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DESCRIPTION

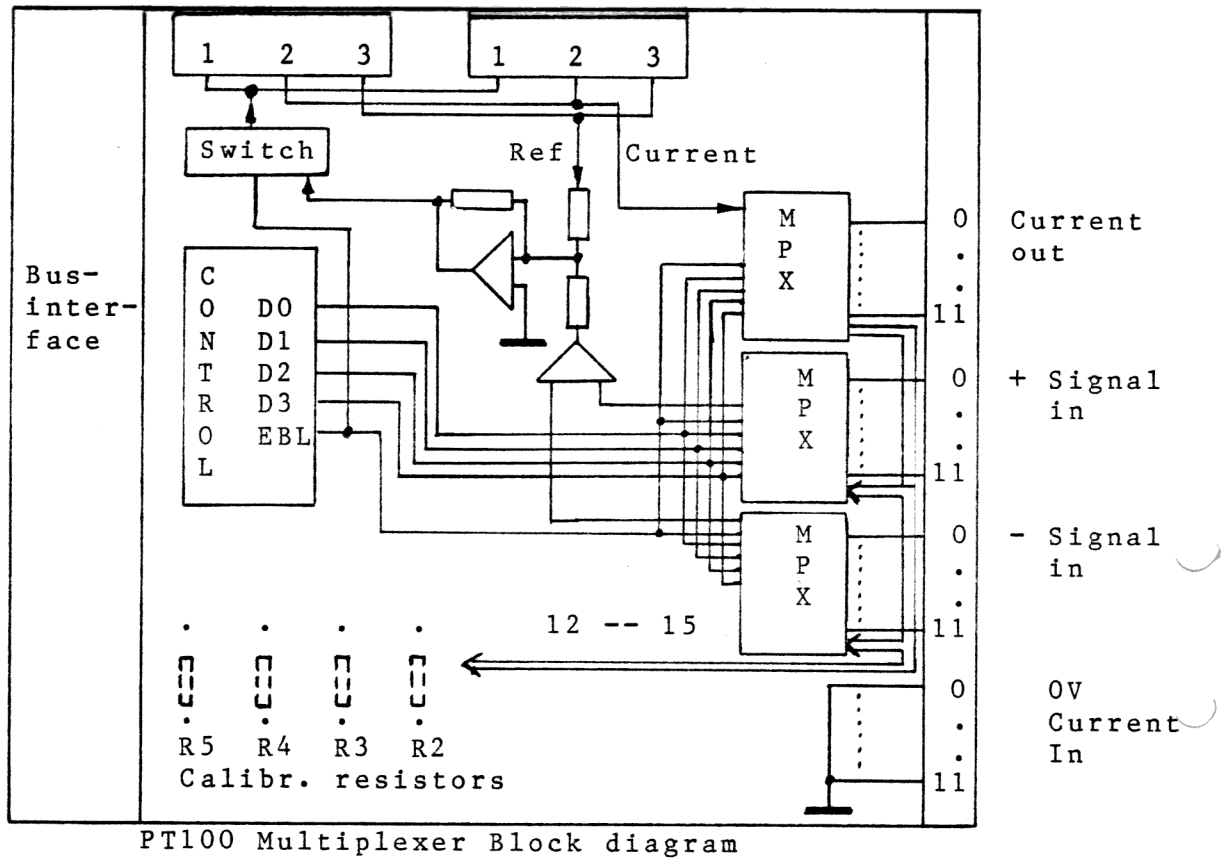
- The PT100 multiplexor card can be connected to 12 PT100 transducers.
- Several MPX cards can be connected in parallel to the converter card.
- The current is multiplexed out to the transducers for measurement.
- The voltage signal is amplified on the MPX card and biased, by subtracting a part of the reference voltage, before sending the signal to the conversion card. The bias transforms the temperature range to be -50 degrees - +150 degrees Celsius. The resolution is 1/4096 of the full measuring range. As standard ca +/- 0.05 degrees Celsius is achieved.
- Selection of measuring range is done with an exchangeable module on the MPX card.
- Modules for other measurement ranges can also be delivered.
- To simplify calibration, the card includes four positions for calibration resistors. These on-board resistors are addressed as channel 12 - 15 and are marked R2 ... R5 on the card.

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BESKRIVNING

- Till PT100 multiplexerkortet kan anslutas 12 st. PT100-givare.
- Flera MPX kort kan anslutas parallellt till omvandlarkortet.
- Strömmen till givarna multiplexas vid tidpunkten för mätning.
- Signalen från givarna förstärks på MPX-kortet, varvid mätområdet begränsas åt den kalla sidan genom att en del av referensen dras ifrån innan mätsignalen går vidare till omvandlarkortet. Därvid blir temperaturområdet -50 grader .. +150 grader C. Upplösningen blir därmed 1/4096 av fullt mätområde. Som standard erhålles ca +/- 0.05 grader Celsius.
- Val av mätområde sker via en utbytbar modul på multiplexerkortet.
- Moduler för andra mätområden kan även levereras.
- För att kunna kalibrera systemet med programvara, finns fyra platser på kortet för kalibreringsmotstånd. Dessa kalibreringsmotstånd ligger på kanal 12 - 15 och är märkta R2 ... R5.

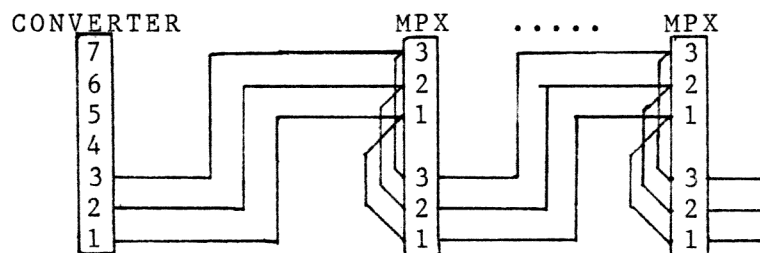
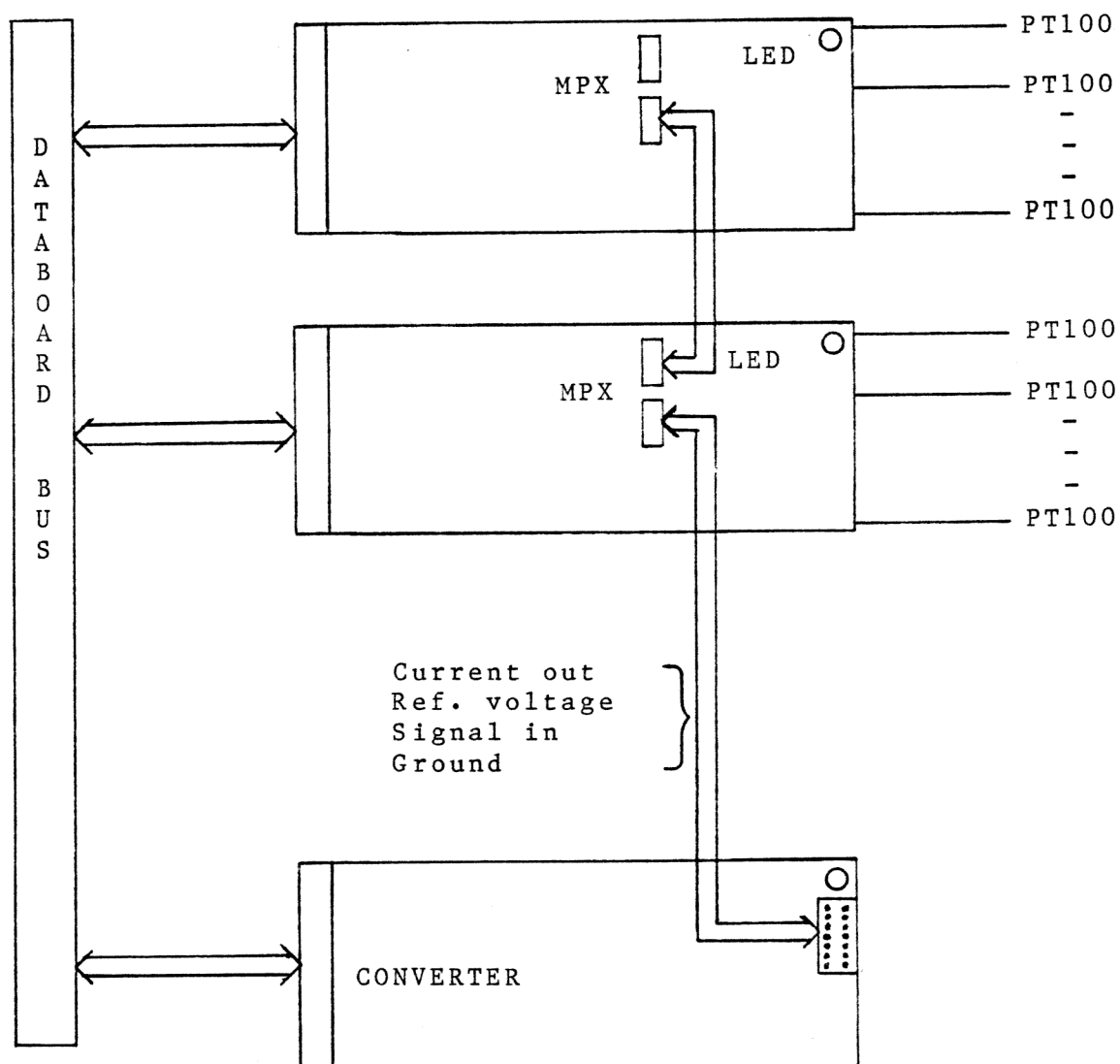
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TECHNICAL DATA
TEKNISKA DATA

Power supply:	+5V/+5%
Spänningsmatning:	+12V/+5% or +15V/+5%
	-12V/+5% or -15V/+5%
Bus connection:	I/O side. B 64 pin Euroconnector
Buss anslutning:	DIN 41612
I/O connector:	To transducers: DIN 41612 Euroconnector
I/O kontakt:	To the converter: 6-pin connector
	To other MPX.: 6-pin connector
Measuring range:	Depending on the selected module.
Mätområde:	Standard gives -50 ... +150 degr.Cels.
	Beroende på vald modul.
Resolution:	1/4096 of the full range.
Upplösning:	Depending on the selected range module.
	Standard gives +-0.05 degrees Celsius.
Calibration positions:	Four positions for calibration
Kalibreringsmotstånd:	resistors are available on the card.
	Plats för fyra kalibreringsmotstånd finns på kortet.
Connection:	Several MPX can be connected in
Inkoppling:	Flera MPX-kort kan kopplas parallellt.

MEASURING SYSTEM CONFIGURATION



COMMANDS

KOMMANDON

- | | |
|--|---|
| - Card select is done with the CS strobe. | - Kortval görs med CS-stroben. |
| - The MPX address is output with the OUT strobe together with the enable command for the MPX card. | - Med OUT stroben lägges MPX-adressen ut samtidigt som multiplexerkortet enablas. |
| - OBS! Disable other MPX cards before a new card is enabled! OUT 0,0 gives disable. | - OBS! Disabla andra MPX kort innan ett nytt MPX enablas! Disable kommandot är OUT 0,0. |
| - Select the converter card. | - Välj in omvandlarkortet. |
| - Preset the counters. | - Förinställ räknaren. |
| - Wait for the signal to stabilize. | - Vänta tills signalen stabiliserats. |
| - Read in the results with the STAT and INP strobes. | - Läs in resultatet med STAT och INP strobarna. |

CS Card select.

```

Assemb.  OUT 1
Fortran  OUTPUT(1)=A
Basic    OUT 1,A
Pascal   OUT(1,A)

```

OUT		Set multiplexer address and enable switches	
Assemb.	OUT 0	D0	
Fortran	OUTPUT(0)=B	D1	MPX address (0 - 11)
Basic	OUT 0,B	D2	(or 12-15 for calibr.)
Pascal	OUT(0,B)	D3	
		D4	Enable MPX (Current to transd.,
		D5	Not used Connect signal to
		D6	Not used converter card,
		D7	Not used active 1)

EX. OUT 0,0 gives disable of the selected MPX card.

Ex. OUT 0,23 , Select MPX 7 and enable the MPX card

PT100 I/O-connector

			A	B			
NC			. 1 .	NC			
NC			. 2 .	NC			
NC			. 3 .	NC			

CURRENT OUT (+)			. 4 .	CURRENT IN (-)	Channel 0		
SIGNAL (-)			. 5 .	SIGNAL (+)			

Current out (+)			. 6 .	Current in (-)	Channel 1		
Signal (-)			. 7 .	Signal (+)			

Current out (+)			. 8 .	Current in (-)	Channel 2		
Signal (-)			. 9 .	Signal (+)			

Current out (+)			. 10 .	Current in (-)	Channel 3		
Signal (-)			. 11 .	Signal in (+)			

Current out (+)			. 12 .	Current in (-)	Channel 4		
Signal (-)			. 13 .	Signal (+)			

Current out (+)			. 14 .	Current in (-)	Channel 5		
Signal (-)			. 15 .	Signal (+)			

Current out (+)			. 16 .	Current in (-)	Channel 6		
Signal (-)			. 17 .	Signal (+)			

Current out (+)			. 18 .	Current in (-)	Channel 7		
Signal (-)			. 19 .	Signal (+)			

			. 20 .		Channel 8		
			. 21 .				

			. 22 .		Channel 9		
			. 23 .				

			. 24 .		Channel 10		
			. 25 .				

			. 26 .		Channel 11		
			. 27 .				

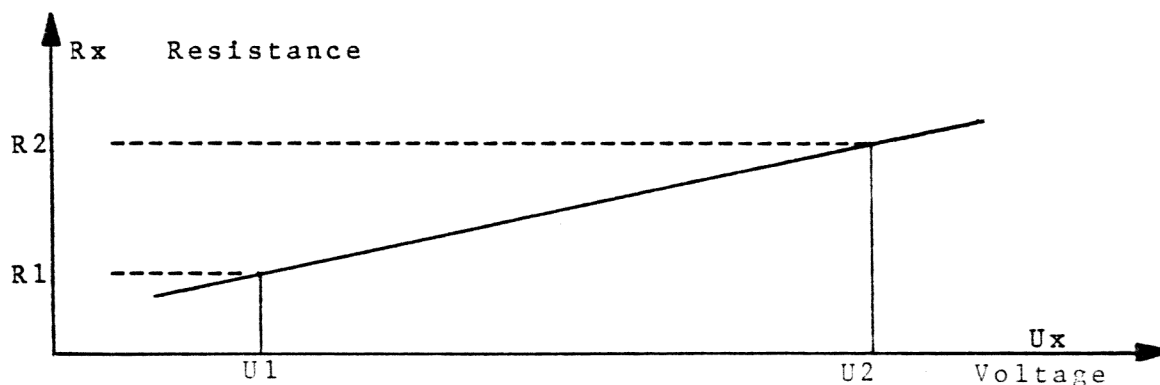
NC			. 28 .	NC			
NC			. 29 .	NC			
NC			. 30 .	NC			
NC			. 31 .	NC			
NC			. 32 .	NC			

CALIBRATION

- The calibration to achieve the resistance from the measured voltage, is done using at least two calibration resistors, normally mounted on the MPX board.
- The voltage across these resistors are read from the MPX-channels 12 - 15 regularly with the user program and the calibration-constants are recalculated.

KALIBRERING

- Kalibrering av resistans via uppmätt spänning görs med minst två kalibreringsresistanser, lämpligen monterade på MPX kortet.
- Spänningen över dessa resistanser läses från MPX-kanalerna 12 - 15 regelbundet med användarprogrammet, varvid kalibreringskonstanterna beräknas.



Formula: $R_x = K * U_x + L$

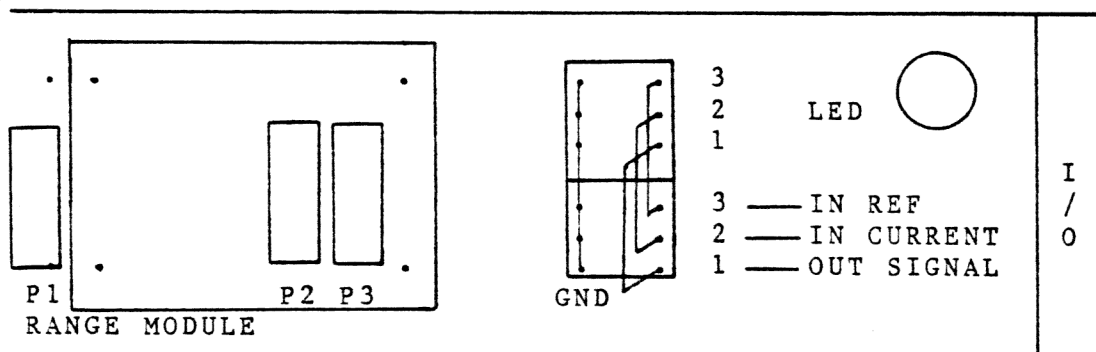
Using two calibration resistors R1 and R2 =>

$$K = (R_2 - R_1) / (U_2 - U_1)$$

$$L = ((U_2 * R_1) - (U_1 * R_2)) / (U_2 - U_1)$$

COMPONENT POSITIONS

KOMPONENTPLACERING



The potentiometers P1,P2,P3 are preset at delivery, and should not need adjusting.

P1 : DC - offset

P2,P3 : Sensitivity and zero level. P2 controls the gain for the REF signal and P3 controls the input signal gain.

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PROGRAM EXAMPLE

10 DIM R(15)
20 DIM X(15)
30 DIM T(15)
40 REM INITIATE VALUES ON THE CALIBRATION RESISTORS
50 R(15)=100 : R(14)=152.42
60 REM SCAN CHANNEL 0 TO 15 ON THE MULTIPLEXER
70 FOR I%=0% TO 15%
80 GOSUB 310
90 NEXT I%
100 REM EQUATION OF A STRAIGHT LINE Y=K*X+L
110 REM CALCULATE 'K' AND 'L' FROM MEASURED VALUES
120 REM
130 REM
140 K=(R(14%)-R(15%))/(X(14%)-X(15%))
150 L=(X(14%)*R(15%)-X(15%)*R(14%))
160 L=L/(X(14%)-X(15%))
170 REM CALCULATE THE RESISTANCE AND THE TEMPERATURE FOR EACH
180 REM
190 REM
200 FOR I%=0% TO 11%
210 R(I%)=X(I%)*K+L
220 T(I%)=6195.2*R(I%)/(2619.1-R(I%))
230 T(I%)=T(I%)-245.93
240 IF R(I%)<100 T(I%)=.997861*T(I%)
250 ;X(I%),R(I%),T(I%) PRINT
260 NEXT I%
270 ;X(14%)PRINT
280 ;X(15%)PRINT
290 GOTO 70
300 REM SELECT THE MULTIPLEXER CARD
310 OUT 1%,255%
320 REM SELECT CHANNEL (PT100-TRANSDUCER) AND ENABLE THE MPX:S
330 OUT 0%,16%+I%
340 REM      DY I=ADDRESS
350 REM SELECT CONVERTER CARD
360 OUT 1%,0%
370 REM PRESET THE COUNTER WITH THE PREVIOUS VALUE
380 REM
390 X1%=X(I%)
400 OUT 0%,X1% AND 255%
410 OUT 2%,X1%/256%
420 OUT 1%,100%
430 REM WAIT
440 FOR N1%=1% TO 2000% : NEXT N1%
450 OUT 1%,0%
460 REM READ IN THE RESULTS. MASK NON-USED BITS.
470 X%=(15% AND INP(1%))*256%+INP(0%)
480 OUT 1%,100%
490 X(I%)=X%
500 RETURN

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This datasheet information is subject to change without notice.

