

# TDOG-31X/31DX (CO/LCO) RS-485 Protocol Address Mapping Data

## 1. Read Input Resistors (Function code 04) : [Read Measurement Value](#)

Code	Address	Parameter	Bytes	R/W	Unit / Analysis	Data
04	30001-2	1st Current A (R)	4	Read	[x 1A]	Long
	30003-4	1st Current B (S)	4	Read	[x 1A]	Long
	30005-6	1st Current C (T)	4	Read	[x 1A]	Long
	30007-8	1st Current N	4	Read	[x A]	Long
	30009	2nd Current A (R)	2	Read	[x 0.01A]	Unsigned
	30010	2nd Current B (S)	2	Read	[x 0.01A]	Unsigned
	30011	2nd Current C (T)	2	Read	[x 0.01A]	Unsigned
	30012	2nd Current N	2	Read	[x 0.01A]	Unsigned
	30013	<b>Lamp Status</b>	2	Read	<b>Bit</b>	Unsigned
	30014	<b>Fault Status</b>	2	Read	<b>Bit</b>	Unsigned
	30015	<b>System Status</b>	2	Read	<b>Bit</b>	Unsigned

[ Unit Analysis ]

<b>30013 Lamp Status</b>	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
RUN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PICK-UP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
COMM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
A (R)	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
B (S)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
C (T)	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
INST	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
<b>30014 Fault Status</b>	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
RUN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PICK-UP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
COMM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
A (R)	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
B (S)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
C (T)	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
INST	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
<b>30015 System Status</b>	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
System Run	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
System Error	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

## 2. Read Holding Resistors (Function code 03) : [Read Setting Value](#)

Preset Single Resistor / Multiple Resistors (Function code 06 / 16) : [Write Setting Value](#)

Code	Address	Parameter	Bytes	R/W	Unit / Analysis	Data
03 06 / 16	40001	Frequency set	2	R/W	0=50Hz / 1=60Hz	Unsigned
	40002	CT Ratio set	2	R/W	[x 1A]	Unsigned
	40003	Pulse out set	2	R/W	[x 1ms]	Unused
	40004	TOC set	2	R/W	[x 0.1A]	Unsigned
	40005	TOC Lock set	2	R/W	0=No / 1=Yes	Unsigned
	40006	TOC Lever set	2	R/W	[x 0.1]	Unsigned
	40007	TOC Curve set	2	R/W	0=DT / 1=NI / 2=VI / 3=EI	Unsigned
	40008	IOC set	2	R/W	[x 1A]	Unsigned
	40009	IOC Lock set	2	R/W	0=No / 1=Yes	Unsigned
	40010	TOCG set	2	R/W	[x 0.1A]	Unsigned
	40011	TOCG Lock set	2	R/W	0=No / 1=Yes	Unsigned
	40012	TOCG Lever set	2	R/W	[x 0.1]	Unsigned
	40013	TOCG Curve set	2	R/W	0=DT / 1=NI / 2=VI / 3=EI	Unsigned
	40014	IOCG set	2	R/W	[x 1A]	Unsigned
	40015	IOCG Lock set	2	R/W	0=No / 1=Yes	Unsigned

3. Read Holding Resistors (Function code 03) : **Read Fault Value** \* Start Address : 40016

Code	Address	Parameter	Bytes	R/W	Unit / Analysis	Data
03	40016	<b>Sum of Fault</b>	2	Read	<b>ea [1st byte]</b>	Unsigned
		<b>Recent Fault Record</b>			<b>Address [2nd byte]</b> <span style="color: red;">*Note1</span>	

[ Unit Analysis ]

40016 Bit	[1st byte] Sum of Fault								[2nd byte] Recent Fault Record <span style="color: red;">*Note1</span>								40016 Bit
	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
1ea	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1st Fault (40017~022)
2ea	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2nd Fault (40023~028)
3ea	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	3rd Fault (40029~034)
4ea	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	4th Fault (40035~040)
:	:								:								:
30ea	0	0	0	1	1	1	1	0	0	0	0	1	1	1	0	1	30th Fault (40191~196)
31ea	0	0	0	1	1	1	1	1	0	0	0	1	1	1	1	0	31th Fault (40197~202)
32ea	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	32th Fault (40203~208)

Code	Address	Parameter	Bytes	R/W	Unit / Analysis	Data	
03	40017	<b>1st Operating Relay</b>	2	Read	<b>Bit</b>	Unsigned	
	40018	<b>1st Operating Phase</b>	2	Read	<b>Bit</b>	Unsigned	
	40019	1st Operating Current	2	Read	[x 0.01A]	Unsigned	
	40020	1st Operating Time	2	Read	Cycle <span style="color: red;">*Note2</span>	Unsigned	
	40023	2nd Operating Relay	2	Read	Bit	Unsigned	
	40024	2nd Operating Phase	2	Read	Bit	Unsigned	
	40025	2nd Operating Current	2	Read	[x 0.01A]	Unsigned	
	40026	2nd Operating Time	2	Read	Cycle <span style="color: red;">*Note2</span>	Unsigned	
	40029~032	3rd Fault Data	12	Read		Unsigned	
	40035~038	4th Fault Data	12	Read		Unsigned	
	:	:			Read		Unsigned
	40191~194	30th Fault Data	12	Read		Unsigned	
	40197~200	31st Fault Data	12	Read		Unsigned	
	40203~206	32nd Fault Data	12	Read		Unsigned	
	40211	<b>1st Fault Time</b>		2	Read	<b>year</b>	Unsigned
	40212			2	Read	<b>month</b>	Unsigned
	40213			2	Read	<b>day</b>	Unsigned
	40214			2	Read	<b>hour</b>	Unsigned
	40215			2	Read	<b>minute</b>	Unsigned
	40216			2	Read	<b>second</b>	Unsigned
40217~222	2nd Fault Time	6	Read	yy/mm/dd/ hh:mm:ss	Unsigned		
40223~228	3rd Fault Time	6	Read	yy/mm/dd/ hh:mm:ss	Unsigned		
40229~234	4th Fault Time	6	Read	yy/mm/dd/ hh:mm:ss	Unsigned		
:	:			Read		Unsigned	
40385~390	30th Fault Time	6	Read	yy/mm/dd/ hh:mm:ss	Unsigned		
40391~396	31st Fault Time	6	Read	yy/mm/dd/ hh:mm:ss	Unsigned		
40397~402	32nd Fault Time	6	Read	yy/mm/dd/ hh:mm:ss	Unsigned		

[ Unit Analysis ]

40017 / 40023 / ... Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
TOC	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
IOC	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
40018 / 40024 / ... Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
A(R)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
B(S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
C(T)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
N	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0

4. Force Single Coil (Function code 05) : [Write Remote Command](#)

Code	Address	Parameter	Bytes	R/W	Unit / Analysis	Data
05	X0001	Clear Fault Record	2	Write	1=Clear	Unsigned

5. MODBUS Exception Responses

- Exception Response

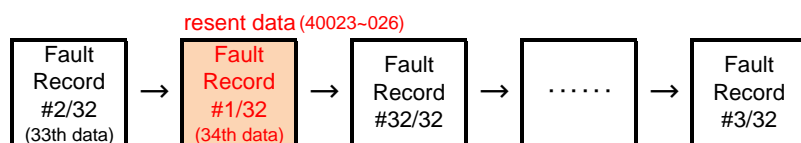
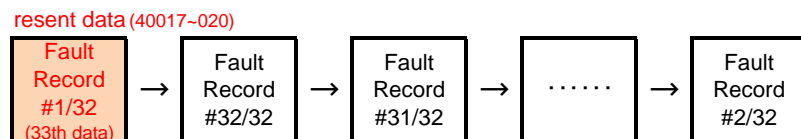
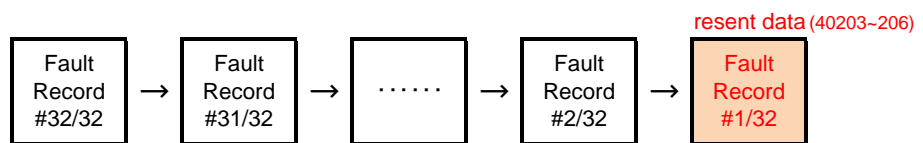
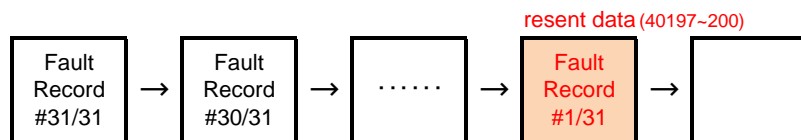
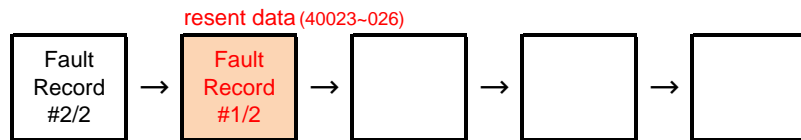
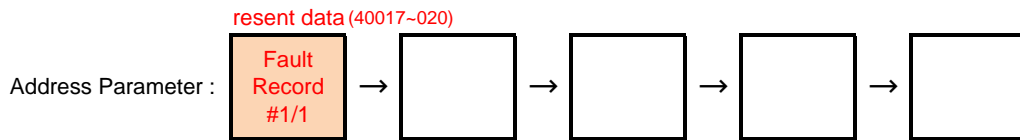
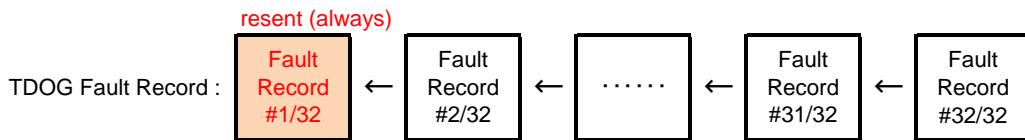
Slave Address	Function Code	Exception Code	CRC
0x□□	0x□□	0x□□	----
1 Byte	1 Byte	1 Byte	2 Bytes

- Exception Codes

Code	Name
01	Illegal Function
02	Illegal Data Address
03	Illegal Data Value
02	Time-out

※ Note 1

- Recent Fault of Address 40016 is according to circle round method.



※ Note 2 : Raise fractions not lower than 0.5 to a unit.

- If operating time is 30ms Cycle = operating time / Period = operating time \* frequency = 0.03 \* 60 = 1.8 [Display 2 cycle](#)