

Instruction Manual

PARAMETER LOADER FOR PAPERLESS RECORDER

TYPE: PHL

WARNING

- If an error or improper operation occurs in our product, or customer-made programs should be found defective, protection and safety circuits, etc should be provided for safety of the system to be used. In addition, safety measures should be taken against personal injury or fatal accident to the system.
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- Although we always keep track of the information contained herein to assure accuracy, Fuji will not be responsible for any damage to the system due to mistakes, skip or misuse in writing
- Be sure to read the Readme.text file included in CD-ROM.
- Depending on the environment to be used and the usage, it may not operate normally.
- Please note that operation except the Personal Computer which made by maker, such as self-assembled PC and so on, cannot be guaranteed.

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Request

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Issued in March, 2004

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1. OUTLINE

1.1 Foreword

This instruction manual describes installation and operation for the parameter loader of the paperless recorder. Read it carefully before use.

1.2 Parameter loader for paperless recorder

The parameter loader (hereinafter referred to as Loader) for the paperless recorder allows you to view (upload), edit, and set (download) parameters for the paperless recorder by connecting dedicated cable (option) of the Loader to the paperless recorder.

1.3 Contents of package

The following items are packaged with the product.

- CD-ROM for installation: 1
- Instruction manual which is installed to above CD-ROM

1.4 Recommended operating environment

- Microsoft Windows 98, 2000 or XP.
- Hard disk with a free capacity of 30MB or more
- RAM with 64MB or more
- RS-232C serial port
- Communication cable dedicated to parameter loader only (Option: PHZP0201)
 - Note: 1) Operation by the self-made AT compatible machine and the remodeling machine is not secured.

Trouble might be caused in operation in a part of AT compatible machine or OS.

2) Operation by Windows 95/Me/NT is not secured.

1.5 Installing the parameter loader for paperless recorder

- 1) If other application software programs are open, terminate all of them.
- 2) If the programming loader has been already installed, open "Add/Remove Programs" on Control Panel and delete the parameter loader.
- 3) Set CD-ROM in the personal computer drive.
- 4) Execute "E_top.pdf" saved at "English" folder in the CD-ROM.
- 5) Follow the prompts displayed on the screen.
- 6) A message is displayed, prompting you to verify that "Parameter loader setup is complete". Now, the Parameter Loader installation is completed.

1.6 Uninstalling the parameter loader software for paperless recorder

Follow Windows operation.

In case of installation of new loader software, you should delete current loader software which you use before installation of new loader software.

1.7 Cautions

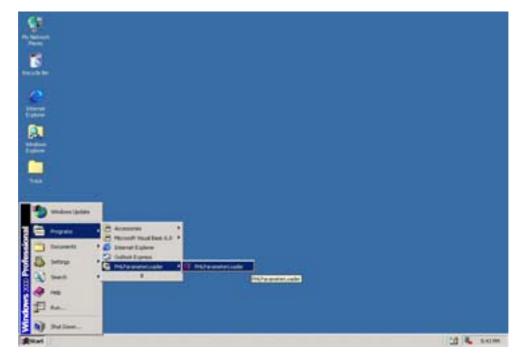
When operating the Loader, be careful of the following items:

- Before starting the paperless recorder, be sure to assure that the Loader setting is reflected to the paperless recorder.
- For the communication setting for the paperless recorder ("Main Unit Set" → "System Setting"), the MODBUS communication function should be set to ON. After the MODBUS communication function has been switched from OFF to ON, turn OFF the power once, and then turn it ON.
- The Loader cannot use more than 1 window at the same time. If more than 1 window is open, leave only a single window open and close all of other windows (this can be checked on the Window menu).
- The Loader is used for the paperless recorder only.
- Initial values on each Loader screen may be different from those of the paperless recorder main unit.
- Whenever you want to write the setting data on parameter loader into paperless recorder, please return the display of PHL to Display Mode such as Real Time Trend Screen. Don't display Parameter Setting Screen, or this loader software may miss to write into the PHL.
- At this loader, some parameters which do not exist on PHL may be displayed. But the parameter which doesn't exist in the PHL isn't written.
- During PHL is recording or totalizing, it is impossible to write into PHL from this parameter loader.

2. BASIC OPERATION

2.1 Start

Click "Programs" \Rightarrow " PHL Parameter Loader" \Rightarrow " PHL Parameter Loader" from the Start menu.



It is displayed such as following screen.

Note: Whenever, this screen is for 18th inputs. It doesn't depend on the input points.

_							Scaleg	Measuring range	Measuring
	Coke	TapNo1	TagNo.2	Input type	ligut liker	Input unit	ON / OFF	Lower lost value	Upper limit
10H		TAG 01		K-Type TC		110	2017		10
204		TAG 02		K-Type TC		1 PC	OFF		
301		TAG 03		K-Type TC		1 °C	CH #		u -
404		TAG 04		K-Type TC		10 C	044	1	
50H		TAG 05		K-Type TC		RC	017	1	10
- ECH		TAG 06		K-Type TC		1 KC	047		
70H		TAG 07		R-Type TC		1 °C	Of F		
BOH .		TAG 08		K-Type TC		1 °C	Of \$	1	
:9OH		TAG 09		K-Type TC		1 MC	C [1]	1	0
100H		TAG 10		K-Type TC		1 KC	OH,		
11CH		TAG 11		K-Type TC		NC .			
1204		TAG 12		K-Type TC		1 MC	C+1	1	
13CH	_	TAG 13		K-Type TC		(*C -			
1404		TAG 14		K-Type TC		1 MC	Det		
15CH		TAG 15		K-Type TC		1C			
1604		TAG 16		K-Type TC		14C	DIT	1	10
170H		TAG 17		K-Type TC		RC .	DIN.	1	
1804	_	TAG 18		K-Type TC	1	I RC	OIT.		

Table of setting channel display

2.2 Table of setting channel display

			_	-			sturing range	Measurigr
Coke	TagNo 1	TagNo.2	Input type	irput liker	input und	ON / OFF Law	er linit value	Upper limit s
104	TAG 01 TAG 02		K-Type TC		ic ic	0.00		
20H 30H	TAG 02		K-Type TC K-Type TC		è			
ACH	TAG 04		K-Type TC		έ.	CALCULAR DE LA CALCUL		
201	14G 05		K-Type TC		÷.	Cold Inc.		
01	TAG 05		K-Type TC		кс.	043		19
TCH	TAG 07		R-Type TC		*C	Off.		1
ICH I	TAG 08		K-Type TC	3	×C.	DIX		a 11
ioi	TAG 09		K-Type TC	3	*C	DIT		0
10H	TAG 10		K-Type TC		ار	017.		
1CH	TAG 11		R-Type TC		*C	DISC	1	
20H	TAG 12		K-Type TC		ار	OFF.		
3CH	TAG 13		K-Type TC		¢.	01		1.
	TAG 14		K-Type TC		£			
(CH	1AG 15 1AG 16		K-Type TC K-Type TC		e e			
7CH	TAG 17	_	K-Type TC		è.	DOM: NOT		
	TAG 10		K-Type TC		RC .	OW		
1								2

(1) Communication setting

(2)

This function can change communication port of PC which communicates with paperless recorder. At starting of this loader, COM1 is selected as communication port. Set the port number that you want to use at first.

At the executing screen, click [Com(R)] - [Port(P)] and select using port. Normally, COM1 is selected.

(P) Ed	NO 00	novedor	Digit Kala	0						
COME Come Come Come Come Come Come			Diplay	mal						
			COMI		1	1	1	Scaling	Measuring Lange	Meaning
1	Coke	TagNo 1	COMS	No.2	light type	Input Mer	Input unit	ON / OFF	Lower limit wake	Upper land
		TAG 01			K-Type TC		2.40	Contraction of the		0.0
104										
104		TAG 02			K-Type TC		2.4C	OFF		10
104 204 304					K-Type TC K-Type TC		3 10	CALCULATION OF THE OWNER		
204		TAG 02	_					CAR.		

- Upload setting value from PHL
 It is available to upload all the setting such as channel setting, math channel setting, main setting, display setting and so on from PHL.
- (3) Download setting value to PHL
 It is available to download all the setting such as channel setting, math channel setting, main setting, display setting and so on to PHL.

Note: 1) Download prohibit during recording or totalizing.

- 2) Be careful that if you don't register set value, your setting isn't registered, so when you turn off and on the PHL, setting value returns before you change.
- (4) Resister setting value

It is available to register setting value to Flash ROM.

(5) Time setting to PHL

It is available to change time setting of PHL. Press [Time setting] button, and screen as shown below appears. Set the time that you want to change. And then press [Change] button.

- Note: 1) This setting prohibit during recording or totalizing.
 - 2) This setting is not necessary to register set value.

Time setting	
Input time by 24 hour form.	
20 03 year 5 month	23 day
10 hour 0 minute	9
Set C	Cancel

Screen of time setting

(6) File menu

This menu, you can use functions as shown below.

File(F) Edit(E)	Communication(R)	Help(H)	
Open(O) Save in file(S) Text output(1		ain setting Display s	etting
Exit(X)		Tea No 2	Incut hund
10H	TAG 01	Tag No.2	K-Type TC
2CH	TAG 02		K-Type TC
3CH	TAG 03		K-Type TC
4CH	TAG 04		K-Type TC
5CH	TAG 05		K-Type TC

a) Open

Open the setting value file of PHL.

b) Save

Save into the setting value file of PHL, which name is *****. PHL.

Note: ***** is free.

c) Text output

Output setting value as text data..

Please refer to attached "Appendix. 1: Example of setting parameters to be printed out."

d) Exit

Exit this menu.

- Note: 1) If you change setting value of PHL, press [Set value register] before exit this software, or your setting isn't registered, so when you turn off and on the PHL, setting value returns before you change.
 - 2) If you want to use setting value on another day, it is recommended to save the setting value file of PHL before exit this software.

(7) Copy the setting value

Copy the setting value such as channel setting, main setting, display setting and so on.

Click in line of original data and press [Copy]. Click in line that you want to copy., and then press [Paste].

II PHL	Param	eter	Loader			
File(F)	Edit(E)	Co	mmunication((R) Hel	p(H)	
Chan	Past	e(V)	Ctrl+C Ctrl+V Math setting	Main s	etting Display :	setting
	Co	lor	Tag No.1		Tag No.2	In
1	CH		TAG 01			K
2	CH		TAG 02			K
3	CH		TAG 03			K
4	ICH		TAG 04			K
	SCH 📃		TAG 05			K.

2.3 Setting channels

Set the parameter regarding to input, calculation, alarm, display and record of each channel. On "Table of setting channel display", double-click the channel you want to change.

Channel Tag Channel Tag	1 1AS 01	=	Dipley range Lower lent value Upper lent value	1200.0	-1	Alarm setting Alarm No.1 Alarm type Alarm set volue	0FF
Color Color Input type Input titte(i)	Fled K-Type TC 3	•	Recording mode Record mode Record type	With record Min-Max value	•	DO relay No Alam No 2 Alam type	None 💌
Input unit Scaling	€	<u>इल</u> न	Subtract function Subtract channel channel 1	None + channel 1 - set	ing CH	Alam set value DO relay No	0.0 None
Measuring range Lower limit value		-	Frailue calculator Frailue calc	Letting OFF		Alam No.3 Alam type	OFF .
Upper limit value Engineering unit			Totalzation Totalze lag Totalze	STAG 01		Alam set value DO relay No.	None •
Lower linit value Upper linit value			Calculation Totalize type Digital input	Periodic 011	-	Alam No.4 Alam type	017
Deceval point position Square root	1	-	Base time Reset operation Totalize unit	A ON	-	Alam set value DO relay No	Nore 💌
PV shit Shit value Gan(11)	0.0	=	Totalze scale value Totalze out value	0.0			

And then channel setting display appears.

- * It is available to set till 18ch whichever PHL is 9 or 18 input points.
- * There are some screen to be able to display up to 7 characters as channel tag in spite of setting is available up to 8 characters. So don't set 8 characters as channel tag.
- * When you set out of the range, message as shown below appears.

PHLParameterLoader	<
Please input -230.0 to 1400.0)
OK	

Message in recording range

* Press [Apply] after changing channel setting, or your setting isn't registered, so when you turn off and on the PHL, setting value returns before you change.

- * The input type becomes same kind in every two channels set.
- (1) The type setting of channel 2, 4, 6, 8, 11, 13, 15 and 17 is available only the same input category of previous channel. Input type is shown as follows:

Input category	Input type
Thermocouple, 50mV	K-Type TC, E-Type TC, J-Type TC, T-Type TC, R-Type TC, S-Type
	TC, B-Type TC, N-Type TC, W-Type TC, L-Type TC, U-Type TC,
	PN-Type TC, 50mV
Resistance bulb	Pt100Ω, JPt100Ω, Ni100Ω, Pt50Ω, Cu50Ω
500mV	500mV
5V	1 to 5Vdc, 0 to 5Vdc

The type setting of channel 9 and 18, there are no limit.

For example, when channel 1 is set to 1 to 5Vdc, channel 2 is available to be set only 1 to 5Vdc, 0 to 5Vdc or skip as shown below.

asuring chann	el	
Channel Tag	TAG	02
Channel Tag2		_
Color	Blue	۲
Input type	1.5V	٠
Input filter(s)	Skip 1.57	
Input unit	0.57	

Example: Setting input type of each channel

	Input type	Input type	Explanation		
Channel 1	K-Type TC	Thermocouple, 50mV	It is available to set any type of TC or		
Channel 2	T-Type TC		50mV.		
Channel 3	1 to 5V	5V			
Channel 4	0 to 5V				
Channel 5	Pt100	Resistance bulb	It is available to set $Pt100\Omega$ or $JPt100\Omega$.		
Channel 6	JPt100				
Channel 7	500mV				
Channel 8	500mV				
Channel 9	J-Type TC	Thermocouple, 50mV	It is available to set any input type to channel 9.		
Channel 10	K-Type TC	Thermocouple, 50mV	It is available to set any type of TC or		
Channel 11	50mV		50mV.		
Channel 12	Skip	5V	It is available to set skip under any input		
Channel 13	1 to 5V		type.		
Channel 14	Pt100	Resistance bulb			
Channel 15	Skip				
Channel 16	Skip	500mV			
Channel 17	500mV				
Channel 18	50mV	Thermocouple, 50mV	It is available to set any input type to channel 18.		

(2) When you press [Apply] after changing input type setting of channel 1, 3, 5, 7, 10, 12, 14 and 16, sometimes the screen as shown below appears.

×
s changed.
el.

At this screen, if you press [OK] button, the input type of next channel is initialized to the same input type of current displayed channel. In case of 50mV, the next channel becomes K-type TC.

In case of resistance bulb, the next becomes $Pt100\Omega$.

* When you set input unit, set ON the "Scaling" at first. And then press "SELECT" key. In case of Thermocouple or Resistance bulb input, it is available to select either Celsius or Fahrenheit. And the others unit are not displayed.

1		Rec	Input Unit	V Select	
Scaling	OFF	-			l
Measuring range		Subtra			
Lower limit value	ON	Subs			

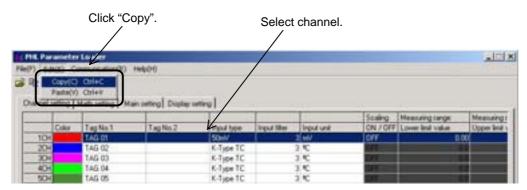
The Unit Select screen appears. On the screen that is displayed, click a unit and press the "Apply" button. Note that the unit cannot be selected without pressing the "Apply" button.

*C	15 15	2/RH	volt		
t/d	kg/d	g/d	m3/d	L/d	
t/h	kg/h	g/h	m3/h	1/h	
Minin	kg/min	g/min	m3/min	1/min	
t/s	kg/s	g/s	m3/s	Vs	
mbar	bar	N/mm2	N/m2		
mPa	Pa	kPa	MPa		
mm -	cm	m			
mi	L	kl	mm3	cm3	m3
mm2	cm2	m2	9	kg	t
g/cm3	kg/cm3	g/m3	kg/m3	-	
g/l	kg/l	g/mi	-		
ppm	ppmNH3	ppmS02	ppmH2S	ppmCO	ppm02
ppmNDx	ppb	pH	lom	24	%H2
%C02	2He	76Ar	202	2NoCl	200
mN	N	N-m	J	kJ.	
mm/s	mm/min	mm/h	m/s	m/min	m/h
(ps	rpm	rph	m/s2	rad/s	km/h
us	ma		min	h	day
nV	V	kV	uA.	mA	A
Hz	dB	w	k/w/	V(A	k.VA.
Var	k/Var	uS/cm	uF .	F	C
mH	H	m ohm	ohm	k ohm	M ohm
bs:	cd	Im	cd/m2		
uSv/h	mSv/h	nGy/h	uGjv/h	um	
Pas	mPa-s				

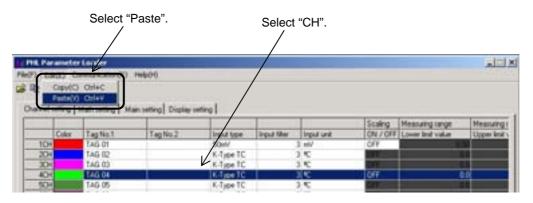
Example: At voltage input and scaling ON

2.3.1 Copying the channel set

This screen allows you to copy one or more set values from one channel to another. Move the cursor to CH on the Table of Setting Channel display, and click it (channel selection). Click "Edit" \Rightarrow "Copy".



Move the cursor to CH where you want to paste channel settings and click it (Channel selection). Click "Edit" \Rightarrow "Paste".



Next, the following message appears, prompting you to select the option.

Click "OK" when you want to copy the channel setting.

If the input type is different between current type and new one, PHL works such as below.

1) Copy to ch1 to ch8 or ch10 to ch17:

The input type becomes same kind in every two channels, ch1 and ch2, ch3 and ch4, ch5 and ch6, ch7 and ch8, ch10 and ch11, ch12 and ch13, ch14 and ch15, ch16 and ch17, set. If new input type is thermocouple, another channel's type becomes K type thermocouple. And if new one is Resistance bulb, another's becomes Pt100ohm type.

2) Copy to ch9 or ch18:

No influence to the other input types.



2.4 Setting math channels

Set the parameter regarding to formula, calculation, alarm, display and record of each math channel. On "Table of setting math channel display", double click the channel you want to change.

Authinsofical chars	net -						Alarm setting	
Formula							Alam No.1	
Famila 801-					Set	Del	Alam type	01 2
Formalia BOZ=					1.54	Del	Alam set value	60
Farmain BUD+		_	_		Set	Del	DO wite No.	Note 2
Farmala Results	_				Set	Del	Alam No 2	
THE PARTY IN				Diplar lange		terror and the second second	Alambos	0//
Ourvel Tag	1	TAG 19	-11	Liver lest value	1 0	0	Alam set value	60
Diavel Tag2	F			Upper lind value	129	0.0	DO relay No.	Nee 2
Calo 📕	Indep		•	Recording mode		-	Alam No 3	
input Merbi)	-	1	-11		Display only	Contraction of the	Alamhpe	01 .
Input and	10		54	Fecorities Subtract function	Me-Mai ve	- <u>-</u>	Alam of value	60
Manuary unge			_	Subtract charge	- and a lot of the lot	+	00 relay No.	Nee 7
Love Ind volue	-	0.0	-	shared 19	- chartel 19	HO peters	1.000	Le restricted
Upper limit value	1	500.0	-1	Frabe catulate	paties a		Alam No.4	1000
Engreeing unt				Fvalue calculation	014	-	Alam type Alam set value	047 2
Lower level walket	1	0.0		Totalcation				and the second second
Spper lest value	1	500.0	_	Totales tag	114	5.118	00 relie No.	Note 2
Decimal point	1		-	Totalow calculation	OFF			
position	1000		-	Totalce type	Periodic			
Square root	Oak		-	Digital input	Dis	-		
PV eNR			_	Bace time	-	•		
SNEvalue	1	0.0		Reset operation	ON	-		
Serial	1	108.80		Totales unit	1	Sel		
				Totalge scale. value		1		
				Tubalae mit value	1 4	ą.		

And then math channel setting display appears.

- * It is available to set till 18ch whichever PHL is 19 to 30 input points.
- * There are some screen to be able to display up to 7 characters as channel tag in spite of setting is available up to 8 characters. So don't set 8 characters as channel tag.
- * When you set out of the range, message as shown below appears.

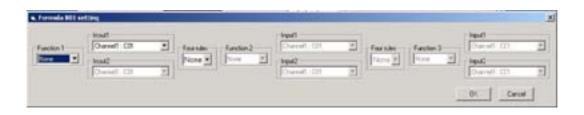
PHLParameterLoader	×
Please input -230.0 to 14	00.0
OK	

Message in recording range

* Press [Apply] after changing channel setting, or your setting isn't registered, so when you turn off and on the PHL, setting value returns before you change.

2.4.1 Formula setting

Please click the [Set] button in the column of formula of Math channel setting to set the formula.



The Formula setting screen appears.

- * Please select the operational expression and the value respectively, push the [OK] button, and fix it.
- <List of functions that can be used for Formula setting>

Grammar	Operation	Explanation
None	No operation	Argument is used with no operation performed.
ABS(A)	Absolute value	Finds the absolute value of input A.
POW(A,B)	Power	Finds the value of input A to "input B"th power.
SQR(A)	Square root	Finds the square root of the value of input A.
LOG(A)	Common logarithm	Finds the common logarithm of the value of input A.
LN(A)	Natural logarithm	Finds the natural logarithm of the value of input A.
EXP(A)	EXP	Finds the exponentiation of the value of input A with base "e."
RH(A,B)	Humidity	Finds the relative humidity with input A assumed to represent dry-bulb temperature and input B wet-bulb temperature.
MAX(A,B)	Maximum (between channels)	Compares input A and B and finds the larger value.
MIN(A,B)	Minimum (between channels)	Compares input A and B and finds the smaller value.
H-P(A)	Maximum (time)	Finds the maximum value of input A within a certain period of time.
L-P(A)	Minimum (time)	Finds the minimum value of input A within a certain period of time.
AVG(A)	Average	Finds the average value of input A within a certain period of time.
SUM(A)	Summation	Finds the sum of input A within a certain period of time.

<List of arguments (input) value that can be used for Formula setting>

Argument	Explanation	Example
Channel	Input channel	C01
Totalize	Totalize channel	T01
DI	Digital input	D01
Communication	Communication input	M01
Constant	Constant	K01
Temporary data	Result of previous operation	B01

2.4.2 Copying the math channel set

This screen allows you to copy one or more set values from one channel to another. Move the cursor to CH on the Table of Setting Channel display, and click it (channel selection). Click "Edit" \Rightarrow "Copy".

	Click "Copy".			Select channel.		
PHL Par	ameter	Loader				
File(F) Edit	b(E) Co	emunication(R)	Help(H)			
	Paste(V)	Ctrl+C Ctrl+V Math setting	ain setting Display s	etting		
	Color	Tag No.1	Tag No.2	Formula 801		
19CH		TAG 19		L06(C07) EXP(C06)		
20CH		TAG 20				
21CH		TAG 21				
22CH		TAG 22				
23CH		TAG 23				

Move the cursor to CH where you want to paste channel settings and click it (Channel selection). Click "Edit" \Rightarrow "Paste".

	Select "Paste".			Select "CH".		
PHL Par	ameter	Loader				
File(F) Edit	b(E) Co	munication(R)	Help(H)			
🚔 R 👘	Copy(C)	Ctrl+C				
	Paste(V)	Cb/I+V	/	/		
Channel s	etting 1	Math setting M	ain setting Display s	etting		
	Color	Tag No.1	Tag No 2	Formula 801		
19CH		TAG 19		L0G(C07)*EXP(C06)		
20CH		TAG 20				
21CH		TAG 21	K			
22CH		TAG 22				
23CH		TAG 23				

Next, the following message appears, prompting you to select the option.

Click "OK" when you want to copy the channel setting.

If the input type is different between current type and new one, PHL works such as below.

2.5 Setting the main unit

This screen allows you to set the recorder main unit.

Move the cursor to MAIN UNIT on the Table of Setting Channel display, and click it.

HL Parameter I								1
(P) Ede(C) Com	munication(0) Help	1						
-C 40 1	1/	ereg Materia and						
hannel setting M	ath setting Main se	ting Diske sette	vl		14.V 2			
						Scaling	Meaninglange	Meaning
1CH	Tag No 1 TAG 01	Tag No.2	K-Type TC	Input Mee	Input unit	ON / OFF	Lover Init value	Upper lina
204	TAG 02		K-Type TC		210	OFT		
304	TAG 03		K-Type TC		5 °C	258		
404	TAG 04		K-Type TC		3.40	14		
504	TAG 05		K-Type TC		3.60			
18 Parameter 1	ander							10
	munication(H) Help	0-0						
11 10 1								
and the second second			120					
hannel setting M	alt setting Main set	fing Display settin	φI					
Main setting		Totalize setting		And the second se	lunction		faith liner setting (nim)	
Deplay	1160	Totalge	0 . 0	• No.	1 Function invalid		HPLF	1
efectment cycle	0.20	bare time Recording	Canada San				tener cycle	1.1
Alam hysteresis(X	And and a state of the state of	cycle	1 hour	- No	2 Function invalid		AVG	1
Alam latch	OFF 📩	Weekly	Sundar	• No.	Tunction invalid	-	timer cycle	
Record data forma	Acci *	base day Monthly	-				SUM	1
	and the second second	base day	1	- No.	4 Function invalid	-	time cycle	- 10-
LCD lights-cast time	0 mm	Start lime	0 .0	• No.	s Function invalid			
Annoy hat alam	L North Col	Sector Sector	10 21 10	No.	0 1. 0 CONTRACTOR		Constant setting	
00 Ne	None •	Stop time	0 . 0	• No	5 Function invalid	• 1	10 Na1	10
latey alam IO No.	None *	External	for	-		-	102 0 No.1	2 0
Configuration	discount of	input	Dit	- No	y Function revaild		-3 0 No.5	-
paramined set	0			No	B Function invalid		No.1	-
Finanager	0	Frake calcula	And in the local division of		-		N2.1	
vecced set	-			No	g Function invalid	- N	ins 0 Nat	And in case of the local division of the loc
vecord vantword set	0	Taget tenperature	0.0		10 Function invalid	• 1	in6 0 Nat	6 0
	2/12	Zvalue	0.0	- 100	and the second s		ie7 0 Na1	7 0
Communication set			1	225			10.8 0 No.7	
	1	Decimal point poolion	1	•			0 No1	Commission
Modbus shallon No	- Constant - Constant	Revel	-			111	No.1	
Modbus station No Modbus Baud rate	15200 .	even a	0.0				in 30 Nin 7	

The Main unit Set screen appears.

* If values are entered over the specified range, the following message appears.

PHLParameterLoader	×
Please input 0.00 to 100	.00
(OK)	

Alarm Hysteresis message

2.5.1 DI function setting (option)

The DI function allows you to accept the ON/OFF input from external devices connected to external terminals of DI1 to DI0.

No.1	Function invalid
No.2	Function invalid Rec start/stop Fvalue calc. reset
No.3	Totalize start/stop Totalize reset LCD ON
No.4	Function invalid
No.5	Function invalid

Note: DI1-DI5 cannot be used because DI (external control unit) option cannot be mounted when the input point is 18 points.

Without the communication function, DI6-DI10 cannot be used.

2.6 Display setting

At this screen, you can see or set regarding to screen setting such as structure of screen, trend display screen and so on. Click "Display setting" tab of [Structure of setting channel display].

ng No. Doglar setty ng No.1 8 = paph ng No.2 8 = paph ng No.3 8 = paph ng No.3 8 = paph ng No.4 8 = paph	Color bar digle Diarvel No Diarvel No Diarvel No Diarvel No	No.1 charvel 1 charvel 1 charvel 1 charvel 1	No.2 Diservel 2 Diservel 2 Diservel 2 Charrel 2	No.3 charvel 3 charvel 3 charvel 3 charvel 3	No.4 Charvel 4 Charvel 4 Charvel 4 Charvel 4	No.5 channel 5 channel 5 channel 5 channel 5
oup setting						
play setting			Disp	lay channel s	etting	
lisplay	Dar gr	aph	No No	4	channel 1	*
hannel index	Constant of the	nel No.	N0	2	channel 2	-
	C Annual State	and a state of the state of the	No No	.3	channel 3	
lisplay	Dist	play Group1	No	4	channel 4	•
cale display	Scale	OFF _	No	5	channel 5	-
end display			No	.6	channel 6	-
Frend direction	Vertical		No	7	channel 7	•
	1.4.4.4.4		NO	8	channel 8	-
Display	10		- N0	.9	channel 9	-
			No	.10	None	*
			1 140	10	None	1

Setting screen appears and you can see status about screen setting.

2.6.1 Display setting

At this screen, you can set regarding to screen setting such as structure of screen, trend display screen and so on. Double click the group No. at "Display group" column on Display setting screen,

- * Edit the displayed group on "Selected group No.".
- * Screen name can set to PHL up to 16 characters.
- * If scale display is ON, trend screen is divided in accordance with the scale, not the setting of "Display divided".

2.6.2 Setting channels

Set the structure of screen.

No.1 at this screen equals to data 1 of "display setting" of PHL, No.2 equals to data 2. Following is the same as above until No.10.

* In case of PHL is 9 inputs type, this screen displays until No.10.

2.6.3 Setting message

The screen allows you to set messages to be displayed when an event occurs. Move the cursor to No. of the Message box on the Main Unit Set screen and double-click it.

	one			
Timing N Timing!	J.E			
Timeg2				
elected No. 📊	Tap	Back 1	Next 1	

The Message Setting screen appears.

- * Up to 32 characters is available for the message. The characters exceeding 32 cannot be displayed on the recorder main unit.
- * After the input of message set data, be sure to press the "Apply" button, or the message cannot be registered.
- * Message timing is allocated as follows:

Message	setting		1
Timing	Alam ON *		
Tengt	0(1 •		Channel N
Timeg2	Alam No.1 •		Set alarm
Selected No	Top Back Nest		
	Cancel Apply Exit		
		-	
. Message	setting	×	
Message	setting	×	
	eetting DI ON	×	
Message		×	— DI No.
Message Teneng			
Menage Tenng Tenngt Tenng2			
Message Tereng Terengt			
Menage Tenng Tenngt Tenng2			

2.6.4 Unit coding

Units can be made in alphanumerical characters. This unit can be registered in the input unit when scaling is set to ON on the Channel Setting screen.

Move the cursor to No. of the Unit box on the Main Unit Set screen and double-click it.

Unit define				×
Unit name		_		
Selected 1	Тор	Back	Next	
	Cancel	Apply	Exit	1

The Unit Setting screen appears.

- * A message (unit) consisting of up to 7 characters is available for the recording main unit.
- * After the input of unit set data, be sure to press the "Apply" button, or the unit cannot be registered.

EXAMPLE OF SETTING PARAMETERS TO BE PRINTED OUT **APPENDIX.1**

2004/04/14 13:07:30

PILC : PHL11B11-E10RY Ser. No. : Z4A0001T Ver. : V07L

*****Channel setting*****

	1			T	N= 1	T	N- 0			S	calir	ıg	Measuri ng	range		Engi neeri r	gunit	Square
	Input ty	pe Col	or	Tag	No. 1	Tag	No. 2	i npu	t uni	17 0	N/OFF		Start	End		Start	End	rooter
CH1	Pt100	Red		TAG	01	TAG	31	°C		0	FF		0.0	500.0		0.0	500.0	OFF
CH2	Pt50	Bl u	Э	TAG	02	TAG	32	°C		0	FF		0.0	500.0		0.0	500.0	OFF
CH3	50mV	Vi o	et	TAG	03	TAG	33	MV		0	FF		0.00	50.00		0.00	50.00	OFF
CH4	К-Туре Т	C Gre	en	TAG	04	TAG	34	°C		0	FF		0.0	500.0		0.0	500.0	OFF
CH5	500mV	Dee	o green	TAG	05	TAG	35	MV		0	FF		0.0	500.0		0.0	500.0	OFF
CH6	500mV	Pur	ole	TAG	06	TAG	36	MV		0	N		0.0	500.0		0.0	500.0	OFF
CH7	1-5V	Sky	bl ue	TAG	07	TAG	37	V		0	N		1.000	5.000		0.000	5.000	OFF
CH8	0-5V	Yel	OW	TAG	08	TAG	38	V		0	FF		0.000	5.000		0.000	5.000	OFF
CH9	Т-Туре Т	C Ind	go	TAG	09	TAG	39	°C		0	FF		0.0	500.0		0.0	500.0	OFF
CH10	Ni 100	Darl	< red	TAG	10	TAG	40	°C		0	FF		0.0	500.0		0.0	500.0	OFF
CH11	Cu50	Red		TAG	11	TAG	41	°C		0	FF		0.0	500.0		0.0	500.0	OFF
CH12	50mV	BI u	Э	TAG	12	TAG		MV		0			0.00	50.00		0.00	50.00	OFF
CH13	К-Туре Т	C Vio	et	TAG	13	TAG	43	°C		0	FF		0.0	500.0		0.0	500.0	OFF
CH14	500mV	Gre		TAG		TAG		MV			FF		0.0	500.0		0.0	500.0	OFF
CH15	500mV		o green	TAG		TAG		MV		0			0.0	500.0		0.0	500.0	OFF
CH16	1-5V	Pur		TAG		TAG		V			FF		1.000	5.000		0.000	5.000	OFF
CH17	0-5V		bl ue	TAG		TAG		V		0			0.000	5.000		0.000	5.000	OFF
CH18	PN-Type	TC Yel	OW	TAG	18	TAG	48	°C		0	FF		0.0	500.0		0.0	500.0	OFF
	Input				Subtract		Fval ue		ecor	dina				Dice	alavr	2000		
	Filter	PV shift	PV gai	n	channel		cal c.		lode	ung	F	lecord	ing type	Star	olay r	End		
CH1	1	0.0	100.00		None		OFF			record		lin_Ma	x value	0.		500.0		
CH2	1	0.0	100.00		channel 1		OFF			record			value	0.		500.0		
CH3	1	0.00	100.00		None		OFF			record			e value	0.0		50.00		
CH4	1	0.0	100.00		None		ON			record			x value	0.0		120.00		
CH5	1	0.0	100.00		None		OFF			record			value	0.		500.0		
CH6	1	0.0	100.00		None		OFF			record			e value	0.		500.0		
CH7	1	0.000	100.00		channel 1	6	OFF			record			x value	1.00		5.000		
CH8	1	0.000	100.00		None		OFF			record			value	0.00		5.000		
CH9	1	0.0	100.00		channel 4		ON			record			e value	0.0		30.00		
CH10	1	0.0	100.00	1	None		0FF	W	li th	record	Ν	li n-Ma	x value	0.	0	150.0		
CH11	1	0.0	100.00	1	None		ON	W	li th	record	F	oi nt	val ue	0.0	00	15.00		
CH12	1	0.00	100.00		channel 3		0FF	W	li th	record	A	werag	e value	0.0	00	50.00		
CH13	1	0.0	100.00		None		0FF	W	li th	record	Ν	li n-Ma	x value	0.	0	1200. 0		
CH14	1	0.0	100.00		channel 5		0FF	W	li th	record	F	oi nt	val ue	0.	0	500.0		
CH15	1	0.0	100.00		Channel 6		0FF	W	li th	record	A	werag	e value	0.	0	500.0		
CH16	1	0.000	100.00		None		0FF	W	li th	record	Ν	li n-Ma	x value	1.00	00	5.000		
CH17	1	0.000	100.00		channel 8		0FF	W	li th	record	F	oi nt	val ue	0.00	00	5.000		
CH18	1	0.0	100.00		channel 9	,	ON	W	i th	record	A	werag	e value	0.0	00	130.00		
* * * * *	Total i z	o cotti	na****	*														
			0															
	Total i ze			Total	i ze		Di gi t	ali	nput	Tota			eset	Total	i ze	Total i ze		tal i ze
	Tag	cal c.		Туре							time		perati on	Uni t		Cut valu		ale value
CH1	STAG 01	Total		Peri o			DI 1			/s		0		Unit		0.0	1	
CH2	STAG 02	Total		Daily			DI 1			/s		0		Unit		0.0	1	
CH3	STAG 03	Total		Weekl	•		DI 1			/s		0		Unit		0.00	1	
CH4	STAG 04	Total		Month	2		DI 1			/s		0		Unit		0.00	1	
CH5	STAG 05	Total		Annua			DI 1			/s		0		Unit		0.0	1	
CH6	STAG 06	Total			(Time se	ετ)	DI 1			/s		0		Unit		0.0	1	
CH7	STAG 07	Total		Exter			DI 1	AL -		/s /dou		0	FF	Unit		0.000	1	
CH8	STAG 08	Count		Perio			Ch30			/day /mi.n				Unit		0.000	1	
CH9	STAG 09	Count		Daily			Ch30			/min		0	N FF	Unit		0.00	1	
CH10 CH11	STAG 10 STAG 11	Count Count		Weekl Month	•		Ch30 Ch30			∕min ∕day		0		Unit Unit		0.0 0.00	1	
CH12	STAG 11 STAG 12	Count		Annua			Ch1 A			/day		0		Unit		0.00	1	

Ch1 Alarm1

Ch1 Alarm2

Ch1 Alarm3

Ch10 Alarm1

DI 1

DI 1

DI 1

/day

/mi n

/s

/s

/h

/day

/day

ON

0FF

ON

ON

ON

ON

ON

Unit 12

0.00

0.0

0.0

10.0

0.500

0.005

1.05

1

5

100

1

1

1

1

CH12

CH13

CH14

CH15

CH16

CH17

CH18

STAG 12

STAG 13

STAG 14

STAG 15

STAG 16

STAG 17

STAG 18

Counter

Counter

Counter

Timer

Timer

Timer

Timer

Annual

External

Peri odi c

Dai I y

Weekly

Monthl y

Daily(Time set)

			4 -4 -4											
****		etti ng**	* * *											
	Alarm No.			Alarm N				Alarm No				Alarm No		
	Alarm	Alarm set	DO relay	Alarm	Alarm set			Alarm		rm set	DO relay	Alarm	Alarm set	DO relay
0114	type	val ue	No.	type	val ue	No.		type	valu		No.	type	value	No.
CH1 CH2	H OFF	10. 0 0. 0	1 None	OFF H	0. 0 20. 0	Nor		OFF OFF	0. 0.		None None	OFF OFF	0. 0 0. 0	None None
CH2 CH3	OFF	0.0	None	н OFF	20.0	Nor		Н	0.0		None 7	OFF	0.00	None
CH3 CH4	OFF	0.00	None	OFF	0.00	Nor		OFF	0.0		None	Н	40.00	10
CH4 CH5	OFF	0.0	None	OFF	0.00	Nor		OFF	0.0		None	OFF	40.00	None
CH6	OFF	0.0	None	OFF	0.0	Nor		OFF	0.		None	OFF	0.0	None
CH7	OFF	1.000	None	OFF	1.000	Nor		OFF	1.00		None	OFF	1.000	None
CH8	OFF	0.000	None	OFF	0.000	Nor		OFF	0.00		None	OFF	0.000	None
CH9	OFF	0.00	None	OFF	0.00	Nor		OFF	0.0		None	OFF	0.00	None
CH10	L	-10.0	11	OFF	0.0	Nor		OFF	0.		None	OFF	0.0	None
CH11	OFF	0.00	None	L	20.00			OFF	0.0		None	OFF	0.00	None
CH12	OFF	0.00	None	OFF	0.00	Nor		L	30.0		20	OFF	0.00	None
CH13	OFF	0.0	None	OFF	0.0	Nor		OFF	0.		None	L	-50.0	25
CH14	OFF	0.0	None	OFF	0.0	Nor		OFF	0.		None	OFF	0.0	None
CH15	OFF	0.0	None	OFF	0.0	Nor	ne	OFF	0.	0	None	0FF	0.0	None
CH16	OFF	1.000	None	OFF	1.000	Nor	ne	OFF	1.00	00	None	0FF	1.000	None
CH17	OFF	0.000	None	OFF	0.000	Nor		OFF	0.00		None	0FF	0.000	None
CH18	OFF	0.00	None	OFF	0.00	Nor	ne	OFF	0.0	00	None	OFF	0.00	None
*****		annel se	tti ng^^^	~ ~										
0110	Formul a				2)	0.14	25	Formul a						
CH19	B01 =		POW(K02, K04		3)	CH:	25	B01	=					
	B02 =		*EXP(K03)-LN		、			B02	=					
	BO3 = Result =		(07, K09) *MI N	I(KU8, KTU)			B03 Resul t	=	EXP(MO9)				
01120			503			CU	24		=	EVb(MOA)				
CH20	B01 = B02 =					CH2	20	B01 B02	=					
	B02 =							B02 B03	_					
	Result =							Resul t	_	RH(T26, D	06)			
CH21	B01 =					CH:	27	B01	_	MI(120, L	00)			
01121	B01 =					CIL	21	B02	_					
	B02 =							B02 B03	_					
	Result =		104)					Resul t	=	MAX(TO9,	K16)			
CH22	B01 =		104)			CH:	28	B01	_	1000000000	(TO)			
01122	B01 =					011	20	B02	=					
	B02 =							B03	=					
	Result =							Resul t	=	H-P(MO3)				
CH23	B01 =					CH	29	B01	=	11 1 (1103)				
0112.0	B01 =					011	27	B02	=					
	B03 =							B03	=					
	Result =							Resul t	=	AVG(K10)				
CH24	B01 =					CH:	30	B01	=					
	B02 =							B02	=					
	B03 =	=						B03	=					
	Result =							Resul t	=	SUM(CO1,	C07)			
						Ν	leasuri ng	range		Engi neer	ing unit			
	Col or	Tag N	o. 1 Tag	No. 2	Input uni	t	Start	End		Start	End	Squar	re rooter	
CH19	l ndi go	TAG 1	9 TAG	49	°C		0.000	5.000		0.000	5.000	OFF		
CH20	Dark red				°C		0.000	5.000		0.000	5.000	OFF		
CH21	Red	TAG 2			°C		0.0	500.0		0.0	500.0	OFF		
CH22	Blue	TAG 2			°C		0.00	50.00		0.00	50.00	OFF		
CH23	Violet	TAG 2			°C		0	5000		0	5000	OFF		
CH24	Green	TAG 2	4 TAG	54	°C		0.0	500.0		0.0	500.0	OFF		
CH25	Deep gree			55	°C		0.0	500.0		0.0	500.0	0FF		
CH26	Purpl e	TAG 2	6 TAG	56	°C		0.0	500.0		0.0	500.0	OFF		
CH27	Sky blue	TAG 2	7 TAG	57	°C		0.0	500.0		0.0	500.0	OFF		
CH28	Yellow	TAG 2	8 TAG	58	°C		0.0	500.0		0.0	500.0	OFF		
CH29	l ndi go	TAG 2			°C		0	5000		0	5000	OFF		
CH30	Dark red	TAG 3	0 TAG	60	°C		0.0	500.0		0.0	500.0	OFF		
	Input			Subtr	act Fva	al ue	Recordi	ing	Re	cordi ng	Dis	play range	9	
	Filter	PV shift	PV gain	chann			Mode	0	ty		Sta		nd	
CH19	0	0.000	100.00	None	OFF	-	With re	ecord	Mi	n-Max val	ue 0.0	00 12	2.000	
CH20	0	0.000	100.00	None	OFF	=	With re	ecord	Po	int value	0.0	00 12	2.000	
CH21	0	0.0	100.00	None	OFF	-	With re	ecord	Av	erage val	ue 0.	0 1	200. 0	
CH22	0	0.00	100.00	None	OFF	=	With re	ecord		n-Max val			20. 00	
CH23	0	0	100.00	None	OFF		With re			int value			12000	
CH24	0	0.0	100.00	None	OFF	=	With re	ecord	Av	erage val	ue 0.	0 1	200. 0	
CH25	0	0.0	100.00	None	OFF	=	With re	ecord	Mi	n-Max val	ue 0.	0 1	200. 0	
CH26	0	0.0	100.00	None	OFF	=	With re	ecord	Po	int value	0.	0 1	200. 0	
CH27	0	0.0	100.00	None	OFF	-	With re	ecord	Av	erage val	ue 0.	0 1	200. 0	
CH28	0	0.0	100.00	None	OFF	-	With re	ecord	Mi	n-Max val	ue 0.	0 1	200. 0	
CH29	0	0	100.00	None	OFF		With re			int value			12000	
CH30	0	0.0	100.00	None	OFI	-	With re	ecord	Av	erage val	ue 0.	0 1	200. 0	

*****Totalize setting*****

	Total i ze	Total i ze	Total i ze	Di gi tal	Total i ze	Reset	Total i ze	Total i ze	Total i ze	
	Tag	cal c.	Туре	i nput	Base time	operation	Uni t	Cut value	Scale value	
CH19	STAG 19	Total i zer	Peri odi c	Ch3 Alarm2	/day	OFF		0.000	1	
CH20	STAG 20	OFF	Peri odi c	DI 1	/h	ON		0.000	1	
CH21	STAG 21	OFF	Peri odi c	DI 1	/h	ON		0.0	1	
CH22	STAG 22	OFF	Peri odi c	Ch6 Alarm3	/min	OFF		0.00	1	
CH23	STAG 23	OFF	Peri odi c	DI 1	/h	ON		0	1	
CH24	STAG 24	OFF	Peri odi c	DI 1	/h	ON		0.0	1	
CH25	STAG 25	Total i zer	Monthl y	Ch10 Alarm2	/s	OFF		0.0	1	
CH26	STAG 26	OFF	Peri odi c	DI 1	/h	ON		0.0	1	
CH27	STAG 27	OFF	Peri odi c	DI 1	/h	ON		0.0	1	
CH28	STAG 28	OFF	Peri odi c	DI 1	/h	ON		0.0	1	
CH29	STAG 29	OFF	Peri odi c	DI 1	/h	ON		0	1	
CH30	STAG 30	OFF	Peri odi c	DI 1	/h	ON		0.0	1	

*****Alarm setting*****

	Alarm N	o. 1		Alarm No	o. 2		Alarm N	o. 3		Alarm N	o. 4	
	Alarm	Alarm set	DO relay	Alarm	Alarm set	DO relay	Alarm	Alarm set	DO relay	Alarm	Alarm set	DO relay
	Туре	val ue	No.	type	val ue	No.	type	val ue	No.	type	val ue	No.
CH19	OFF	0.000	None	OFF	0.000	None	OFF	0.000	None	OFF	0.000	None
CH20	OFF	0.000	None	OFF	0.000	None	OFF	0.000	None	OFF	0.000	None
CH21	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None
CH22	OFF	0.00	None	OFF	0.00	None	OFF	0.00	None	OFF	0.00	None
CH23	OFF	0	None	OFF	0	None	OFF	0	None	OFF	0	None
CH24	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None
CH25	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None
CH26	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None
CH27	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None
CH28	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None
CH29	OFF	0	None	OFF	0	None	OFF	0	None	OFF	0	None
CH30	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None

*****Basic setting*****

Display refreshment cycle 1 min Alarm hysteresis 0.50 (%) Alarm latch ON LCD lights-out time 10 min Memory full alarm D0 relay No. 5 Battery alarm D0 relay No. 25 MODBUS Station NO. 255 MODBUS baud rate 9600 bps MODBUS parity Even Recording data format Binary Configuration password 1357 CF manager password 2468 REC key password 9753

*****Fvalue calculation setting*****

Target temperature 100.0 °C Z value 10.0 °C Decimal point position 2 Fvalue reset temperature 5.0 °C

*****Totalize setting*****

Totalize base time 12:30Totalize recording cycle 10 minWeekly base day WednesdayMonthly base day15Totalize start time 10:30stop time 20:30Extrnal input Ch30 Alarm4

*****Math timer setting*****

H-P/L-P operation $\ 5$ min AVG operation $\ 2$ min SUM operation 10 min $\$

*****Display setting*****

	Content of scr	een co	mpositi	on								
	No. 1	No. 2		No. 3		No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10
Display group1	channel 1	chann	el 2	channel	3	channel 4	channel 5	channel 6	channel 7	channel 8	channel 9	channel 10
Di spl ay group2	channel 11	chann	el 12	channel	13	channel 14	channel 15	channel 16	channel 17	channel 18	channel 19	channel 20
Di spl ay group3	channel 21	chann	el 22	channel	23	channel 24	channel 25	channel 26	channel 27	channel 28	channel 29	channel 30
Display group4	channel 1	None		None		channel 10	None	None	channel 19	None	None	channel 30
			Trend		Di sp	lay	Scal e	Bar graph/	Color bar			
	Display name		di rec	tion	di vi :	sion No.	di spl ay	Analog meter	display se	lection		
Display group1	Di spl ay Grou	р 1	Verti	cal	1		ON	Bar graph	Channel No).		
Display group2	Display Grou	p 2	Hori z	ontal	20		ON	Bar graph	Tag No.			
Display group3	Display Grou	р 3	Verti	cal	5		ON	Analog meter	Uni t			
Display group4	Display Grou	р4	Hori z	ontal	15		ON	Analog meter	Tag No.			

*****Message setting*****

	• •			
	Message	Ti mi ng1	DI NO./ Alarm Channel	Alarm NO.
No. 1	Message DI 4 ON	DI ON	DI 4	
No. 2	Message DI 10 OFF	DI OFF	DI 10	
No. 3	Message Alarm 1 No.1 ON	Alarm ON	CH. 1	Alarm No.1
No. 4	Message Alarm 5 No.4 OFF	Alarm OFF	CH. 5	Alarm No.4
No. 5	Message Alarm 10 No.2 ON	Alarm ON	CH. 10	Alarm No.2
No. 6	Message Alarm 18 No.3 OFF	Alarm OFF	CH. 18	Alarm No.3
No. 7	Message DI 2 ON	DI ON	DI 2	
No. 8	Message DI 7 OFF	DI OFF	DI 7	
No. 9	Message Alarm 21 No.2 ON	Alarm ON	CH. 21	Alarm No.2
No. 10	Message Alarm 30 No.4 OFF	Alarm OFF	CH. 30	Alarm No.4

*****Original Unit definition*****

	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
Uni t	Unit O1	Unit O2	Unit 03	Unit O4	Unit 05	Unit 06
	No. 7	No. 8	No. 9	No. 10	No. 11	No. 12
Uni t	Unit 07	Unit 08	Unit 09	Unit 10	Unit 11	Unit 12

*****DI functionting*****

DI -1	Rec start/stop	DI -6	Rec start/stop
DI -2	Totalize start/stop	DI -7	Totalize start/stop
DI - 3	Totalize reset	DI -8	Totalize reset
DI - 4	Evalue calc, reset	DI -9	Evalue calc, reset
DI -4	LCD ON	DI -10	LCD ON

*****Constant setting*****

Constant1	1.00	Constant11	-32767
Constant2	20.0	Constant12	32767
Constant3	3.000	Constant13	-3276.7
Constant4	0.04	Constant14	3276.7
Constant5	0.0005	Constant15	-327.67
Constant6	66.6	Constant16	327.67
Constant7	700.0	Constant17	-32.767
Constant8	80.00	Constant18	32.767
Constant9	0.009	Constant19	-3. 2767
Constant10	10	Constant20	3. 2767

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