

## 7 . PROFIBUS-DP

EN 50 170 PROFIBUS Telegram Telegram 244  
 0 - 126 가 (commissioning)  
 (SAP) Telegram . PROFIBUS-DP SAP 54 - 62 SAP  
 . DP FMS 가 FMS Telegram  
 , DP FMS FMS  
 Telegram  
 (plausibility) PROFIBUS ASIC Telegram (forward)  
 Telegram Hamming 4  
 PROFIBUS 가 .  
 . 12 MBd  
 ,  $\mu s$  .  
 3% 4% Telegram  
 . PROFIBUS -  
 . PROFIBUS 가  
 -  
 -  
 PROFIBUS-DP 가 가 . 1  
 2 가 (commissioning)  
 2  
 12 MBd , ASIC 가  
 가 PLC

: (incremental)
--------------------

(GSD ) . GSD  
 Telegram  
 , GSD 가  
 , 가

(STARTUP)

Telegram  
(retrigger)

Telegram

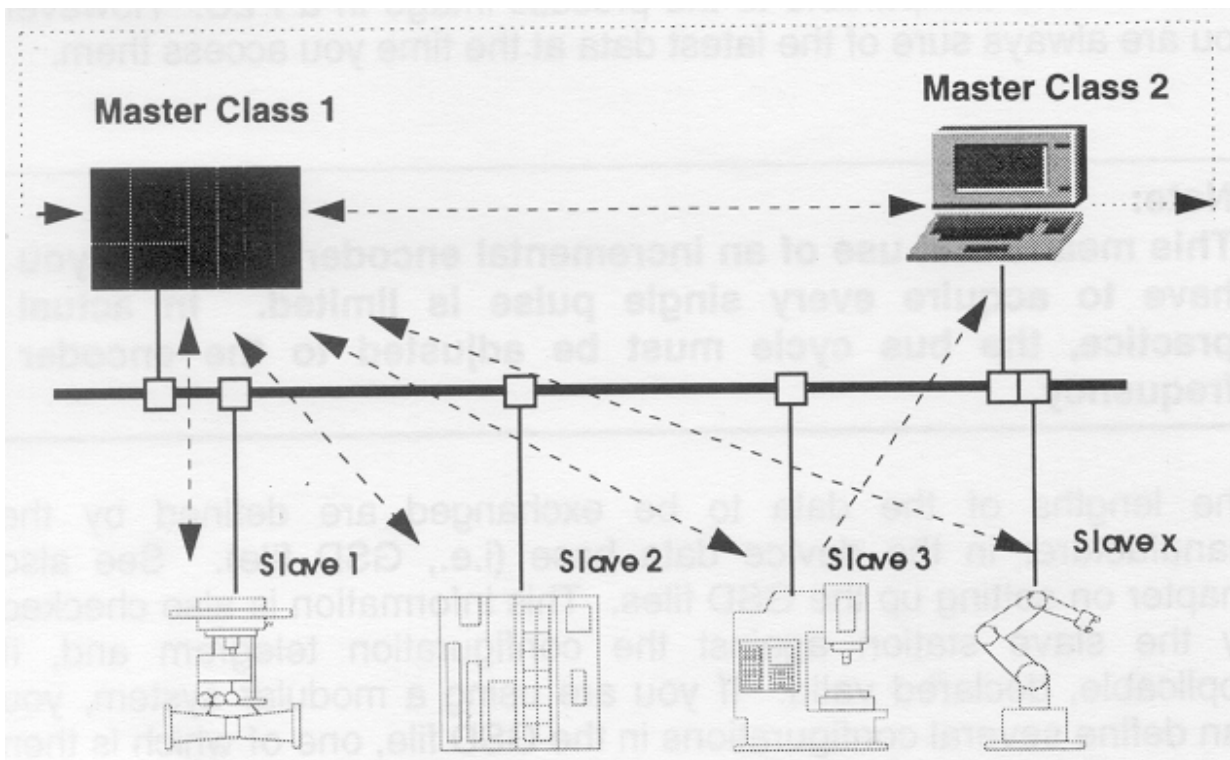
Chapter

Telegram

( Telegram/ )

가 가

1 2 가



8:2

4

1

1  
1

2

1 - 3 x

2

3

가

1

-

3

(token half-time)

가

(T<sub>H</sub>) 가  
가

(EMC)

Telegram

Target (T<sub>TR</sub> = ) 가  
, Target (T<sub>RR</sub> = )

Telegram

I/O

가 가

Telegram Telegram 255 9 가  
Data\_Exchange Telegram 11 Read\_Inputs  
Read\_Outputs I/O "Read\_Inputs"  
"Read\_Outputs" Telegram "Data\_Exchange" Telegram 가 가  
"Read\_Inputs" "Read\_Outputs" DSAP SSAP 가 Telegram  
2 가  
244

가 가 Telegram 가  
가 가 가  
가

PROFIBUS

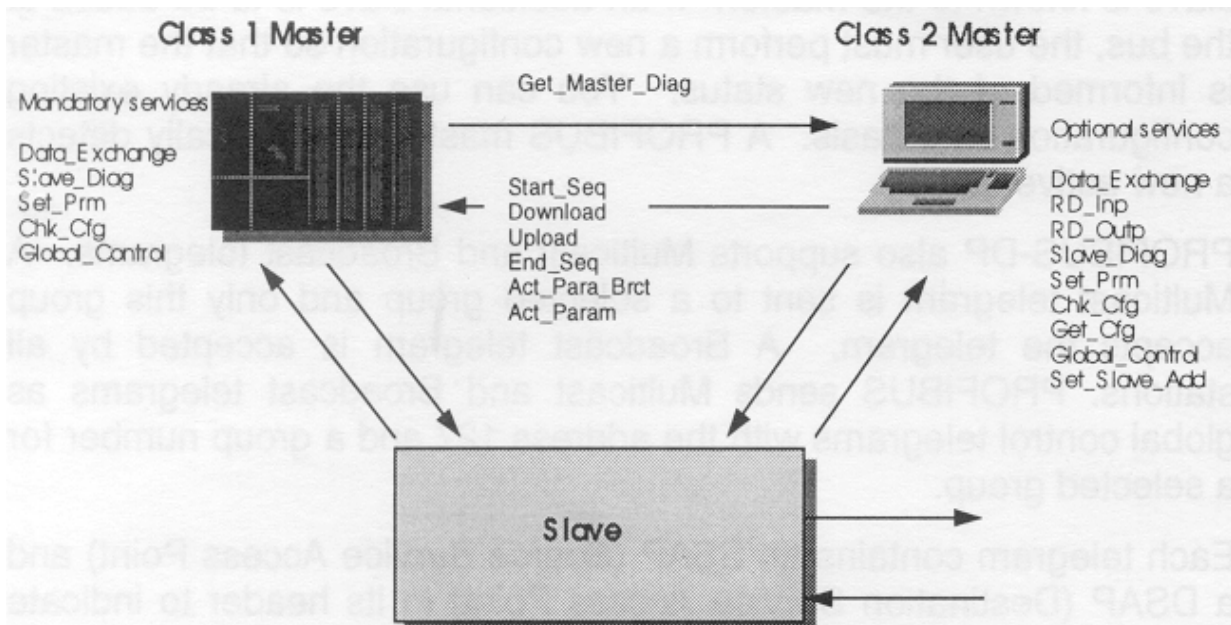
PROFIBUS-DP

Telegram Telegram Telegram Telegram  
Telegram Telegram  
PROFIBUS Telegram 127  
(global control) Telegram

Telegram SSAP( ) DSAP( )가  
Data\_Exchange SAP  
SAP 가 , 가

## SAP 가 PROFIBUS-DP

Default SAP:		(Write_Read_Data)
SAP54:	-	SAP(M-M communication)
SAP55:		(Set_Slave_Add)
SAP56:		(Rd_Inp)
SAP57:		(Rd_Outp)
SAP58:	DP	(Global_Control)
SAP59:		(Get_Cfg)
SAP60:		(Slave_Diagnosis)
SAP61:		(Set_Prm)
SAP62:		(Chk_Cfg)



9 : Mandatory/optional services

: CI1./CI2/.

Start\_Seq =  
 Download = ( )  
 Upload = 가  
 End\_Seq = /  
 Act\_Para\_Brcd = 2 가  
 Act\_Param =

2 “Start\_Seq” / 가  
“End\_Seq” .

### 7.1 (Fail Safe Mode)

1 PROFIBUS (golobal control) Telegram  
. Operate Octet 1 0 .  
가 Clear Telegram (Octet 1 = 1, Octet 2 =  
0, ). 0  
Telegram 가 Clear

GSD 가 (Fail Safe Mode) Telegram  
(Telegram ) Clear

가 Clear

Telegram

(Fail Safe Mode) 0

Telegram

Clear :

Operate :

### 7.2 PROFIBUS-DP

#### 7.2.1 (State Machine)

PROFIBUS-DP

PROFIBUS

DP  
(conformity)

EN 50 170

ASIC

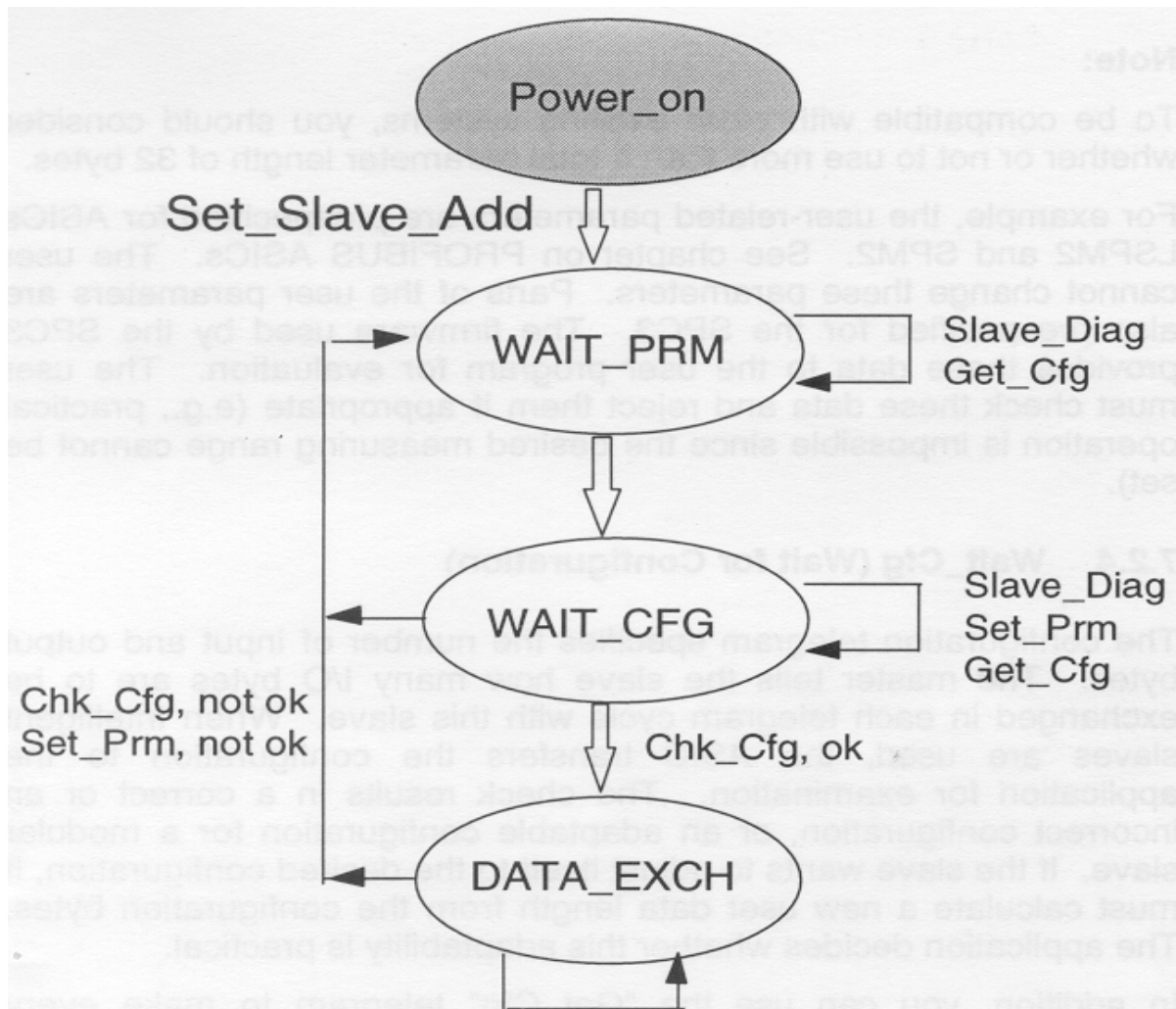
7.2.2 Power\_On

Power\_On

2

“Set\_Slave\_Address”

가



DATA\_EXCH

Telegram

Exchange-ok, Rd\_Inp, Rd\_Outp, ( , (freeze) ): Slave\_Diag, Chk\_Cfg ok, Prm-ok Get\_Cfg.

10: PROFIBUS-DP

7.2.3 Wait\_Prm( )

가

Telegram

“Get\_Cfg” Telegram

Telegram

가 Telegram ( , ID , / (sync/freeze) )

:

32

ASIC , ASIC LSPM2 SPM2 . PROFIBUS . SPC3 . SPC3

가 ( , 가 ) .

#### 7.2.4 Wait\_Cfg( )

Telegram . Telegram I/O ASIC

가 . 가

가

, “Get\_Cfg” Telegram 가  
“Get\_Cfg” Telegram

:

ASIC 가 가

ASIC

#### 7.2.5 Data\_Exch( )

가 가 , Data\_Exch ( , )

#### 7.2.6

Telegram 6 Octet Telegram 가 ( , ) . 가 (

) 가 .

: , 32

### 7.2.7 Read\_Inputs, Read\_Outputs

Data\_Exch . ASIC

### 7.2.8 (watchdog)

가 PROFIBUS 가  
Telegram (watchdog)

(retrigger) , Wait\_Prm  
(Fail Safe mode)

Telegram ( ,  
25% ) 가 .

### 7.3

DP

$T_{syn} =$   
(33 Tbit )

$T_{id1} =$  Telegram (initiator) Telegram  
( $T_{syn}$  ) .

$T_{SDR} =$  가 .

$\min_{T_{SDR}} =$  가 .

$\max_{T_{SDR}} =$  가 .



## TBit

Transmission rate in kBit/sec	9.6	19.2	93.75	187.5	500	1500	12000
$\min_{\text{TSR}}$ in $t_{\text{Bit}}$	11	11	11	11	11	11	11
$\max_{\text{TSDR}}$ in $t_{\text{Bit}}$	60	60	60	60	100	150	800