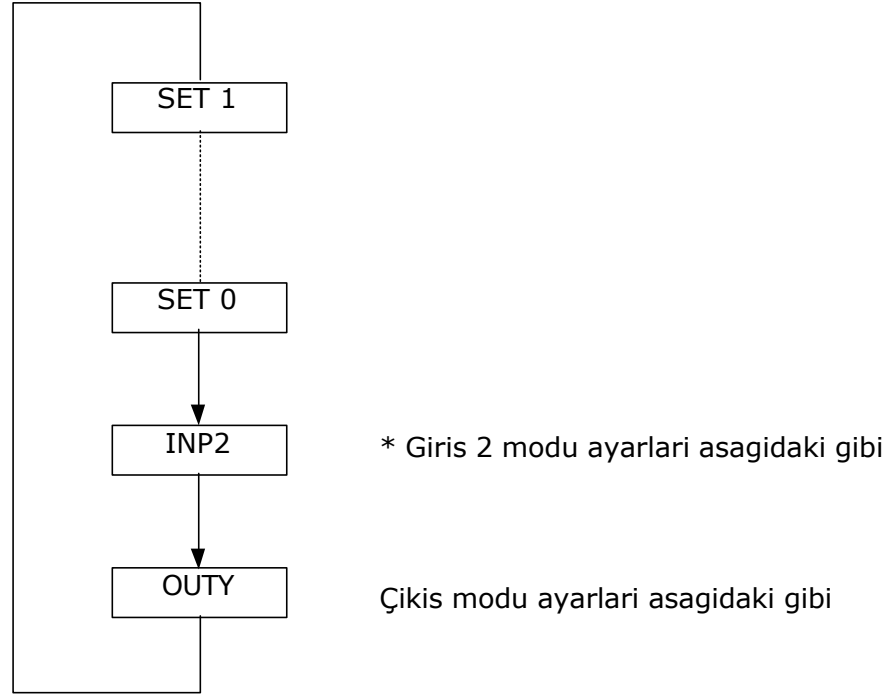


7.3 DC1020/1040



8. Özel fonksiyon açıklamaları

8.1 Seviye Ayarı



8.1.1 2. giriş modu

INP 2 = 0, Yok

INP 2 = 1, 1~5V/4~20mA/2~10V

INP 2 = 2, 0~5V/0~20mA/0~10V

8.1.2 Çıkış modu

OUTY = 0, Tek Çıkış

OUTY = 1, Çift Çıkış

OUTY = 2, Yok

OUTY = 3, Motor Pozisyon Kontrolü

OUTY = 4, Tek Faz SCR (Tek Faz Kontrol)

OUTY = 5, 3 Faz SCR (3 Faz Kontrol)

8.2 Ramp & Soak

8.2.1 RAMP

- Set Seviyesinde "SET2.1= 1", "SET4.1= 1" olarak degistir.
- Giris Seviyesinde "ALD 3 = 9" olarak degistir.
- "AL 3" menüsü artık görünmeyecektir

PV

RAMP

SP

0000

Aralik = 00.00~99.99 (°C/dakika)

RAMP kullanilmiyorsa, ALD 3 = 0 olarak degistir.

8.2.2 SOAK

- ALD1/ALD2 = 19
- AL1/AL2 ekrana gelecektir.

PV

AL 1

SP

0000

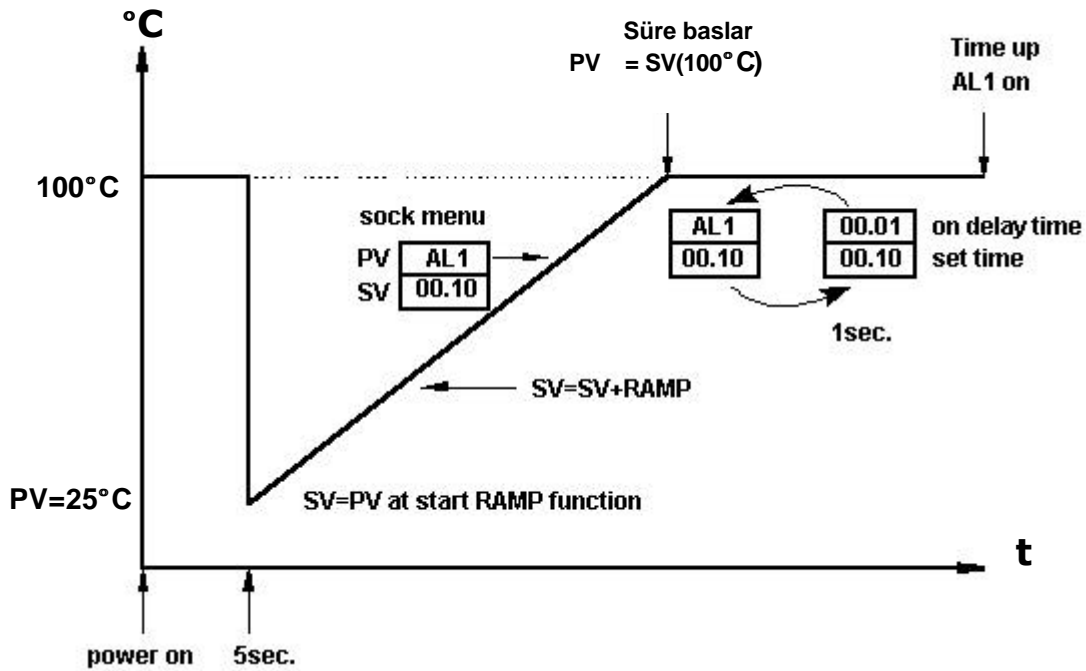
Aralik = 00.00~99.59 (Saat/Dakika)

Örnek=

SP = 100°C, RAMP = 10.00 °C/dakika

Süre(Dakika) = 10 dakika → AL1 = 00.10

PV = 25°C



8.3 Remote SP

8.3.1 Hardware kartlari takilmis olmalidir

8.3.2 'INP2' ' yi 1 veya 2 ayarla (ANL2, ANH2 kalibrasyon için kullanilir.)

8.3.3 SET 0.3 = 1 Remote SP Input 2 (Giris 2)kanalından al demektir
(*SET 0.3 = 0 Local SP 'i kabul et demektir)

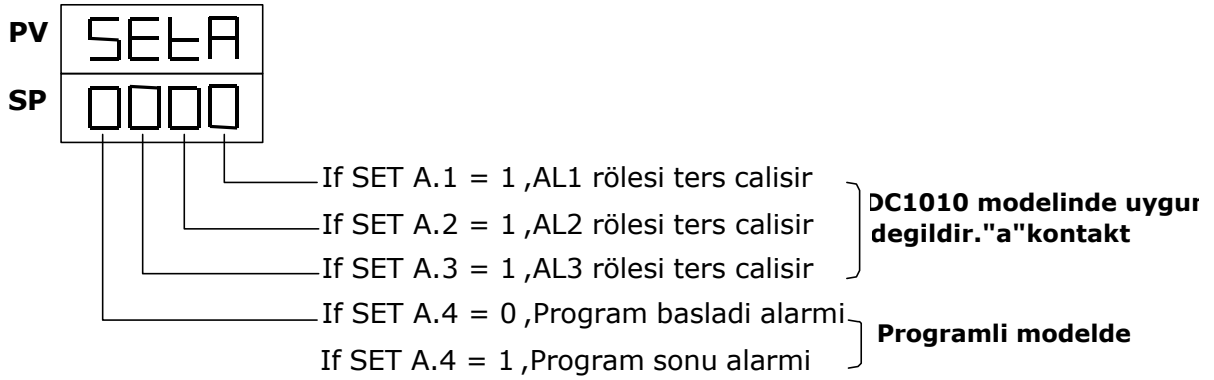
8.4 Alarm Süresi ALT1/ALT2/ALT3 açıklamalari

8.4.1 ALT 1 = 0 Eger AL 1 = ON ise Tetikleme demektir

8.4.2 ALT 1 = 99.59 Eger AL 1 = ON ise 'Sürekli alarm' demektir

8.4.3 ALT 1 = 00.01~99.58 => AL 1 gecikmeli alarm verir

8.5 SET A Fonksiyonu



8.6 SET 8 Fonksiyonu

8.6.1 SET 8.1 = 0 Yok

SET 8.1 = 1 Program Tekrari

8.6.2 SET 8.2 = 0 Yok (Yalnizca programli modeller icin geçerli)

SET 8.2 = 1 Power kesinti geçisi

8.6.3 SET 8.3 = 0 0'dan baslama (Yalnizca programli modeller icin geçerli)

SET 8.3 = 1 PV degerinden baslama

8.6.4 SET 8.4 = 0 Yok

SET 8.4 = 1 Ekran tek satirli ekrana tipine dönüşür

(Bu rakami degistirmemeniz tavsiye edilir)

* SET 8 = 0000 Çift satirli ekran tipine dönüşü saglar

-
- 8.7 SET 9 Fonksiyonu
- 8.7.1 SET 9.1 = 0 Yok
SET 9.1 = 1 PV/SP switching
* Bu tek ekran ayari icin gecerlidir (Bknz.SET 8.4)
- 8.7.2 SET 9.2 = 0 Yok
SET 9.2 = 1 Program modelli degil : No display RAMP
Program model : Zaman formati degisimi (H/m den m/sn 'ye)
- 8.7.3 SET 9.3 = 0 Yok
SET 9.3 = 1 SP degerini Recorder icin Transmisyon çikis olarak verir
- 8.7.4 SET 9.4 = 0 Yok
SET 9.4 = 1 PV degerini Recorder icin Transmisyon çikis olarak verir

- 8.8 SET 0Fonksiyonu
- 8.8.1 SET 0.1 = 0 Yok
SET 0.1 = 1 Yok (Bu fonksiyon DC1010/1020/1030/1040 modellerinde yoktur)
- 8.8.2 SET 0.2 = 0 Yok
SET 0.2 = 1 AL3 icin Rate (ALD 3 = 0)
- 8.8.3 SET 0.3 = 0 Yok
SET 0.3 = 1 Remote SP
- 8.8.4 SET 0.4 = 0 Motor valf close = "b" çikis (normalde kapali kontakt)
SET 0.4 = 1 Motor valf close = "a" çikis (normalde açik kontakt)

8.9 Input level wait
Wait = 0 "Bekleme yok". Programlayici olarak kullanildiginda programi bekleme almaya izin yok
Wait ≠ 0 "Bekleme var".Programlayici olarak kullanildiginda programi bekleme almaya izin var

8.10 Saykl Süresi

Aralik: 0~150 sn

- CYT1= 0 (i) mA
(ii) Faz Kontrol(SCR) (Tristor)
- CYT1= 1 (i) SSR Solide State Relay
(ii) 0 Faz Kontrol(SCR) (Tristor)
- CYT1= over 10 Röle çikis

Uygulama 1. 1 Fazlı Kontrol, Faz Açısı kontrolü

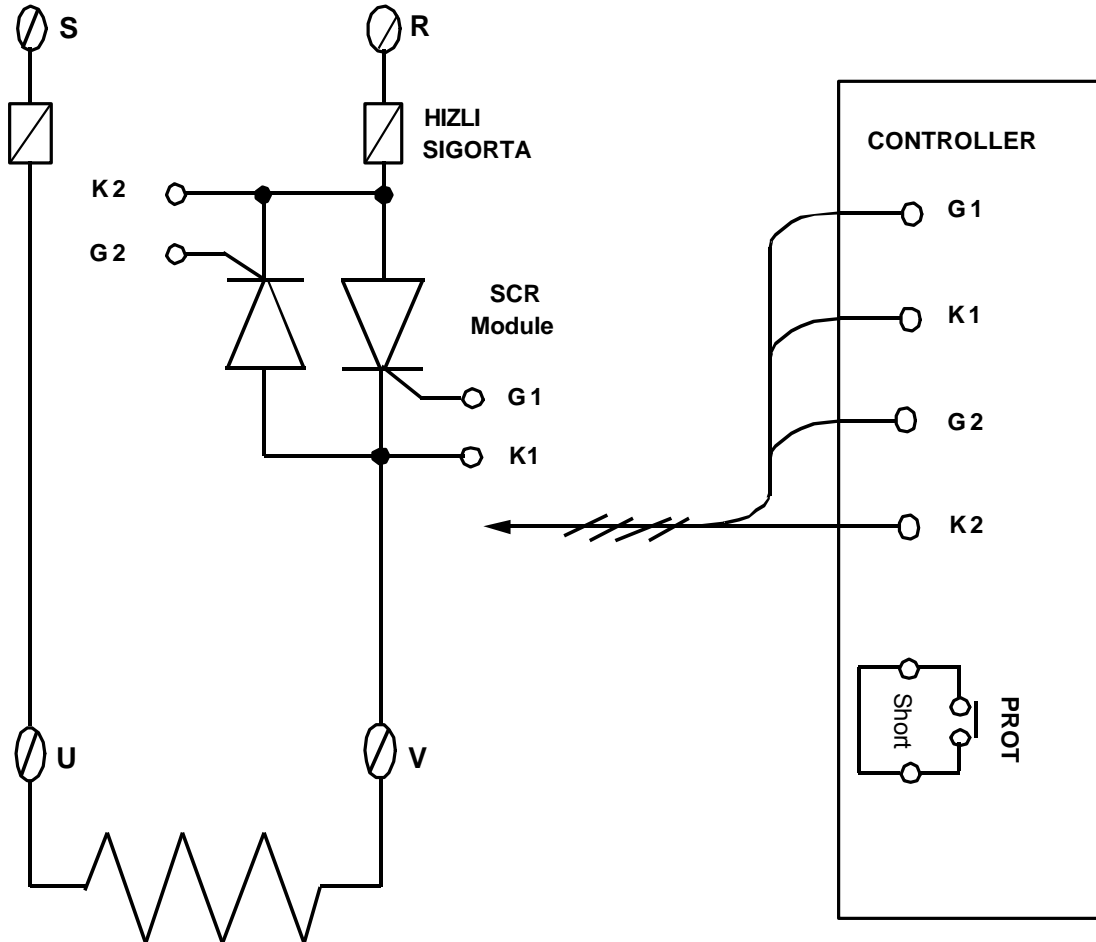
-. Kabul eden Modeller: DC1030/1040, DC1030P/1040P

-. Data Değişimi: OUTY = 4

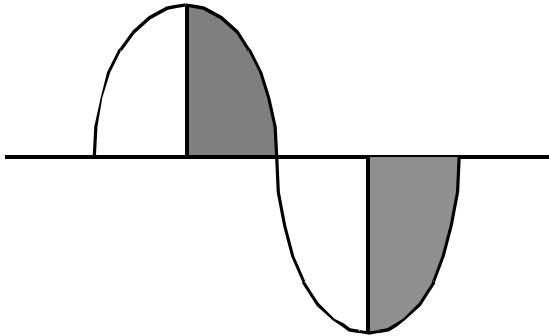
CYT = 0

CL01 = 0, CH01 = 5000 (Yalnızca Resistsans yük kullanılırsa geçerli)

CL01 = 0, CH01 = 4000 (Yalnızca Inductor yük kullanılırsa geçerli)



** Kontrol cihazının besleme faziyla yük fazi aynı olmalıdır.



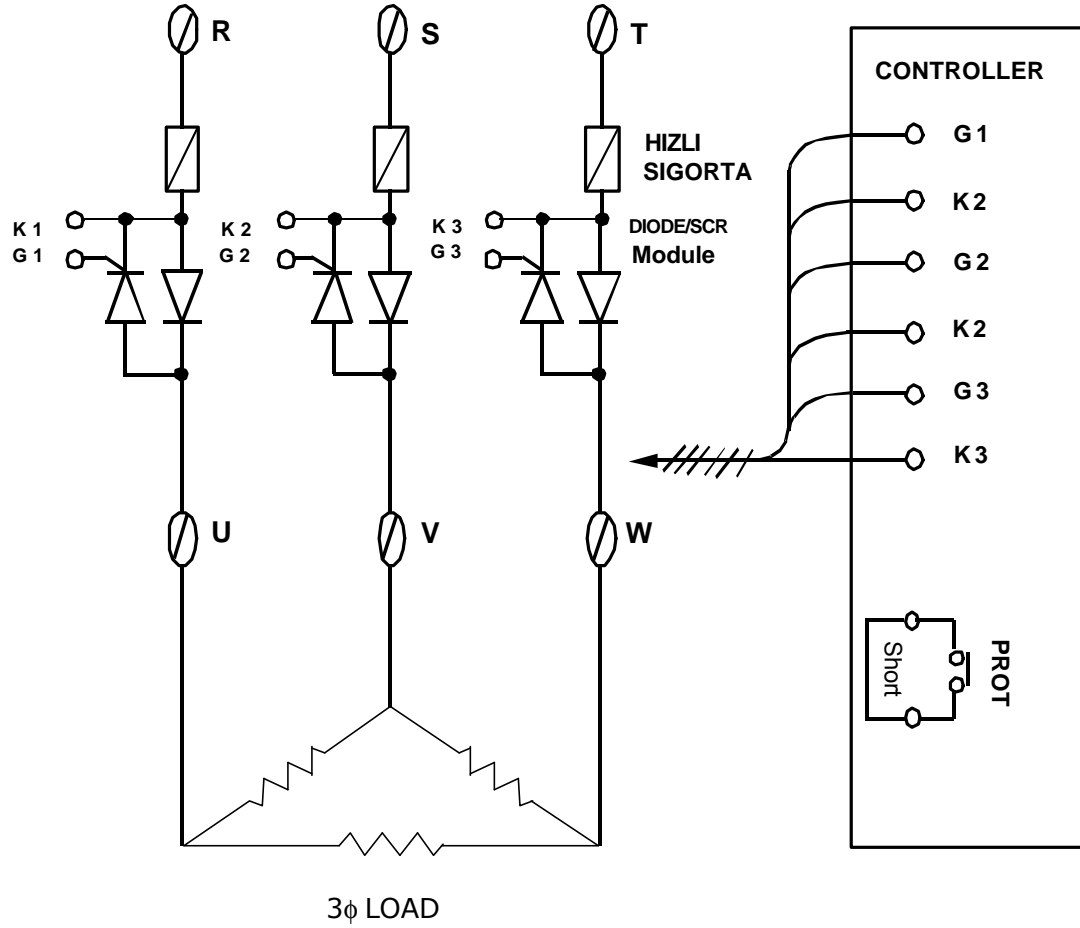
Uygulama 2. 3 Fazlı Kontrol, Faz Açısı kontrolü

-. Kabul eden Modeller: DC1040/DC1040P

-. Data Değişimi : OUTY = 5

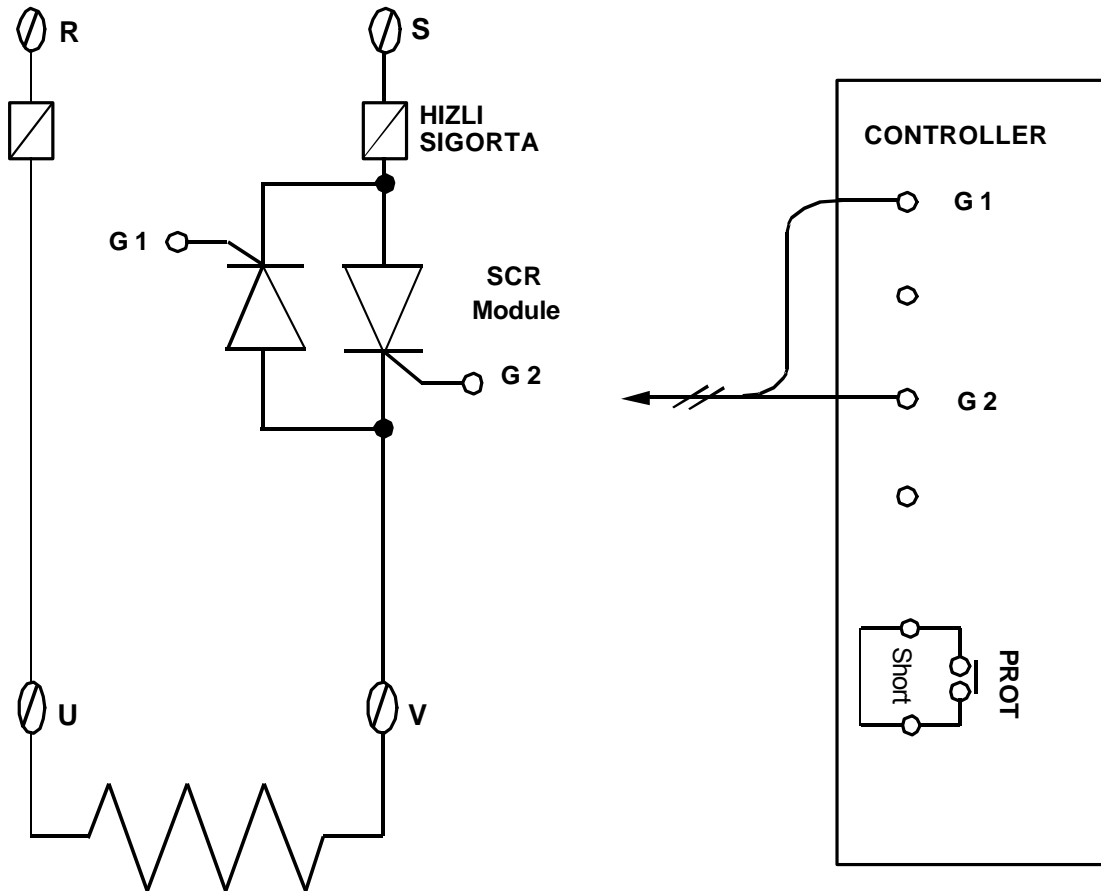
CYT = 0

CL01 = 0, CH01 = 5000 (Yalnızca Resistans yük kullanılırsa geçerli)

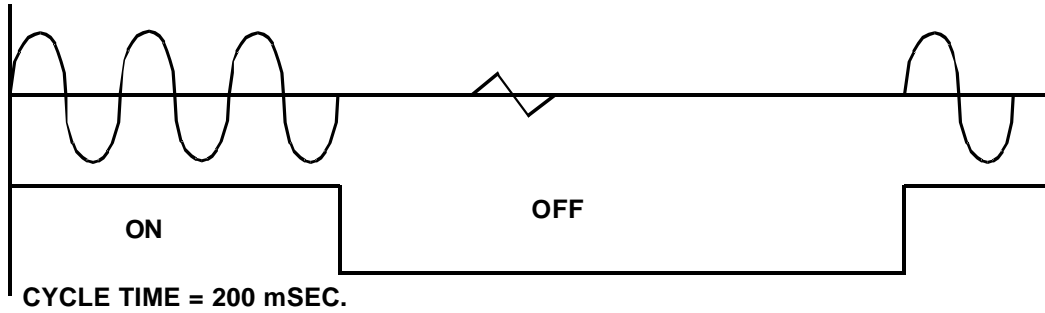


Uygulama 3. Tek Fazli Zero Crossover Kontrol

- . Kabul eden Modeller: DC1030/1040
DC1030P/1040P
- . Data Degisimi: OUTY = 0
CYT1 = 1

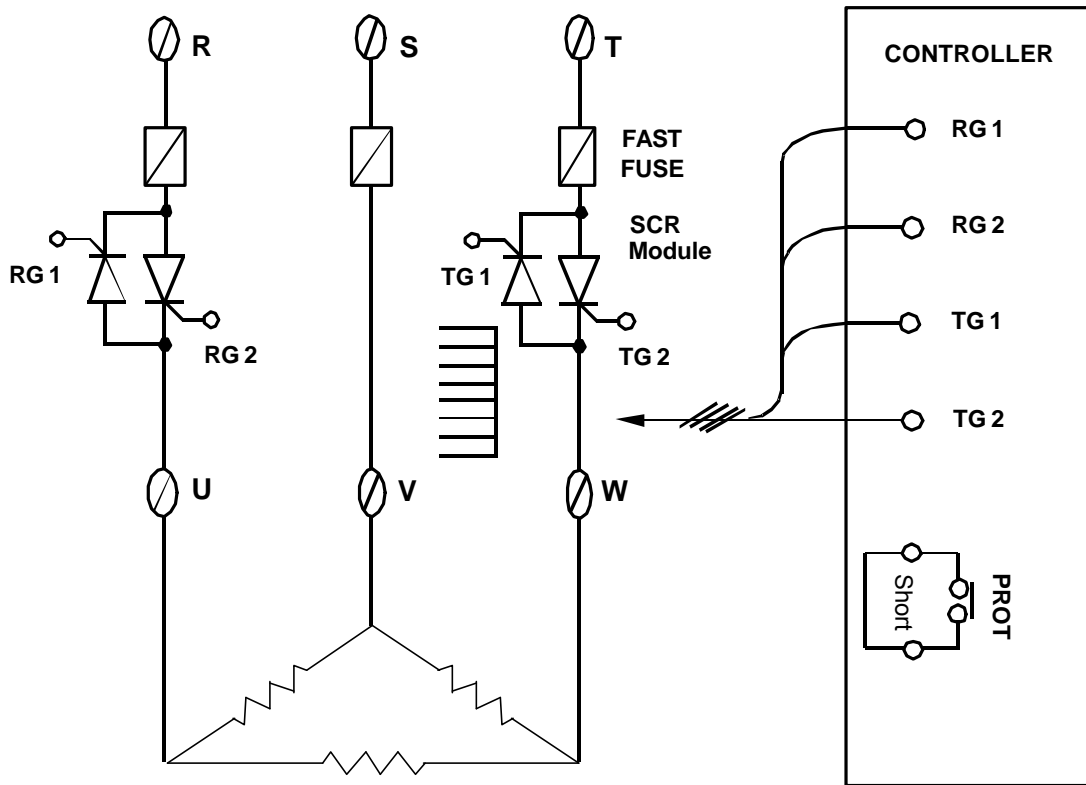


TIME CHART:

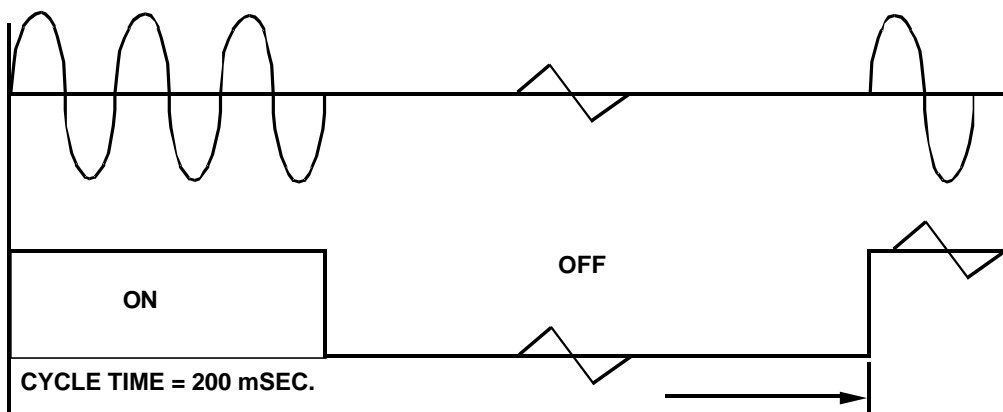


Uygulama 4. 3 Fazli Zero Crossover Kontrol

- . Kabul eden Modeller: DC1040/1040P
- . Data Degisimi: OUTY = 0
CYT1 = 1



TIME CHART:



Uygulama 5. Motor Valf Kontrol

- . Kabul eden Modeller: DC1020/1030/1040

DC1020P/1030P/1040P

- . Data Degisimi: OUTY = 3

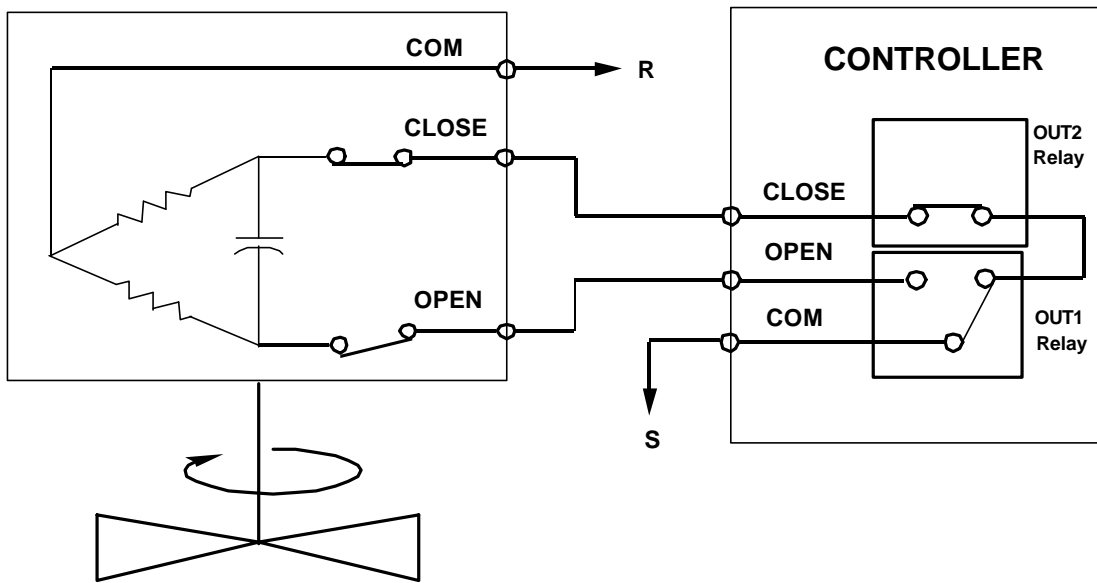
CYT1 = 1~100 sn. (Fabrika cikisi 5 sn'e ayarlidir.)

RUCY = 5~200 sn.

* 1. CYT1 açma/kapama saykl süresidir

2. RUCY motor valfinin 0 'dan 100% degerine varmasi için gerekli çalışma süresidir

MOTOR VALF



Uygulama 6. Tek Fazlı Kontrol (TRIAC modülü için)

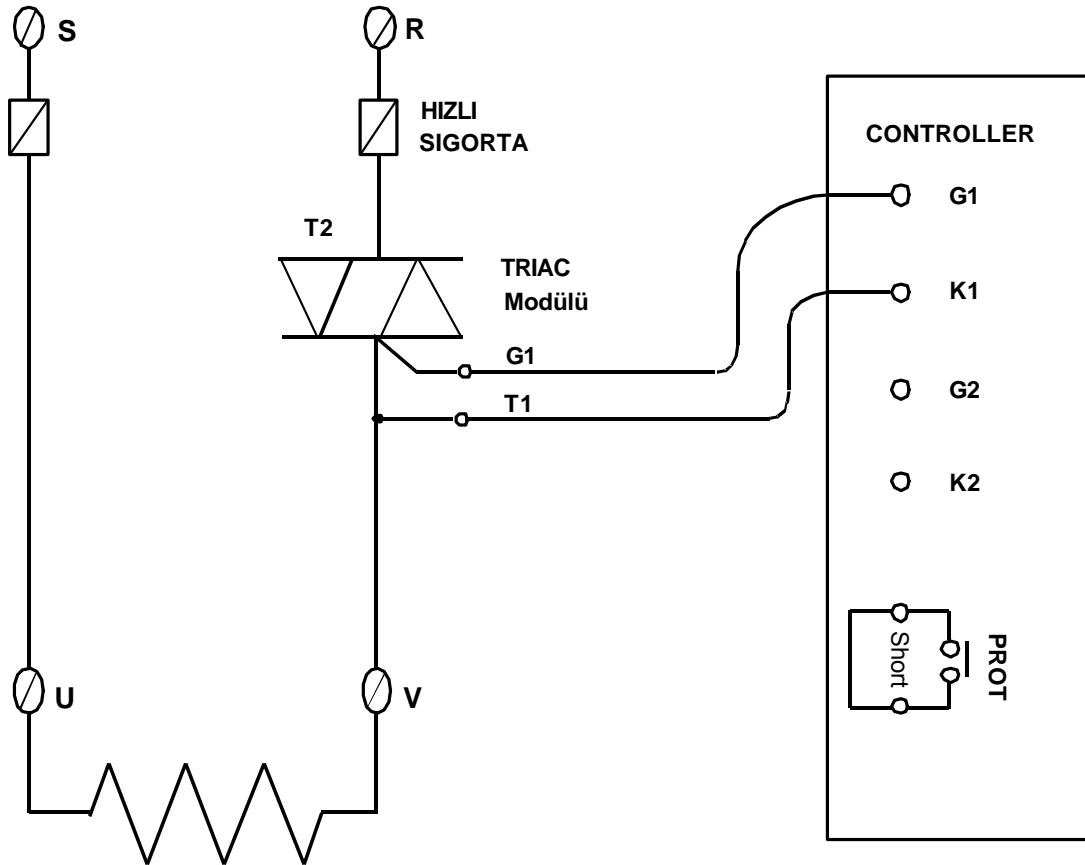
-. Kabul eden Modeller: DC1030/1040

DC1030P/1040P

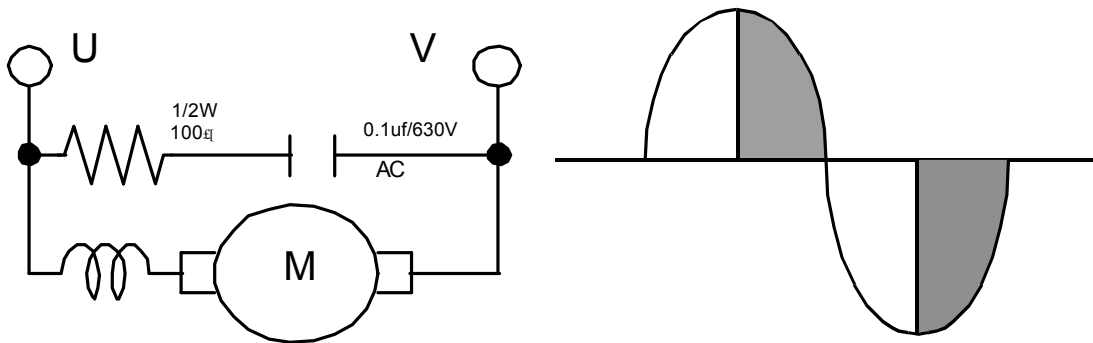
-. Data Değişimi: OUTY = 4

CLO1=0.CHO1=5000 Rezistans yük

CLO1=0.CHO1=4000 Inductor yük



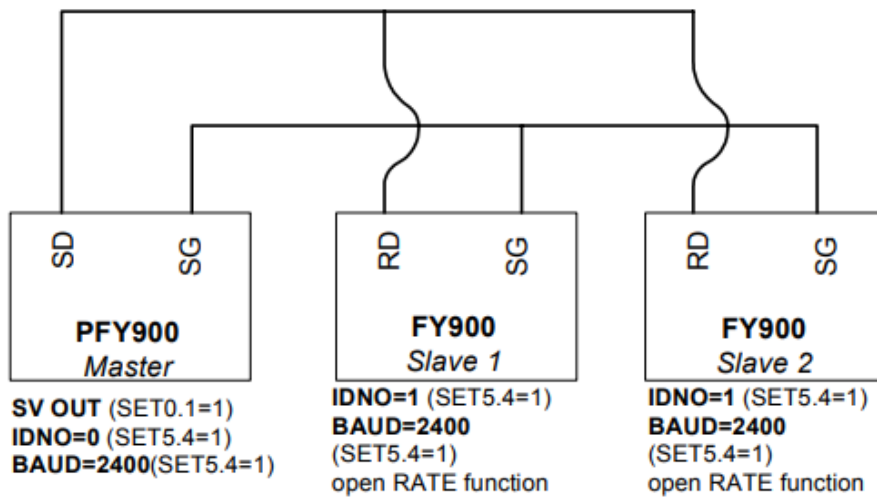
** Kontrol cihazının besleme faziyla yük fazi aynı olmalıdır.



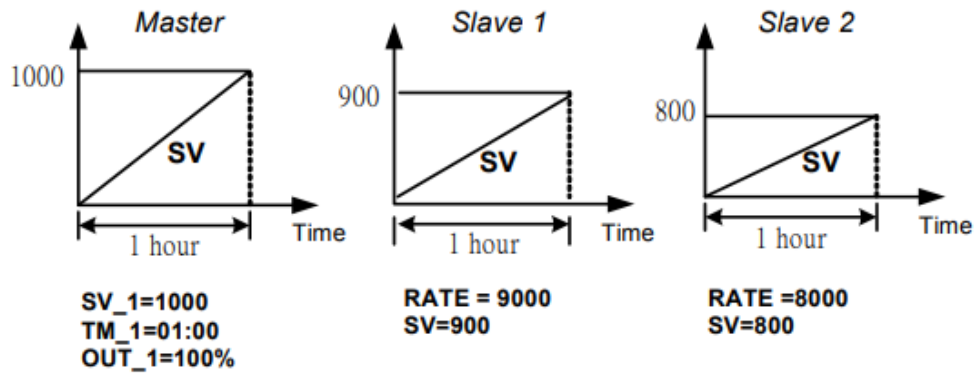
SET 9		Remark
9_1	0 : Reserved (Don't change it)	
9_2	0 : Timer Unit = "Hour : Minute"	Only available for programmable controller
	1 : Timer Unit = "Minute : Second"	
9_3	0 : Disable transmission	Used for transmission output
	1 : SV Transmission	
9_4	0 : Disable transmission	
	1 : PV Transmission	

SET 0		Remark
0_1	0 : TTL Communication (Slave)	Used for TTL communication
	1 : TTL Communication (Master)	
0_2	0 : Hide parameter "RATE"	AL3 will be replaced by "RATE"
	1 : Display parameter "RATE"	
0_3	0 : Disable Remote SV function	Used for Remote SV function
	1 : Enable Remote SV function	
0_4	0 : use output relay "b" contact when motor valve closed	Used for 3 wire proportional motor valve control
	1 : use output relay "a" contact when motor valve closed	

Connection Diagram



Time Chart



(Three controllers reach to the max value at the same time)

4. Input Range Table

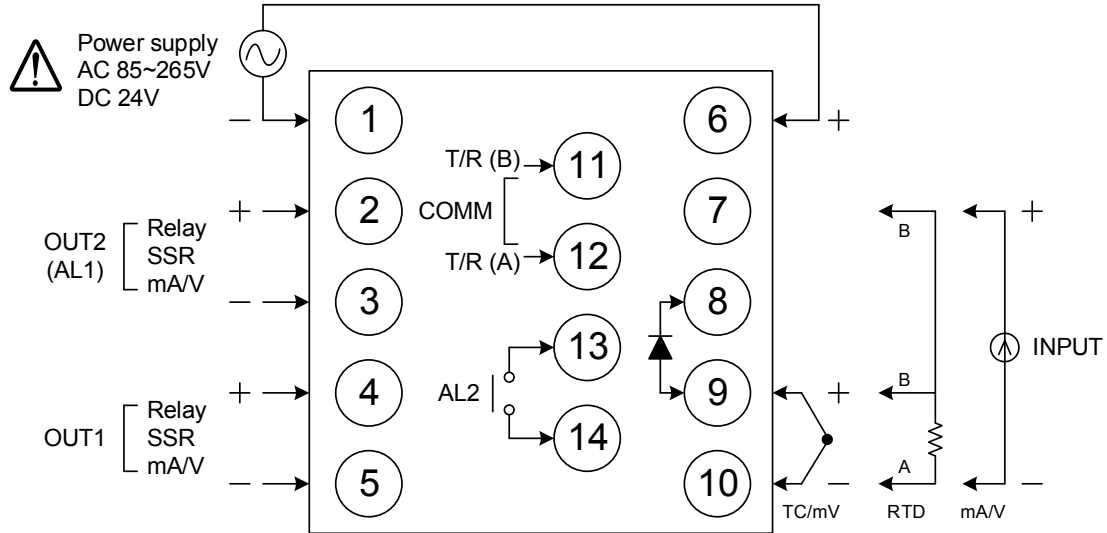
Types of input			Code	Range	
				°C	°F
Thermalcouple	K	K1	01	-50.0~600.0	-58.0~999.9
		K2	02	-50~1200	-58~2192
	J	J1	03	-50.0~400.0	-58.0~752.0
		J2	04	-50~1200	-58~2192
	R	R	05	-50~1760	-58~3200
	S	S	06	-50~1760	-58~3200
	B	B	07	-50~1820	-58~3308
	E	E	08	-50~900	-58~1652
	N	N	09	-50~1300	-58~2372
	T	T1	10	-199.9~400.0	-199.9~752.0
		T2	11	-199~400	-326~752
	W	W	12	-50~2320	-58~4208
	PL	PL	13	-50~1200	-58~2192
L	L	14	-50~800	-58~1472	
RTD	PT100	PT1	15	-199.9~850.0	-199.9~999.9
		PT2	16	-199~850	-326~1562
		PT3	17	0~850	32~1562
Linear	AN1	0~25mV	18	-1.999~9.999 -19.99~99.99 -199.9~999.9 -1999~9999	
	AN2	0~50mV	19		
		0~20mA	20		
		0~1V	21		
		0~2V	22		
		0~5V	23		
		0~10V	24		
	AN3	0~70mV	25		
	AN4	4~20mA	26		
		10~50mV	27		
		1~5V	28		
2~10V		29			

8. Terminal Arrangement

⚠ Caution

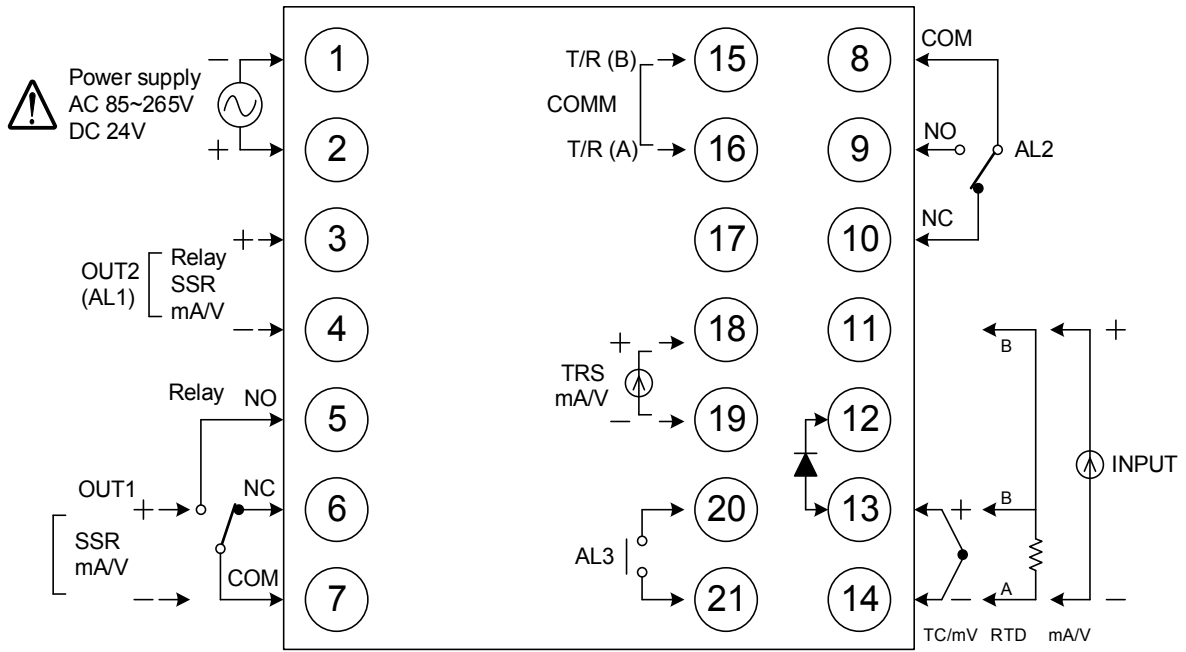
When implementing wiring for the controller power supply, please make sure that the power supply is turned off to avoid electric shock!
Do not touch the live parts, such as the terminals, while the power is on. Otherwise death or serious injury may be resulted from short circuit of the contact electrode.

8.1 DC1010 Terminal Arrangement



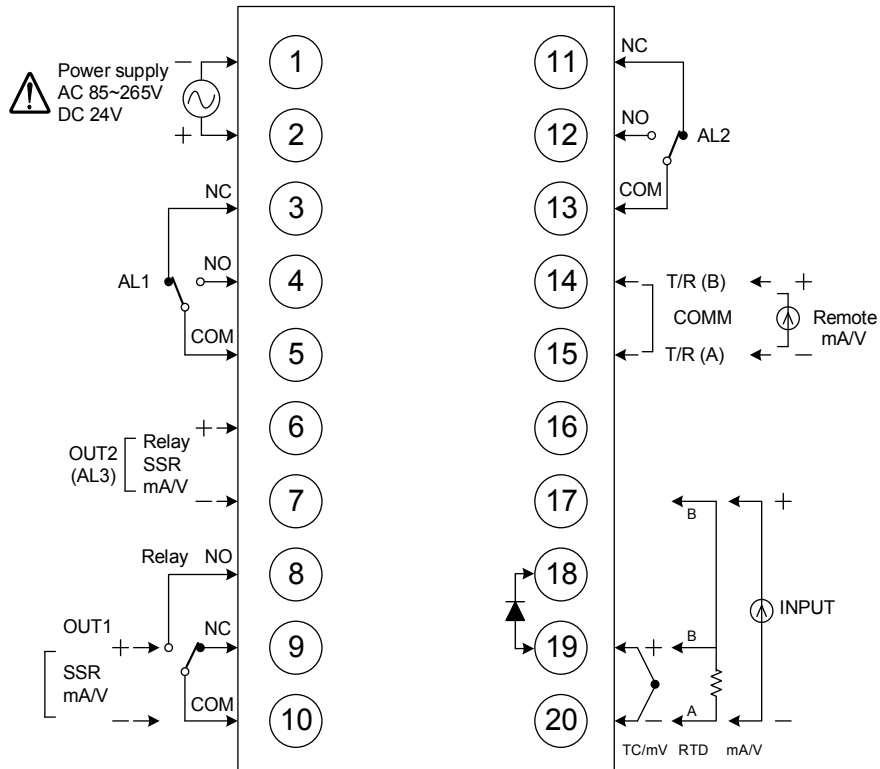
Power		Alarm-1 Alarm-2	
Output-1		Communication	
Output-2		Transmission	
1φ Zero cross	11 G1 12 K1 13 G2 14 K2	Remote SV	
		CT	
Motor valve	2 3 CLOSE 4 OPEN 5 COM	Input	

8.3 DC1040 Terminal Arrangement



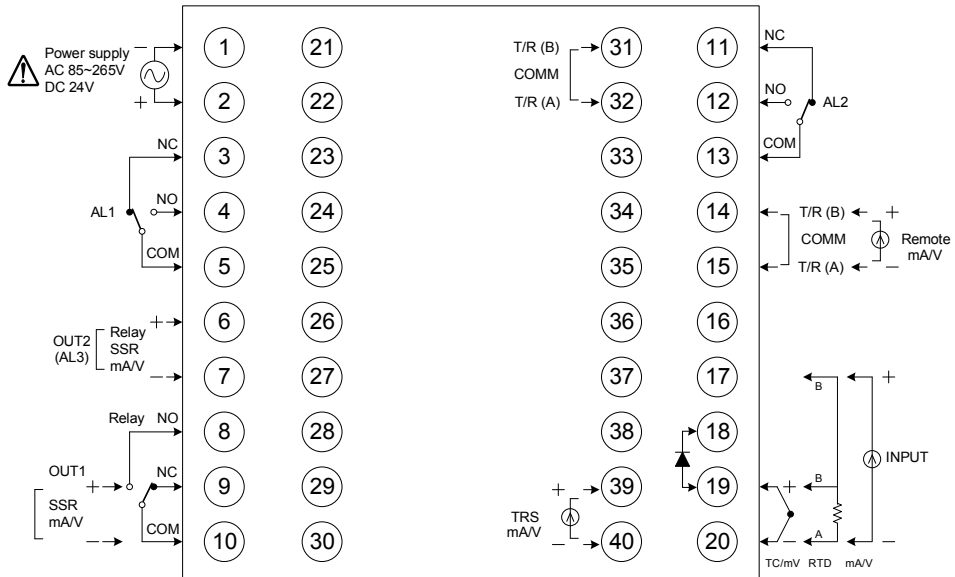
Power		
Output-1		
Output-2		
1φ Zero cross/ Phase angle		
Motor valve		

8.4 DC1020 Terminal Arrangement



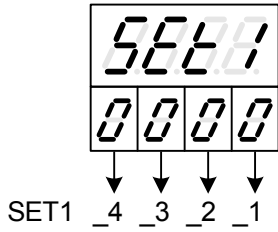
Power	<p>Terminal 1: L (AC 85~265V), - (DC 24V)</p> <p>Terminal 2: N, + (DC 24V)</p>	Communication	<p>Terminal 14: T/R (B), RS-485</p> <p>Terminal 15: T/R (A)</p>
Output-1	<p>Terminal 8: NO</p> <p>Terminal 9: NC, +, mA/V</p> <p>Terminal 10: COM, -</p>	Transmission	<p>Terminal 12: +, mA/V</p> <p>Terminal 13: -, mA/V</p> <p>Terminal 14: +, mA/V</p> <p>Terminal 15: -, mA/V</p>
Output-2	<p>Terminal 6: Relay, +, SSR, mA/V</p> <p>Terminal 7: -, mA/V</p>	Remote SV/CT Input	<p>Terminal 14: +, mA/V, CT</p> <p>Terminal 15: -, mA/V</p>
Motor valve	<p>Terminal 6: CLOSE</p> <p>Terminal 7: OPEN</p> <p>Terminal 8: COM</p> <p>Terminal 9: COM</p> <p>Terminal 10: COM</p>	Alarm 1 Alarm 2 Alarm 3	<p>Terminal 3: NC, AL1</p> <p>Terminal 4: NO, AL2</p> <p>Terminal 5: COM, AL1</p> <p>Terminal 11: NC, AL2</p> <p>Terminal 12: NO, AL2</p> <p>Terminal 13: COM, AL2</p> <p>Terminal 6: NC, AL3</p> <p>Terminal 7: NO, AL3</p>
		Input	<p>Terminal 17: B, +, INPUT</p> <p>Terminal 19: +, TC/mV, RTD, mA/V</p> <p>Terminal 20: -, TC/mV, RTD, mA/V</p>

8.5 DC1040 Terminal Arrangement



Power		Motor valve	
Output-1		Alarm 1 Alarm 2 Alarm 3	
Output-2		Communication	
3φ Zero cross	31 RG1 32 RK1 33 RG2 34 RK2 35 TG1 36 TK1 37 TG2 38 TK2	Transmission	
1φ Zero /Phase angle	31 G1 32 K1 33 G2 34 K2	Remote SV/ CT Input	
		Input	

10.12 Parameters Hide/Display Table on Level 4



<i>5222</i>	SET1_1	0	Hide	OUTL
		1	Display	OUTL
	SET1_2	0	Hide	AT
		1	Display	AT
	SET1_3	0	Hide	AL1
		1	Display	AL1
	SET1_4	0	Hide	AL2
		1	Display	AL2

<i>5222</i>	SET2_1	0	Hide	AL3
		1	Display	AL3
	SET2_2	0	Hide	ANL1 ANH1 DP TRCL TRCH
		1	Display	ANL1 ANH1 DP TRCL TRCH
	SET2_3	0	Hide	LSPL USPL
		1	Display	LSPL USPL
	SET2_4	0	Hide	ANL2 ANH2
		1	Display	ANL2 ANH2

<i>5223</i>	SET3_1	0	Hide	ALD1
		1	Display	ALD1
	SET3_2	0	Hide	ALT1
		1	Display	ALT1
	SET3_3	0	Hide	ALD2
		1	Display	ALD2
	SET3_4	0	Hide	ALT2
		1	Display	ALT2

<i>5224</i>	SET4_1	0	Hide	ALD3
		1	Display	ALD3
	SET4_2	0	Hide	ALT3
		1	Display	ALT3
	SET4_3	0	Hide	HYSA
		1	Display	HYSA
	SET4_4	0	Hide	CLO1 CHO1
		1	Display	CLO1 CHO1

5225	SET5_1	0	Hide	CLO2 CHO2
		1	Display	CLO2 CHO2
	SET5_2	0	Hide	CLO3 CHO3
		1	Display	CLO3 CHO3
	SET5_3	0	Hide	RUCY WAIT SETA
		1	Display	RUCY WAIT SETA
	SET5_4	0	Hide	PSL BITS IDNO BAUD
		1	Display	PSL BITS IDNO BAUD

5226	SET6_1	0	Hide	SVOS
		1	Display	SVOS
	SET6_2	0	Hide	PVOS
		1	Display	PVOS
	SET6_3	0	Hide	UNIT
		1	Display	UNIT
	SET6_4	0	Hide	PVFT
		1	Display	PVFT

5227	SET7_1	0	Hide	PV2
		1	Display	PV2
	SET7_2	0	Hide	OULD
		1	Display	OULD
	SET7_3	0	Hide	OPAD
		1	Display	OPAD
	SET7_4	0	Hide	HZ
		1	Display	HZ

5228	SET8_1	0	Program not repeat		
		1	Program repeat		
	SET8_2	0	No power failure option		
		1	With power failure option		
	SET8_3	0	Program starts from 0		
		1	Program starts from PV		
	SET8_4	0	Hide	NOIS MLNB COMP OFFS	
		1	Display	NOIS MLNB COMP OFFS	

5229	SET9_1	0	Disable Artificial Linearization Compensating		
		1	Enable Artificial Linearization Compensating		
	SET9_2	0	Program Timer Unit = "Hour : Minute"		
		1	Program Timer Unit = "Minute : Second"		
	SET9_3	0	Disable transmission SV		
		1	Enable transmission SV		
	SET9_4	0	Disable transmission PV		
		1	Enable transmission PV		

5230	SET0_1	0	TTL Communication (Slave)		
		1	TTL Communication (Master)		
	SET0_2	0	Hide	RATE	
		1	Display	RATE	
	SET0_3	0	Disable Remote SV function		
		1	Enable Remote SV function		
	SET0_4	0	use output relay "b" contact when motor valve closed		
		1	use output relay "a" contact when motor valve closed		

12.1 Alarm Mode

▲ : SV △ : Alarm set value X : 1 / 2 / 3 (There are up to 3 sets of alarms)

ALDX	Alarm mode	Description
0	No alarm function	Not drive any alarm relays and the corresponding LED lamp.
1	Deviation high (With hold action)	
		<p>Formula</p> $PV \geq (SV+ALX) \rightarrow \text{Alarm ON}$ $PV \leq (SV+ALX-HYSX) \rightarrow \text{Alarm OFF}$
2	Deviation low (With hold action)	<p>*ALX must to be set to a negative value</p>
		<p>Formula</p> $PV \leq (SV+ALX) \rightarrow \text{Alarm ON}$ $PV \geq (SV+ALX+HYSX) \rightarrow \text{Alarm OFF}$
3	Deviation high/low (With hold action)	
		<p>Formula</p> $PV \geq (SV+ALX) \rightarrow \text{Alarm ON}$ $PV \leq (SV-ALX) \rightarrow \text{Alarm ON}$ $PV \geq (SV-ALX+HYSX) \rightarrow \text{Alarm OFF}$ $PV \leq (SV+ALX-HYSX) \rightarrow \text{Alarm OFF}$
4	Band (With hold action)	
		<p>Formula</p> $PV \leq (SV+ALX) \rightarrow \text{Alarm ON}$ $PV > (SV-ALX) \rightarrow \text{Alarm ON}$ $PV \geq (SV+ALX) \rightarrow \text{Alarm OFF}$ $PV < (SV-ALX) \rightarrow \text{Alarm OFF}$
5	Process high (With hold action)	
		<p>Formula</p> $PV \geq ALX \rightarrow \text{Alarm ON}$ $PV \leq (ALX-HYSX) \rightarrow \text{Alarm OFF}$
6	Process low (With hold action)	
		<p>Formula</p> $PV \leq ALX \rightarrow \text{Alarm ON}$ $PV \geq (ALX+HYSX) \rightarrow \text{Alarm OFF}$
7	Segment execute alarm	When SEG=ALX alarm ON *This mode only available in program type controller
8	System error	The Alert action, when PV displays error message
9	HBA (Heater Break Alarm)	<p>Activated conditions :</p> <ol style="list-style-type: none"> 1. Heater current is less the HBAC set value 2. OUT1 manipulated value exceed HBOP set value 3. Conditions of 1 & 2 above are established and continue to exceed 20 seconds. <p>*Please refer to Chapter 11.4 *This mode only available in ALD1 or ALD2</p>
	Single RAMP	Please refer to Chapter 11.7 This mode only available in ALD3

12.1 Alarm Mode

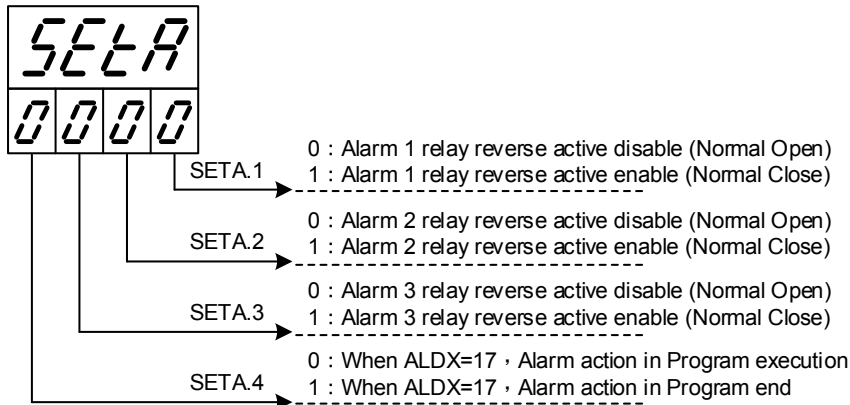
▲ : SV △ : Alarm set value X : 1 / 2 / 3 (There are up to 3 sets of alarms)

ALDX	Alarm mode	Description
10	SOAK_A	<p>Boot completed, the alarm is ON, when $PV \geq \text{target SV}$ start the timer, alarm and control function are turned OFF in timed out.</p> <p>If the RAMP function is used, even if the RAMP SV has not reached the target SV, the timer will start counting as long as the condition $PV \geq \text{target SV}$ is met.</p> <p>*Please refer to Chapter 11.7 *This mode only available in ALD1 or ALD2 *In this mode, the time format is fixed to "hour.minute"</p>
11	Deviation high	<div style="text-align: center;"> </div> <p>Formula $PV \geq (SV+ALX) \rightarrow \text{Alarm ON}$ $PV \leq (SV+ALX-HYSA) \rightarrow \text{Alarm OFF}$</p>
12	Deviation low	<div style="text-align: center;"> </div> <p>*ALX must to be set to a negative value</p> <p>Formula $PV \leq (SV+ALX) \rightarrow \text{Alarm ON}$ $PV \geq (SV+ALX+HYSA) \rightarrow \text{Alarm OFF}$</p>
13	Deviation high/low	<div style="text-align: center;"> </div> <p>Formula $PV \geq (SV+ALX) \rightarrow \text{Alarm ON}$ $PV \leq (SV-ALX) \rightarrow \text{Alarm ON}$ $PV \geq (SV-ALX+HYSA) \rightarrow \text{Alarm OFF}$ $PV \leq (SV+ALX-HYSA) \rightarrow \text{Alarm OFF}$</p>
14	Band	<div style="text-align: center;"> </div> <p>Formula $PV \leq (SV+ALX) \rightarrow \text{Alarm ON}$ $PV > (SV-ALX) \rightarrow \text{Alarm ON}$ $PV \geq (SV+ALX) \rightarrow \text{Alarm OFF}$ $PV < (SV-ALX) \rightarrow \text{Alarm OFF}$</p>
15	Process high	<div style="text-align: center;"> </div> <p>Formula $PV \geq ALX \rightarrow \text{Alarm ON}$ $PV \leq (ALX+HYSA) \rightarrow \text{Alarm OFF}$</p>
16	Process low	<div style="text-align: center;"> </div> <p>Formula $PV \leq ALX \rightarrow \text{Alarm ON}$ $PV \geq (ALX+HYSA) \rightarrow \text{Alarm OFF}$</p>
17	Program run	<p>SETA.4=0 When program execution, alarm action SETA.4=1 When program end, alarm action *This mode only available in program type controller</p>
18	System normal	The Alert action, when system in normal condition (no-error message)

12.1 Alarm Mode

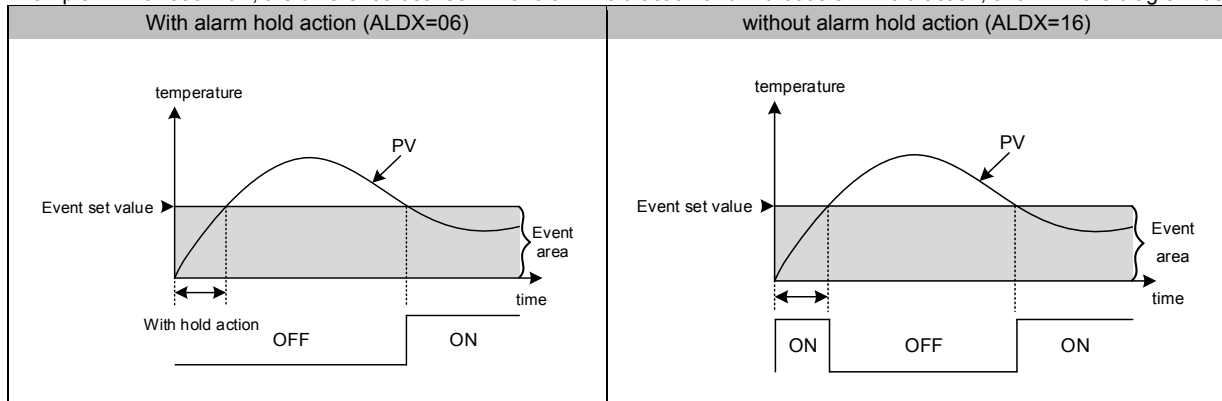
ALDX	Alarm mode	Description
19	SOAK_B	<p>Boot completed, the alarm is OFF, when $PV \geq \text{target SV}$ start the timer, alarm is turned ON and the control function keep ON in timed out.</p> <p>If the RAMP function is used, even if the RAMP SV has not reached the target SV, the timer will start counting as long as the condition $PV \geq \text{target SV}$ is met.</p> <p>*Please refer to Chapter 11.7 *This mode only available in ALD1 or ALD2 *In this mode, the time format is fixed to "hour.minute"</p>

12.2 Alarm Special Setting



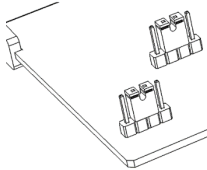
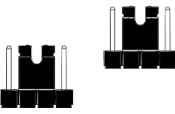
12.3 Alarm Example

Example 1 : Deviation low, the difference between With alarm hold action and without alarm hold action, shown in the diagram below

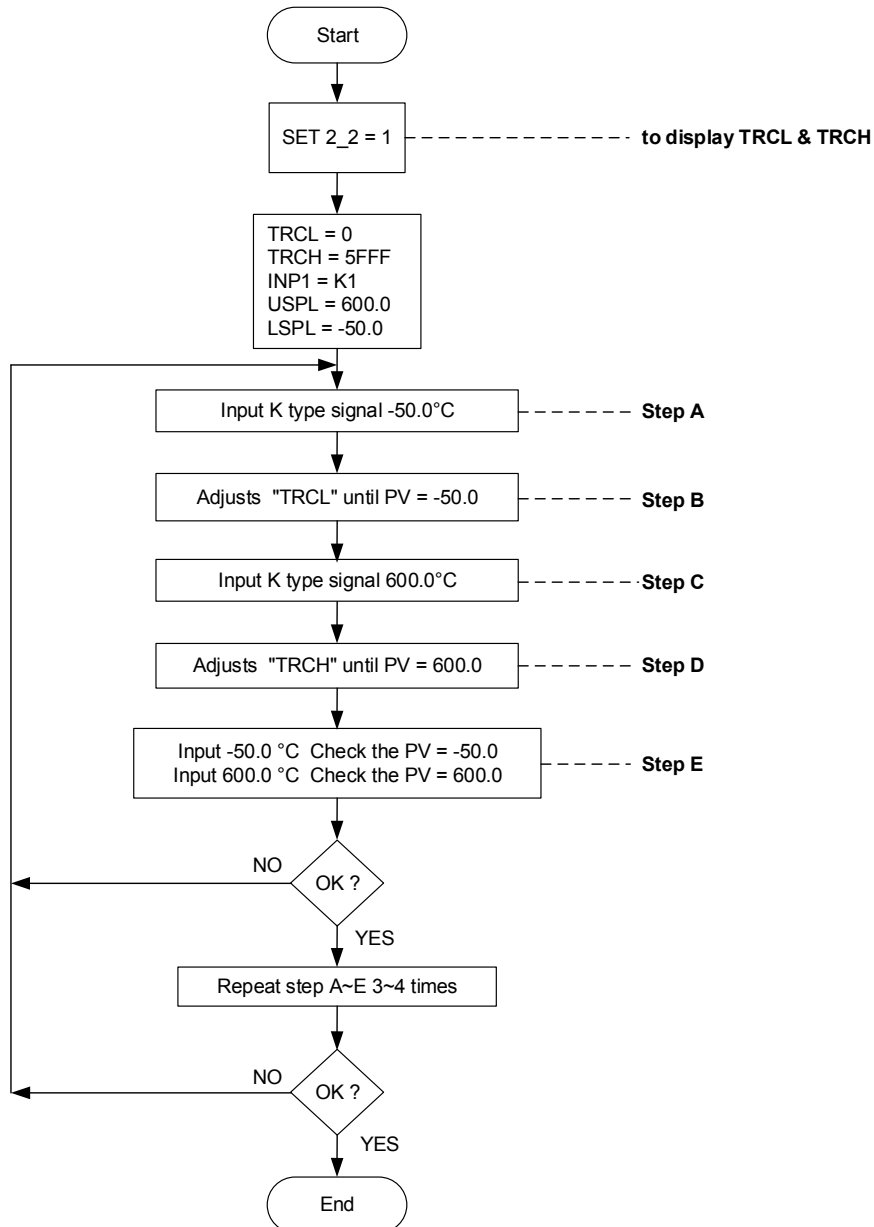


15. Modification of Input Signal

15.1 Input modify to thermocouple

Jumper Position		Software Setting
Plug 2 pcs of Jumper in the middle slot as shown		
		Parameter set as "INP1=K1~L"

Thermocouple calibration flowchart



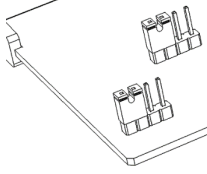
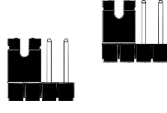
Set the range you want

Ex: Low = 0.0 , High = 200.0
Set LSPL = 0.0 , USPL = 200.0

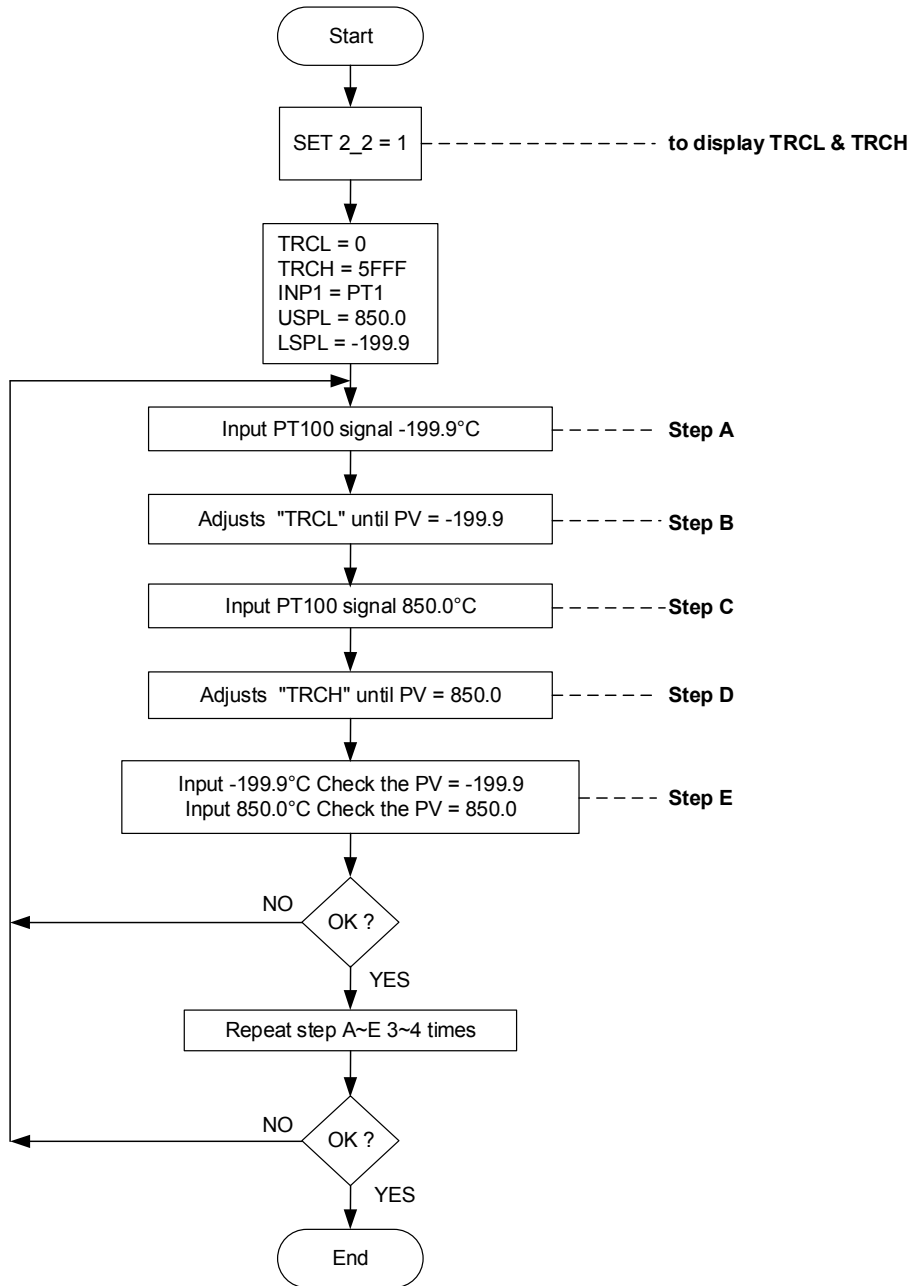
Notes

In theory, when input is thermocouple or PT100, it has been calibrated and tested at the factory, the user does not need to recalibrate, if the error is too large, please contact the factory.

15.2 Input modify to RTD

Jumper Position		Software Setting
Plug 2 pcs of Jumper in the left slot as shown		
		Parameter set as "INP1=PT1~PT3"

RTD calibration flowchart



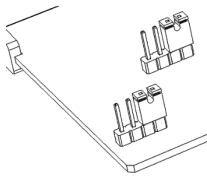
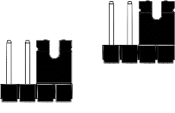
Set the range you want

Ex: Low = 0.0 , High = 200.0
Set LSPL = 0.0 , USPL = 200.0

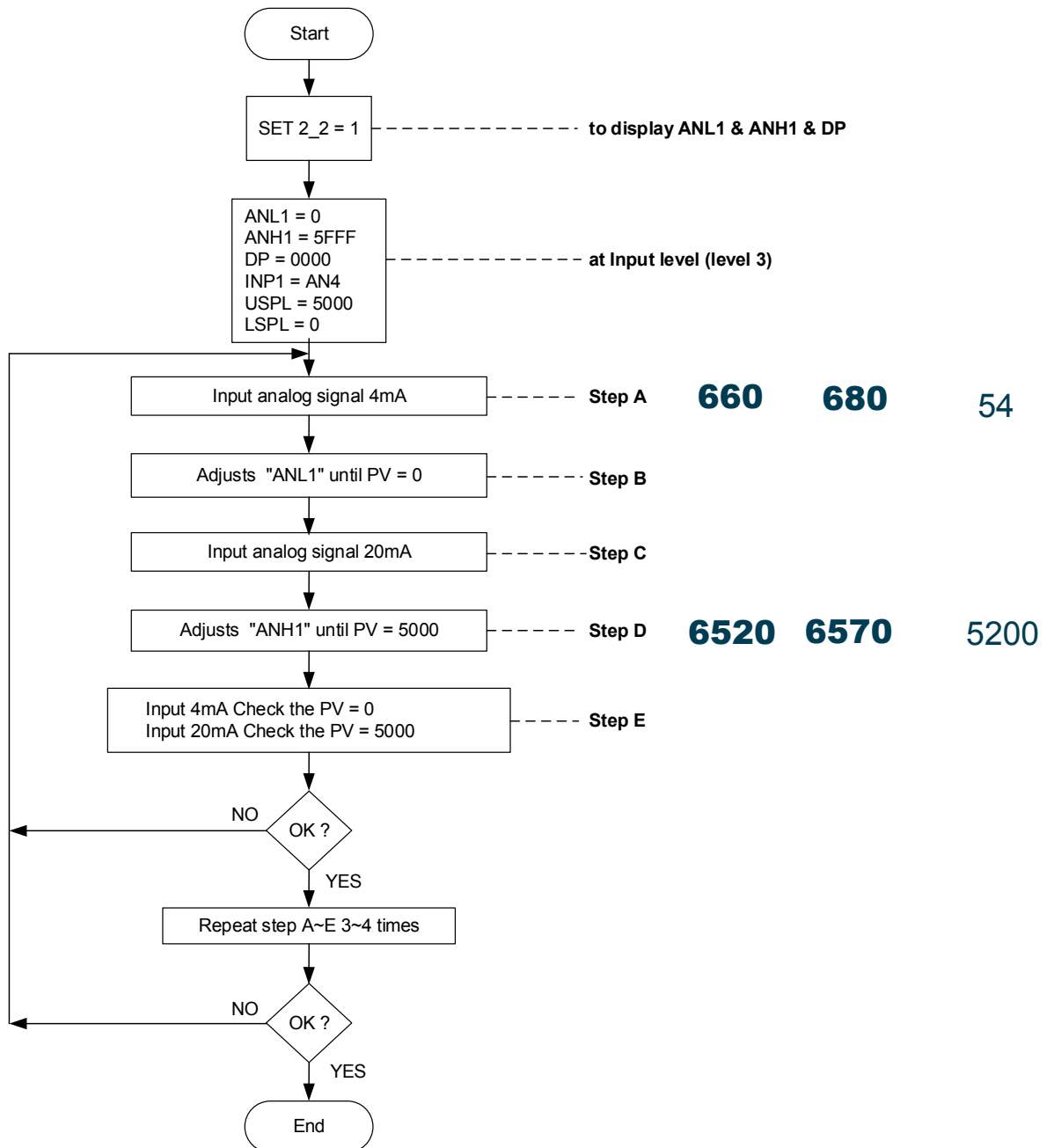
Notes

In theory, when input is thermocouple or PT100, it has been calibrated and tested at the factory, the user does not need to recalibrate, if the error is too large, please contact the factory.

15.3 Input modify to Linear (4~20mA)

Jumper Position		Software Setting
Plug 2 pcs of Jumper in the right slot as shown		
		Parameter set as "INP1=AN4"

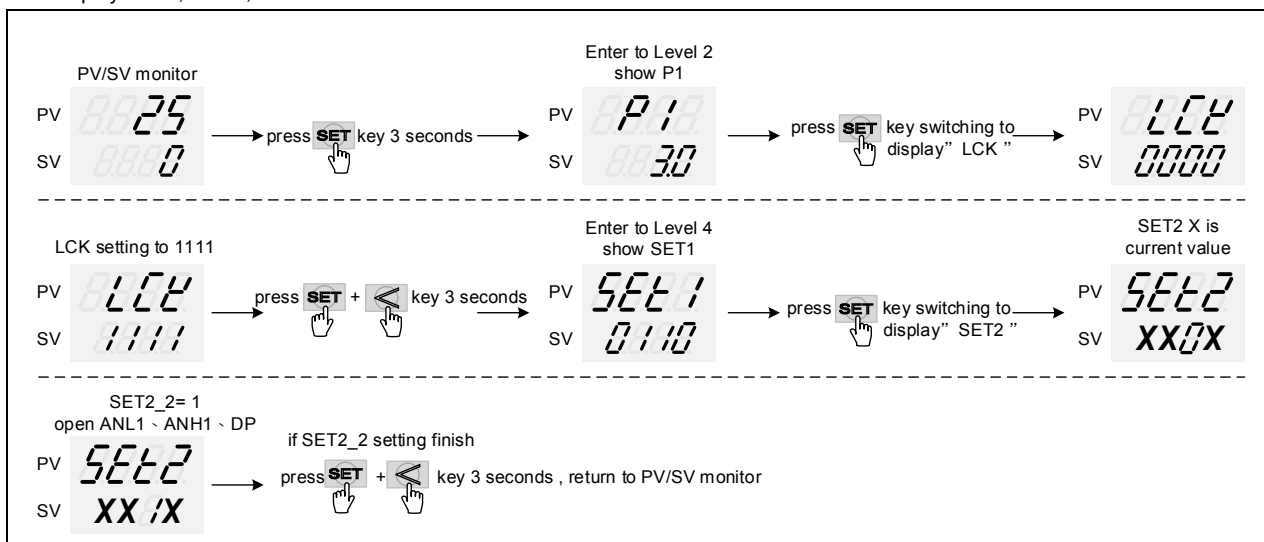
Linear analog signal (4~20mA) calibration flowchart



Set the range you want
 Ex: Low = -10.0, High = 10.0
 Set LSPL = -10.0, USPL = 10.0, DP : 000.0

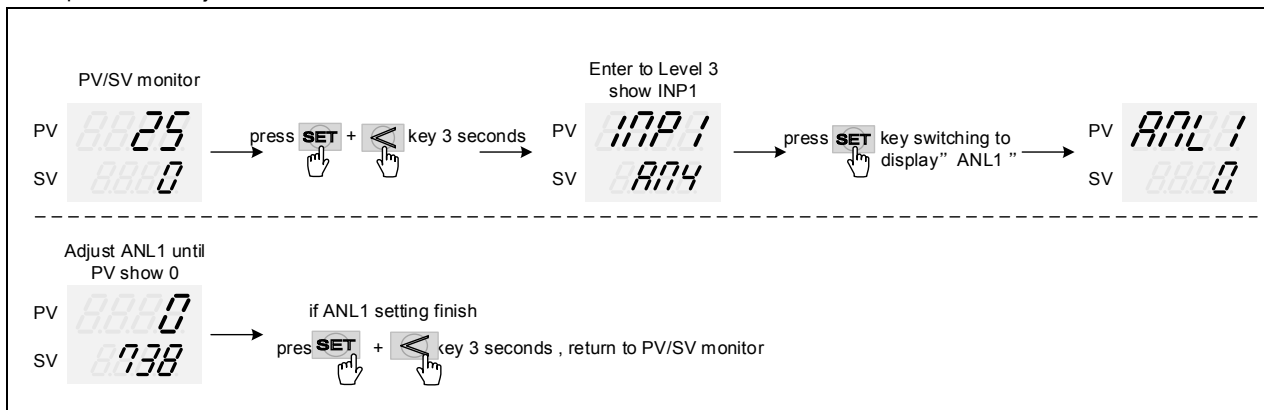
15.4 Steps For Linear Input Calibration

1. Display ANL1, ANH1, DP :



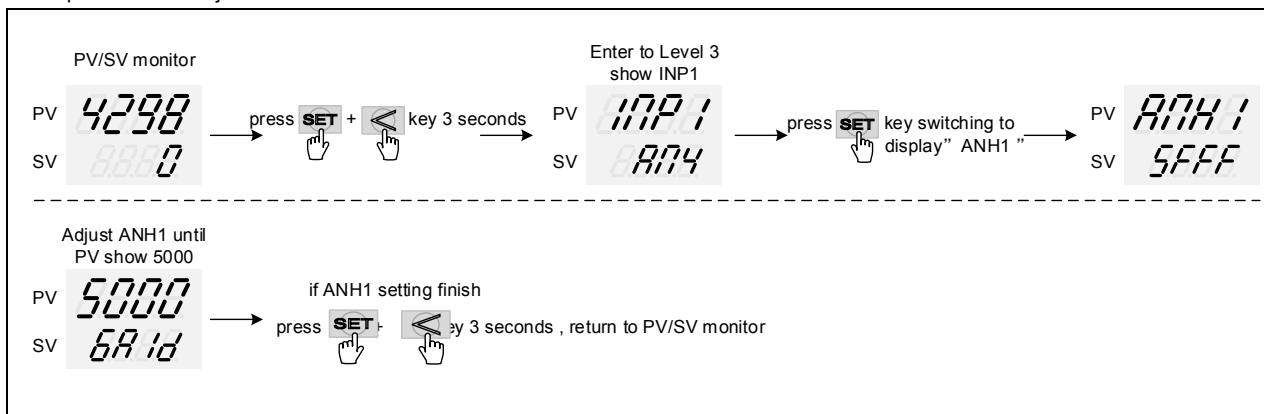
※ X is the default value which does not require modification

2. input 4mA and djust ANL1 calibration values :



※ ANL1 calibration value of each controller is different from the other

3. input 20mA and djust ANH1 calibration values :





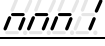

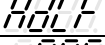


※ ANH1 calibration value of each controller is different from the other

Notes

1. Assume that the controller input type ordered is a linear signal. If user want to change it to thermocouple or PT100, be sure to restore ANL1 & ANH1 to 0 and 5FFF.
2. In theory, when input is thermocouple or PT100, it has been calibrated and tested at the factory, the user does not need to recalibrate, if the error is too large, please contact the factory.

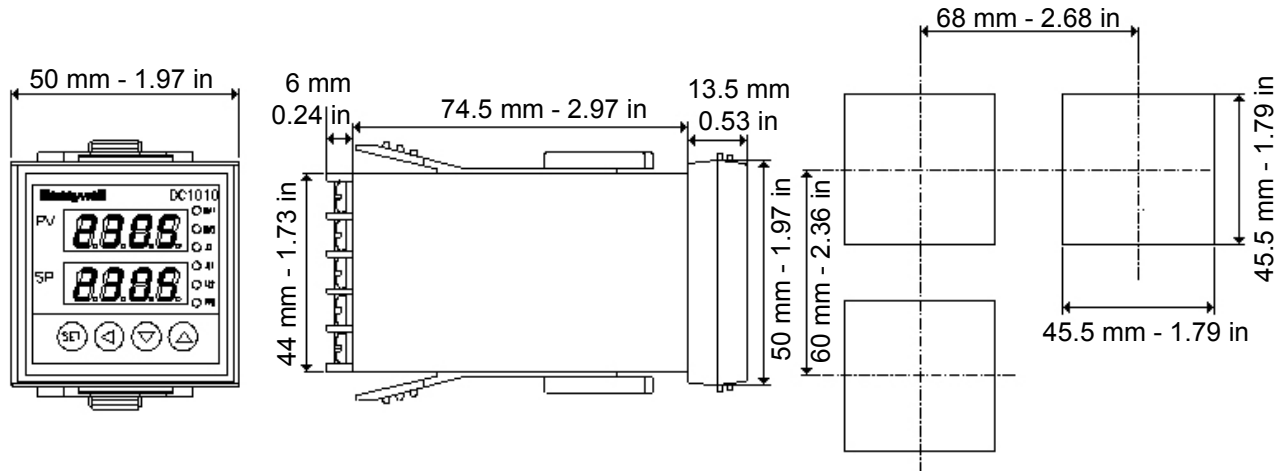
17. Troubleshooting

This chapter describes error displays and procedures to follow when problems occur.

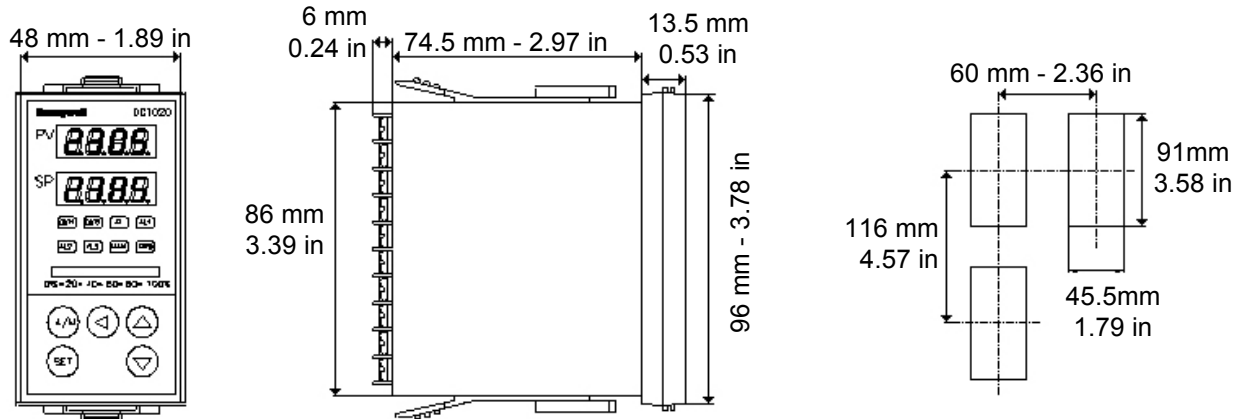
Symbol	Text	description	Solution
	IN1E	Input1 Error	Check whether input loop is opened or wiring is incorrect.
	UUU1	PV is above USPL	Check whether the input value or input type is correct or not.
	NNN1	PV is below LSPL	Check whether the input value or input type is correct or not.
	AUTF	Auto-tuning failure	Manually set the PID value
	ADCF	A/D convert failed	Send for repair.
	RAMF	EEPROM failed	Send for repair.
	CJCE	Cold junction diode failure	Send for repair.

EXTERNAL DIMENSIONS, PANEL CUTOUT

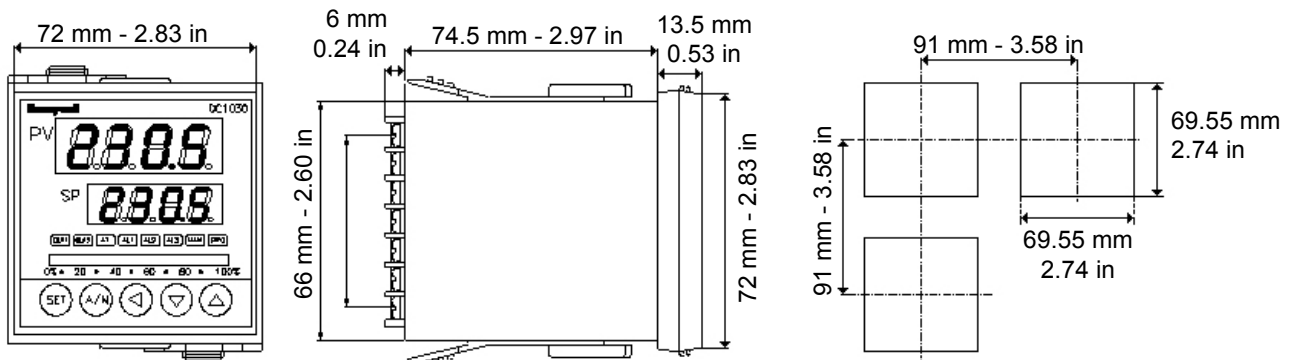
DC1010



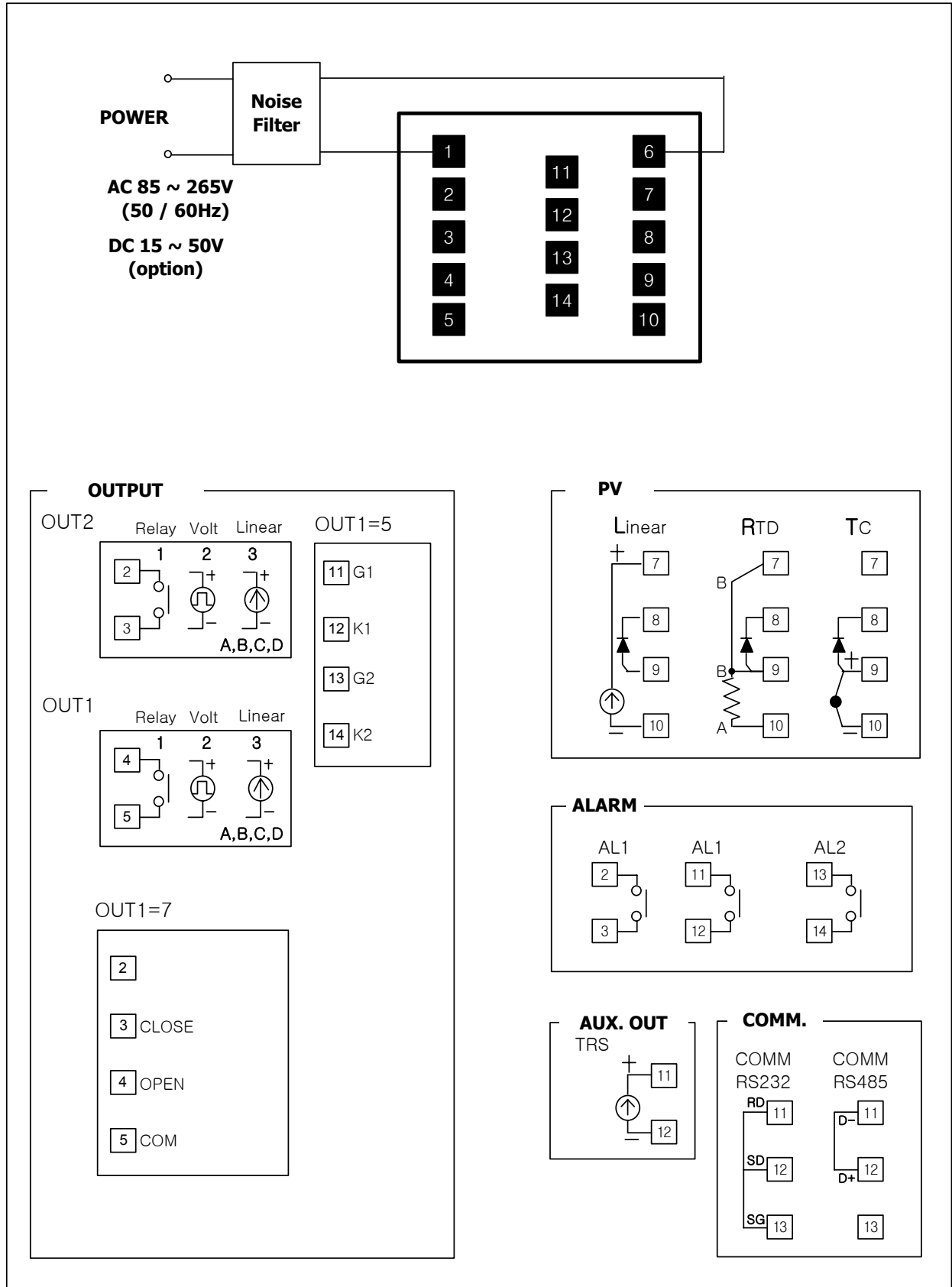
DC1020



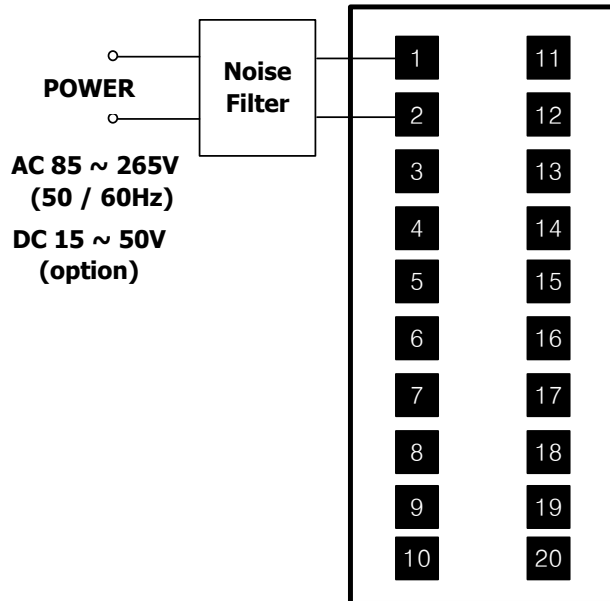
DC1030



WIRING DIAGRAM DC1010

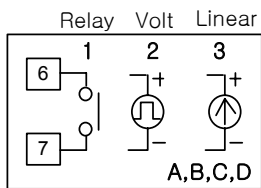


DC1020

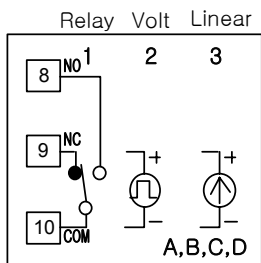


OUTPUT

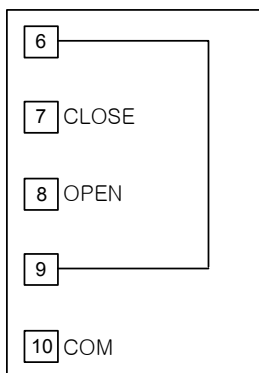
OUT2



OUT1

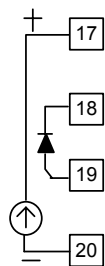


OUT1=7

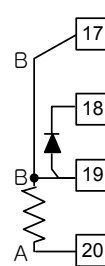


PV

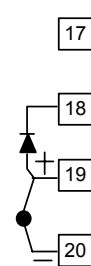
Linear



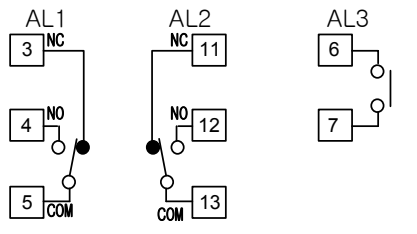
RTD



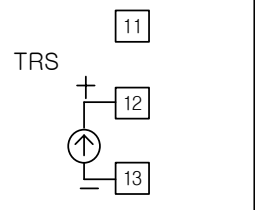
Tc



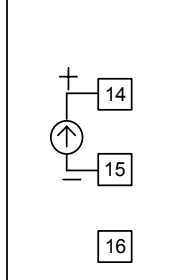
ALARM



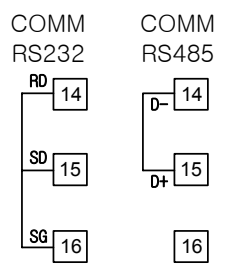
AUX. OUT



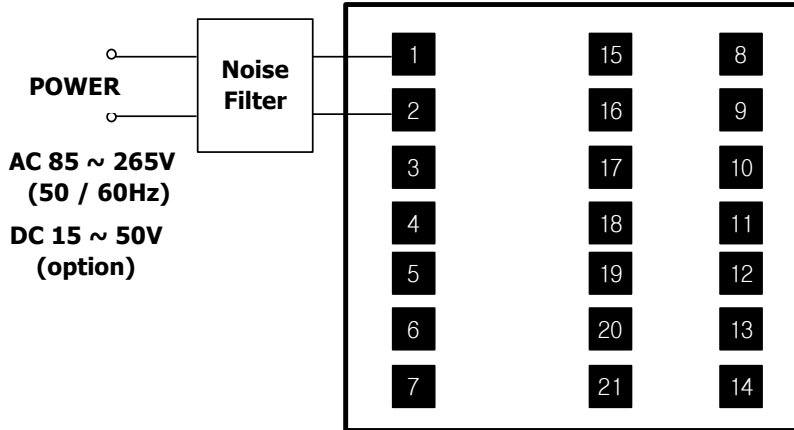
INPUT2



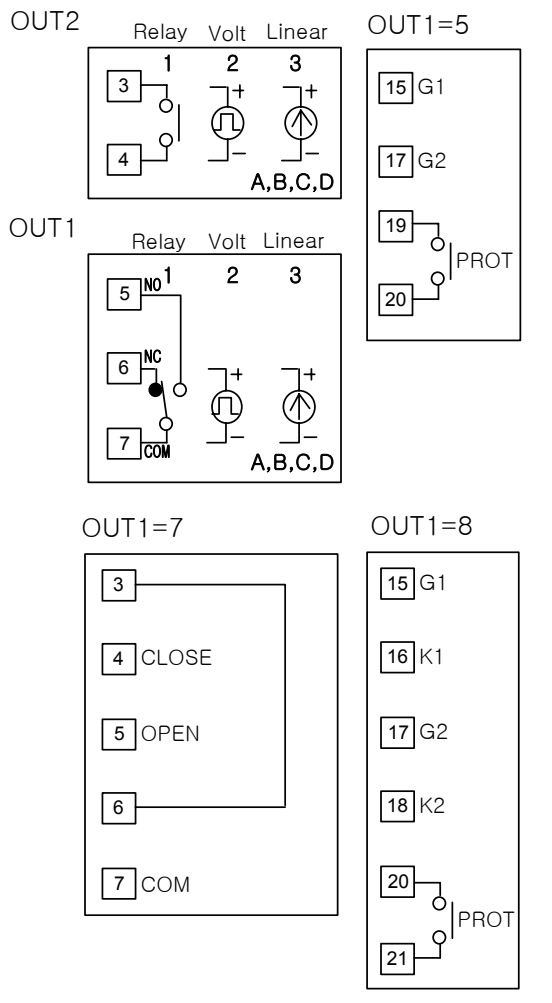
COMM.



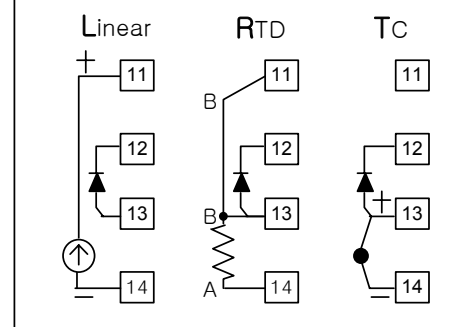
DC1030



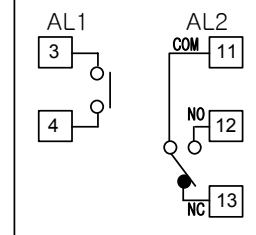
OUTPUT



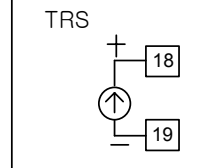
PV



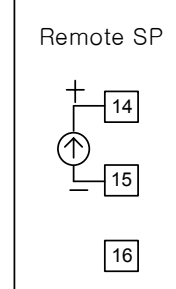
ALARM



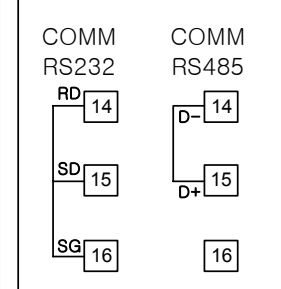
AUX. OUT



INPUT2



COMM.



DC1040

