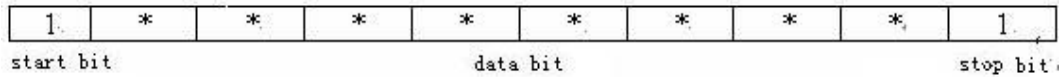# DMMVIEW_A Communication Protocol

Version：2.0

1. Communication speculations:

The handled meter employs RS232-USB（RS232）communication port, baud rate 9600; A start bit (the initial bit), eight data bits (the first bit–the eighth bit), a stop bit, ten data bits in total.

Byte Data Patten:

1	*	*	*	*	*	*	*	*	1
start bit				data bit					stop bit

Communication Frame Format:

@	[DE]	[COMMAND]	[Data Format]	CRC	CR/SO/SI

Reference Meaning:

@: The starting symbol of the general command;

[DE]: Address (Default: 0);

[COMMAND]: Command;

CRC: CRC sum value of calibration, two bytes, derivation: $G(X) = X16+X12 +X 5 +1$;

CR/SO/SI: Symbol of format ending (0X0D, 0X0E, 0X0F);

[Data Format]: The related data of every command (the length is viable with the command)

Note： ASCII code is employed for communication in the Protocol

2. Communication Command Format

❚ Command for sending real time data

CR command	
Description	To collect real time data (Collection Real Time Data)
Command	·Command for collecting constant data:CR,2 ·Command for stopping to collect constant data: CR,0
Return	·Collecting constant data CR, MDDDD, FF, S S: status: N=Normal, O=Over, B=Battery Low, D=D.H,P=P.H,A=A.H,M=MAX.I=MIN,V=AVG,R=REL M: Sign:"+" or "-" DDDD: Measuring value FF: function and range pointer ·Stop collection No return value

l   Command for sending manual saved data(**SAVE**)

CS command	
Description	To collect SAVE data. The related data in SAVE could be collected via the sequent parameter of the command (Collection Save Data)
Command	CS, nn nn: Order of the SAVE data（1～500）
Return	·Collecting the SAVE data CS, MDDDD, FF, S S: status: N=Normal, O=Over, B=Battery Low M: Sign:"+" or "-" DDDD: measuring value FF: function and range pointer

l   Number of the SAVE data(SAVE)

CH command	
Description	Collecting the SAVE data number .(Collection Save Data Number)
Command	CH
Return	CH, nnn nnn: Number of the SAVE data

l   Command for sending LOG data (LOG)

CL command	
Description	To collect LOG data. The related data in LOG could be collected via the sequent parameter of the command (Collection Log Data)
Command	CL, nnn nnn: number of the LOG data（1～number of the LOG data）
Return	CL, MDDDD, FF, S S: status: N=Normal, O=Over M: Sign:"+" or "-" DDDD: measuring value FF: function and range pointer

l   Command for sending data number in LOG mode

CN command	
Description	Collecting the LOG data number (Collection Log Data Number)
Command	CN
Return	CN, nnn nnn: number of the LOG data

l   Command for sending interval time of LOG data

CI command	
Description	To collect LOG data interval time (Collection Log Data Interval Time)
Command	CI
Return	CI, nnnn nnnn: interval time in LOG

l   Command for sending LOG data start time

CT command	
Description	To collect Log data start time (Collection Log Data start Time)
Command	CT

l   Command for sending COMP data(COMP)

CO command	
Description	To collect COMP data. The related data in COMP mode could be via the sequent parameter of the command (Collection COMP Data)
Command	CO, nnn nnn: number of the COMP data
Return	CO, MDDDD, FF, S, T S: status: N=Normal, O=Over M: Sign:"+" or "-" DDDD: measuring value FF: function and range pointer T: recording time Unit: S(second)

l   Command for sending data number in COMP mode

CC command	
Description	To collect COMP data number(Collection COMP Data Number)
command	CC
return	CC, nnn nnn: number of COMP data

I Command for sending upper and lower limits in COMP mode

CA command	
Description	To collect upper and lower limits of COMP data (Collection COMP Data Limit)
Command	CA,0　read the upper limit CA,1　read the lower limit
Return	CA, 0, MDDDD, FF CA, 1, MDDDD, FF M: Sign:"+" or "-" DDDD: measuring data FF: function and range pointer

Note: "O" represents for "+OL" and "L" represents for "-O L" when analyzing the state.