Autonics

TZ/TZN SERIES
Communication control

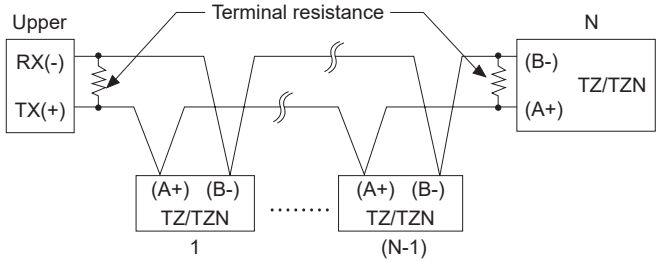
▣ Interface

Application standard	**EIA RS485**
Max number of connection	**32units, It is available to set address 01~99.**
Communication method	**Two wire half duplex**
Synchronous method	**Asynchronous system**
Communication distance	**Within 1.2km**
Communication speed	**2400, 4800, 9600(Available to set)**
Start bit	**1bit(Fixed)**
Stop bit	**1bit(Fixed)**
Parity bit	**None**
Data bit	**8bit(Fixed)**
Protocol	**BCC**

●Caution for using

1. It is not possible to modify parameter(Baud rate, Address etc.) related to communication of TZ/TZN series on line with upper systems such as PC, PLC etc. (Error will be occurred)
2. Firstly make communication parameter of TZ/TZN series and upper system at one.
3. It is not allowed to set overlapping communication address at the same communication line. (Error will be occurred)
4. Please use twist pair wire for RS485 communication.
5. After connecting communication cable between TZ/TZN series and upper systems, the vertical resistance(100 to 200Ω) must be installed at between both communication lines.

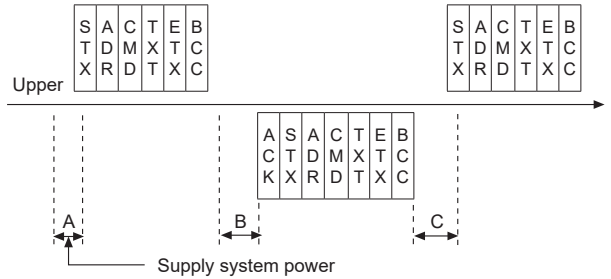
▣ System ordering



※Twisted Pair cable must be used for communication cable.

▣ Communication control ordering

1. The communication control ordering of TZ/TZN series is exclusive protocol
2. After 4sec. being supplied the power into upper system, then able to start communicating.
3. Initial communication will be started by upper system.
   When Command signal comes out from upper system then TZ/TZN series will respond.



※A → Over min. 4sec, B → Within max. 300ms, C → Over min. 20ms

▣ Communication Command and Block

Format of Command and Response

STX	10^1	10^0	R/W	X/D		ETX	FSC
Start Code	Address Code		Header Code		Text	END Code	BCC Code

Calculation range of Block Check Character

①Start code : It indicates the first of BLOCK
STX → [02H], in case of response, ACK will be added.
②Address code : This code is upper system can discern TZ/TZN series and able to set within range of 01 to 99. (BCD ASCII)
③Header code : It indicates command as 2 alphabets as below.
RX(Read request) → R[52H], X[58H]
RD(Read response) → R[52H], D[44H]
WX(Write request) → W[57H], X[58H]
(Reservation at upper vision of TZ/TZN)
WD(Write response) → W[57H], D[44H]
(Reservation at upper vision of TZ/TZN)
④Text : It indicates the detail contents of Command/Response.
(See command)
⑤END code : It indicates the end of BLOCK. ETX → [03H]
⑥BCC : It indicates XOR operating value from the first to ETX of the protocol as abbreviation of TZ/TZN.

▣ Communication Command

● Read[RX] of measurement/setting value : Address 01, Command RX

1. Command(Upper)

①Command

STX	0	1	R	X	P	0	ETX	FSC
Start	Address		Command head		P : Processing value, S : Setting value		End	BCC

②Application : Address(01), Header code(RX), Current value(P)

STX	0	1	R	X	P	0	ETX	FSC
02H	30H	31H	52H	58H	50H	30H	03H	BCC

● Write[WX] of Processing value : Address 01, Command WX

1. Command(Upper)

①Command

STX	0	1	W	X	S	0	Symbol	10^3	10^2	10^1	10^0	ETX	FSC
Start	Address		Command head		S:Setting value		Space/-	10^3	10^2	10^1	10^0	End	BCC

②Application : Address(01), Head Code(WX) setting value(S) +123

STX	0	1	W	X	S	0	Symbol	10^3	10^2	10^1	10^0	ETX	FSC
02H	30H	31H	57H	58H	53H	30H	20H	30H	31H	32H	33H	03H	BCC

▣ Response

● Read of processing/Setting value

1. In case of receiving normal processing value :
   The data is transmitted adding ACK[06H].

(In case processing value is +123.4)

ACX	STX	0	1	R	D	P	0	Symbol	10^3	10^2	10^1	10^0	Decimal point	ETX	FSC
ACX	STX	0	1	R	D	P	0	Space	1	2	3	4	1	ETX	FSC
06H	02H	30H	31H	52H	44H	50H	30H	20H	31H	32H	33H	34H	31H	03H	BCC

(In case processing value is -100)

ACX	STX	0	1	R	D	P	0	-	0	1	0	0	0	ETX	BCC
06H	02H	30H	31H	52H	44H	50H	30H	2DH	30H	31H	30H	30H	30H	03H	BCC

2. In case of receiving normal setting value :
   The data is transmitted adding ACK[06H].

(In case setting value is -100)

ACX	STX	0	1	R	D	S	0	Symbol	10^3	10^2	10^1	10^0	Decimal point	ETX	FSC
ACX	STX	0	1	R	D	S	0	-	0	1	0	0	0	ETX	BCC
06H	02H	30H	31H	52H	44H	53H	30H	2DH	30H	31H	30H	30H	30H	03H	BCC

● Write of setting value

(In case setting value is -100)

ACX	STX	0	1	W	D	S	0	Symbol	10^3	10^2	10^1	10^0	ETX	FSC
ACX	STX	0	1	W	D	S	0	-	0	1	0	0	ETX	BCC
06H	02H	30H	31H	57H	44H	53H	30H	2DH	30H	31H	30H	30H	03H	BCC

● Others : In case of no response of ACK

①When the address is not the same after receiving STX.
②When receiving buffer overflow is occurred.
③When the baud rate or others communication setting value are not the same.

● When there are no ACK response

①Check the status of lines
②Check the communication condition(Setting value)
③When assuming the problem is due to noise, try to operate communication 3 times more until recovery
④When occurred communication failure frequently, please adjust the communicating speed.

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