MODBUS INTERFACE DEFINITIONS

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VERSION.2.1 10/03/23

B-CONNEXT R&D DEP.

IMPULSION CO., LTD.

www.b-connext.in.th

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Version History

Version	Date	Description
1.0	18/03/2018	This issue is the first official release.
2.0	20/06/2020	Update Scan Status and Slave Schedule Table.
2.1	18/08/2023	Update Command for Reset / Default and Time Delay of Auto/Manual Mode Checking

1. Introduction

The Modbus-TCP/RTU protocol is a widely used industrial communications protocol. It is a common language for electrical communications terminals, and has become an industrial standard that enables products from different manufacturers to be network and centrally monitored. By using this protocol, the product can communicate with each other or with other devices in a network, such as through the Ethernet network or RS485 bus. The protocol defines master and slave nodes, the processes in which the master node accesses other devices using various requests, how a slave node responds to requests from other devices, and how both parties involved in a communications process detect and record errors. It also specifies the message field formats and detailed data content. As the B-Connext BAS Cluster Controller and more general and customized products use the Modbus protocol for communication. This document provides information about the Modbus protocol used in b-connext BAS product and can be used to regulate and restrict follow-up third-party integration R&D and customizations.

1.1 Terms and Abbreviations

1.2 System Requirements

1.3 BAS Models

Terms and Abbreviations

Name	Description
Master node	During master-slave communication, the party that initiates a communication request is referred to as the master node.
Slave node	During master-slave communication, the party that responds to a communication request is referred to as the slave node.
Broadcast address	Fixed to 0.
Register address	The address of a register is recorded in two bytes.
U16	Unsigned integer (16 bits)
U32	Unsigned integer (32 bits)
I16	Signed integer (16 bits)
I32	Signed integer (32 bits)
MLD	Multiple bytes
N/A	Not applicable

Table 1-1 Terms and Abbreviations

1.2 System Requirements

Applicable model: BAS Cluster Controller V2.0 with F/W : CT-7.5.0

Applicable model: BAS Cluster Controller V1.0 with F/W : CT-4.4.0

1.3 System Communication

Modbus TCP: Class 0

Comm. : Ethernet

Port: 502

Function Code: 0x03 (Read Holding Register) and 0x10 (Write Multi Register)

Maximum Data Length: 100 Register.

2. Register Definitions

2.1 Main Monitoring and Setting

Table 2.1. B-connext BAS Main Cluster Controller supports function code 0x03 (Read Holding Register) and 0x15 (Write Multi Register)

Item	Reg. Start	Reg. End	Size	R/W	Description	Value	Detail	Type	Units
1	101	116	16	W/R	Main Output Control [1 - 16]	0 / 1 / 2	OFF / ON / AUTO	uint16	-
2	117	132	16	R	Main Input Status [1 - 16]	0 / 1	OFF / ON	uint16	-
3	133	148	16	W/R	Air Cont Output Status Ch. [1 - 16]	0 / 1	OFF / ON	uint16	-
4	149	212	64	W/R	Tact Output Status Ch. [1 - 64]	0 / 1	OFF / ON	uint16	-
5	213	228	16	W/R	Reserve1 [16]	0 / 1	OFF / ON	uint16	-
6	229	229	1	R	Air Cont Alarm Type	0 / 1	NORMAL / ALARM	uint16	-
7	230	230	1	R	Fan Cont Alarm Type	0 / 1	NORMAL / ALARM	uint16	-
8	231	231	1	R	Lighting Cont Alarm Type	0 / 1	NORMAL / ALARM	uint16	-
9	232	232	1	W/R	Alarm Event	0 / 1	NORMAL / ALARM	uint16	-
10	233	233	1	W/R	Alarm Ack	1	Alarm Ack	uint16	-
11	234	234	1	R	AC POWER	0 / 1	BLACK DROP / NORMAL	uint16	-
12	235	235	1	W/R	RTC Date	1 - 31	RTC Date	uint16	DD
13	236	236	1	W/R	RTC Month	1 - 12	RTC Month	uint16	MM
14	237	237	1	W/R	RTC Year	1 - 99	RTC Year	uint16	YY
15	238	238	1	W/R	RTC Hour	0 - 23	RTC Hour	uint16	hh
16	239	239	1	W/R	RTC Minute	0 - 59	RTC Minute	uint16	mm
17	240	240	1	W/R	RTC Second	0 - 59	RTC Second	uint16	ss
18	241	241	1	W/R	RTC Day of week	0 - 6	RTC Day of week	uint16	DOW
19	242	243	2	R	Air Conditioner Temp Board 1 [Ch.1 - 2]	0 - 1000	0 - 100.0	uint16	°C
20	244	245	2	R	Air Conditioner Temp Board 2 [Ch.1 - 2]	0 - 1000	0 - 100.0	uint16	°C
21	246	246	1	R	Slave Qty	0 - 10	Slave Qty	uint16	-
22	247	247	1	R	Firmware	100	1.0.0	uint16	-
23	248	248	1	R	Modbus ID	1	1	uint16	-
24	249	249	1	R	System Clock	0000 - 0000	Slave Qty	uint16	-
25	250	265	16	R	Main Output Status [1 - 16]	0 / 1	OFF / ON	uint16	-
26	266	281	16	R	Slave Comm Status [1 - 16]	0 / 1	NORMAL / COMM FAIL	uint16	-
27	282	291	10	W/R	Slave Active [1 - 10]	0 / 1	NORMAL / COMM FAIL	uint16	-
28	292	301	10	R	Slave Scan Status [1 - 10]	0 / 1	NORMAL / COMM FAIL	uint16	-
29	302	309	8	W/R	Slave Tact Output Type Board.1 [Ch. 1 - 8]	0 / 1 / 2	NA / LIGHTING / FAN	uint16	-
30	310	317	8	W/R	Slave Tact Output Type Board.2 [Ch. 1 - 8]	0 / 1 / 2	NA / LIGHTING / FAN	uint16	-
31	318	325	8	W/R	Slave Tact Output Type Board.3 [Ch. 1 - 8]	0 / 1 / 2	NA / LIGHTING / FAN	uint16	-
32	326	333	8	W/R	Slave Tact Output Type Board.4 [Ch. 1 - 8]	0 / 1 / 2	NA / LIGHTING / FAN	uint16	-
33	334	341	8	W/R	Slave Tact Output Type Board.5 [Ch. 1 - 8]	0 / 1 / 2	NA / LIGHTING / FAN	uint16	-
34	342	349	8	W/R	Slave Tact Output Type Board.6 [Ch. 1 - 8]	0 / 1 / 2	NA / LIGHTING / FAN	uint16	-
35	350	357	8	W/R	Slave Tact Output Type Board.7 [Ch. 1 - 8]	0 / 1 / 2	NA / LIGHTING / FAN	uint16	-
36	358	365	8	W/R	Slave Tact Output Type Board.8 [Ch. 1 - 8]	0 / 1 / 2	NA / LIGHTING / FAN	uint16	-
37	366	366	1	W/R	Scan Slave Command	0 / 1	1: SCAN	uint16	
38	367	367	1	R	Main System Mode	0 / 1	MAN / AUTO	uint16	-
39	368	368	1	W/R	Slave Output Reset	0 / 1	Idle / Reset	uint16	-
40	369	378	10	W/R	All Control [1 - 10]	0 / 1	OFF ALL / ON ALL	uint16	-
41	379	379	1	W/R	Tact All Control	0 / 1 / 2 / 3 / 4 / 5	OFF ALL / ON ALL / OFF LIGHTING / ON LIGHTING / OFF FAN / ON FAN	uint16	-
42	380	389	10	R	Slave Comm Retry [10]	0 - 20	0 - 20 times	uint16	-
43	390	390	1	W/R	Check System Mode	0 / 1 / 2 / 3	IDLE / READ MODE / SEND AUTO MODE / SEND MANUAL MODE	uint16	-
44	391	398	8	R	Tact System Mode [8]	0 / 1	MANUAL / AUTO	uint16	-
45	399	401	3	R	Que Index [3]	0 - 100	Diagnostic	uint16	-
46	402	402	1	W/R	ClearQueRead	0 / 1	Not / Clear	uint16	-
47	403	403	1	R	RTC Que	0 -100	Diagnostic	uint16	-
48	404	413	10	R	Slave Que Qty [10]	0 - 100	Diagnostic	uint16	-
49	414	414	1	R	Write Command Status	0 / 1	Diagnostic	uint16	-
50	415	415	1	R	Slave Commu Process	-	Diagnostic	uint16	-
51	416	416	1	R/W	Enable Wirte Active (reg 282)	0 / 1234	Disable / Enable	uint16	-
52	417	417	1	R/W	DI input Channel	1-16	Channel 1 - 16	uint16	-
53	418	418	1	R/W	Default Factory	0 / 1	Idle / Default Factory	uint16	-
54	419	419	1	R/W	Reset	0 / 1	Idle / Reset	uint16	-
55	420	420	1	R/W	Time Delay Check SystemMode	0 - 100	Time Delay Check SystemMode 0 - 100 Minute	uint16	-

2.2 Air Controller Control

Table 2.2. B-connext Air Controller supports function code 0x03 (Read Holding Register) and 0x15 (Write Multi Register)

Item	Reg. Start	Reg. End	Size	R/W	Description	Value	Detail	Type	Units
1	1001	1016	16	W/R	Output Mode Channel [1 - 16]	0 / 1 / 2 / 3	MANUAL OFF / MANUAL ON / SCHEDULE / MANUAL	uint16	-
2	1017	1032	16	W/R	Output Type Channel [1 - 16]	0 / 1	LATCHING / STATNDARD	uint16	-
3	1033	1048	16	W/R	Output Group Channel [1 - 16]	0 / 1 / 2	NO GROUP / GROUP 1 / GROUP 2	uint16	-
4	1049	1064	16	W/R	Output Step Channel [1 -16]	0 / 1 / 2	STEP 0 / STEP 1 / STEP 2	uint16	-
5	1065	1072	8	W/R	Start Time of Ch.1 [SCHEDULE 1 - 8]	0000-2359	Start time hh : mm	uint16	hhmm
6	1073	1080	8	W/R	Start Time of Ch.2 [SCHEDULE 1 - 8]			uint16	
7	1081	1088	8	W/R	Start Time of Ch.3 [SCHEDULE 1 - 8]			uint16	
8	1089	1096	8	W/R	Start Time of Ch.4 [SCHEDULE 1 - 8]			uint16	
9	1097	1104	8	W/R	Start Time of Ch.5 [SCHEDULE 1 - 8]			uint16	
10	1105	1112	8	W/R	Start Time of Ch.6 [SCHEDULE 1 - 8]			uint16	
11	1113	1120	8	W/R	Start Time of Ch.7 [SCHEDULE 1 - 8]			uint16	
12	1121	1128	8	W/R	Start Time of Ch.8 [SCHEDULE 1 - 8]			uint16	
13	1129	1136	8	W/R	Start Time of Ch.9 [SCHEDULE 1 - 8]			uint16	
14	1137	1144	8	W/R	Start Time of Ch.10 [SCHEDULE 1 - 8]			uint16	
15	1145	1152	8	W/R	Start Time of Ch.11 [SCHEDULE 1 - 8]			uint16	
16	1153	1160	8	W/R	Start Time of Ch.12 [SCHEDULE 1 - 8]			uint16	
17	1161	1168	8	W/R	Start Time of Ch.13 [SCHEDULE 1 - 8]			uint16	
18	1169	1176	8	W/R	Start Time of Ch.14 [SCHEDULE 1 - 8]			uint16	
19	1177	1184	8	W/R	Start Time of Ch.15 [SCHEDULE 1 - 8]			uint16	
20	1185	1192	8	W/R	Start Time of Ch.16 [SCHEDULE 1 - 8]			uint16	
21	1193	1200	8	W/R	Stop Time of Ch.1 [SCHEDULE 1 - 8]	0000-2359	Stop time hh : mm	uint16	hhmm
22	1201	1208	8	W/R	Stop Time of Ch.2 [SCHEDULE 1 - 8]			uint16	
23	1209	1216	8	W/R	Stop Time of Ch.3 [SCHEDULE 1 - 8]			uint16	
24	1217	1224	8	W/R	Stop Time of Ch.4 [SCHEDULE 1 - 8]			uint16	
25	1225	1232	8	W/R	Stop Time of Ch.5 [SCHEDULE 1 - 8]			uint16	
26	1233	1240	8	W/R	Stop Time of Ch.6 [SCHEDULE 1 - 8]			uint16	
27	1241	1248	8	W/R	Stop Time of Ch.7 [SCHEDULE 1 - 8]			uint16	
28	1249	1256	8	W/R	Stop Time of Ch.8 [SCHEDULE 1 - 8]			uint16	
29	1257	1264	8	W/R	Stop Time of Ch.9 [SCHEDULE 1 - 8]			uint16	
30	1265	1272	8	W/R	Stop Time of Ch.10 [SCHEDULE 1 - 8]			uint16	
31	1273	1280	8	W/R	Stop Time of Ch.11 [SCHEDULE 1 - 8]			uint16	
32	1281	1288	8	W/R	Stop Time of Ch.12 [SCHEDULE 1 - 8]			uint16	
33	1289	1296	8	W/R	Stop Time of Ch.13 [SCHEDULE 1 - 8]			uint16	
34	1297	1304	8	W/R	Stop Time of Ch.14 [SCHEDULE 1 - 8]			uint16	
35	1305	1312	8	W/R	Stop Time of Ch.15 [SCHEDULE 1 - 8]			uint16	
36	1313	1320	8	W/R	Stop Time of Ch.16 [SCHEDULE 1 - 8]			uint16	
37	1321	1336	16	W/R	Output Active Chanel [1- 16]	0 / 1	INACTIVE / ACTIVE	uint16	-
38	1337	1338	2	W/R	Time Output Delay [1-2]	0 - 60	Time Delay before ON ouput (0 - 60 Sec)	uint16	Second
39	1339	1340	2	W/R	Max. Temp Board 1 [Ch. 1 - 2]	0 - 1000	0 - 100.0	uint16	°C
40	1341	1342	2	W/R	Max. Temp Board 2 [Ch. 1 - 2]	0 - 1000	0 - 100.0	uint16	°C
41	1343	1344	2	W/R	Min. Temp Board 1 [Ch. 1 - 2]	0 - 1000	0 - 100.0	uint16	°C
42	1345	1346	2	W/R	Min. Temp Board 2 [Ch. 1 - 2]	0 - 1000	0 - 100.0	uint16	°C
43	1347	1348	2	W/R	Default Factory [1 - 2]	0 / 1	Not / Default	uint16	
44	1501	1516	16	R/W	Output Status Channel [1 - 16]	0 / 1	OFF / ON	uint16	
45	1517	1518	2	R	Room Temp Board 1 [Ch. 1 - 2]	0 - 1000	0 - 100.0	uint16	°C
46	1519	1520	2	R	Room Temp Board 2 [Ch. 1 - 2]	0 - 1000	0 - 100.0	uint16	°C
47	1521	1522	2	R	Sensor Status Board 1 [Ch. 1 - 2]	0 / 1 / 2	NORMAL / ERROR / COMM FAIL	uint16	-
48	1523	1524	2	R	Sensor Status Board 2 [Ch. 1 - 2]	0 / 1 / 2	NORMAL / ERROR / COMM FAIL	uint16	-
49	1525	1526	2	R	Alarm Type Board 1 [Ch. 1 - 2]	0/1/2/4/8	NORMAL / T_MAX / T_MIN / T_ERROR / COM_FAIL	uint16	-
50	1527	1528	2	R	Alarm Type Board 2 [Ch. 1 - 2]	0/1/2/4/8	NORMAL / T_MAX / T_MIN / T_ERROR / COM_FAIL	uint16	-
51	1529	1530	2	R	Alarm Event Board 1 [Ch. 1 - 2]	0 / 1	NORMAL / ALARM	uint16	-
52	1531	1532	2	R	Alarm Event Board 2 [Ch. 1 - 2]	0 / 1	NORMAL / ALARM	uint16	-
53	1533	1534	2	R	Sensor Active Board 1 [Ch. 1 - 2]	0 / 1	Non Active / Active	uint16	-
54	1535	1536	2	R	Sensor Active Board 2 [Ch. 1 - 2]	0 / 1	Non Active / Active	uint16	-
55	1537	1538	2	R	System Clock Board [1 - 2]	0000 - 2359	System Clock	uint16	Time

2.3 Tact Controller

2.3.1 Tact Controller for Output Control and Mode Setting Modbus register.

Table 2.3.1 B-connext Tact Controller supports function code 0x03 (Read Holding Register) and 0x15 (Write Multi Register).

Item	Reg. Start	Reg. End	Size	R/W	Description	Value	Detail	Type	Units
1	2001	2008	8	W/R	Output Control Channel [1 - 8]	0 / 1	OFF / ON	uint16	-
2	2009	2016	8	W/R	Output Control Channel [9 - 16]			uint16	-
3	2017	2024	8	W/R	Output Control Channel [17 - 24]			uint16	-
4	2025	2032	8	W/R	Output Control Channel [25 - 32]			uint16	-
5	2033	2040	8	W/R	Output Control Channel [33 - 40]			uint16	-
6	4001	4008	8	W/R	Output Control Channel [41 - 48]			uint16	-
7	4009	4016	8	W/R	Output Control Channel [49 - 56]			uint16	-
8	4017	4024	8	W/R	Output Control Channel [57 - 64]			uint16	-
9	2041	2048	8	W/R	Output Mode Channel [1 - 8]	0 / 1 / 2 / 3	TIMER / MANUAL / MAN_ON / MAN_OFF	uint16	-
10	2049	2056	8	W/R	Output Mode Channel [9 - 16]			uint16	-
11	2057	2064	8	W/R	Output Mode Channel [17 - 24]			uint16	-
12	2065	2072	8	W/R	Output Mode Channel [25 - 32]			uint16	-
13	2073	2080	8	W/R	Output Mode Channel [33 - 40]			uint16	-
14	4025	4032	8	W/R	Output Mode Channel [41 - 48]			uint16	-
15	4033	4040	8	W/R	Output Mode Channel [49 - 56]			uint16	-
16	4041	4048	8	W/R	Output Mode Channel [57 - 64]			uint16	-

2.3.2 Tact Controller for Start Time Schedule Table setting Modbus register.

Table 2.3.2 B-connext Tact Controller supports function code 0x03 (Read Holding Register) and 0x15 (Write Multi Register).

Item	Reg. Start	Reg. End	Size	R/W	Description	Value	Detail	Type	Units
1	2081	2088	8	W/R	Start Time [SCHEDULE 1 - 8] CH.1	0000-2359	Start Time of Tact Controller No. 1	uint16	hh:mm
2	2089	2096	8	W/R	Start Time [SCHEDULE 1 - 8] CH.2			uint16	
3	2097	2104	8	W/R	Start Time [SCHEDULE 1 - 8] CH.3			uint16	
4	2105	2112	8	W/R	Start Time [SCHEDULE 1 - 8] CH.4			uint16	
5	2113	2120	8	W/R	Start Time [SCHEDULE 1 - 8] CH.5			uint16	
6	2121	2128	8	W/R	Start Time [SCHEDULE 1 - 8] CH.6			uint16	
7	2129	2136	8	W/R	Start Time [SCHEDULE 1 - 8] CH.7			uint16	
8	2137	2144	8	W/R	Start Time [SCHEDULE 1 - 8] CH.8			uint16	
9	2145	2152	8	W/R	Start Time [SCHEDULE 1 - 8] CH.9	0000-2359	Start Time of Tact Controller No. 2	uint16	hh:mm
10	2153	2160	8	W/R	Start Time [SCHEDULE 1 - 8] CH.10			uint16	
11	2161	2168	8	W/R	Start Time [SCHEDULE 1 - 8] CH.11			uint16	
12	2169	2176	8	W/R	Start Time [SCHEDULE 1 - 8] CH.12			uint16	
13	2177	2184	8	W/R	Start Time [SCHEDULE 1 - 8] CH.13			uint16	
14	2185	2192	8	W/R	Start Time [SCHEDULE 1 - 8] CH.14			uint16	
15	2193	2200	8	W/R	Start Time [SCHEDULE 1 - 8] CH.15			uint16	
16	2201	2208	8	W/R	Start Time [SCHEDULE 1 - 8] CH.16			uint16	
17	2209	2216	8	W/R	Start Time [SCHEDULE 1 - 8] CH.17	0000-2359	Start Time of Tact Controller No. 3	uint16	hh:mm
18	2217	2224	8	W/R	Start Time [SCHEDULE 1 - 8] CH.18			uint16	
19	2225	2232	8	W/R	Start Time [SCHEDULE 1 - 8] CH.19			uint16	
20	2233	2240	8	W/R	Start Time [SCHEDULE 1 - 8] CH.20			uint16	
21	2241	2248	8	W/R	Start Time [SCHEDULE 1 - 8] CH.21			uint16	
22	2249	2256	8	W/R	Start Time [SCHEDULE 1 - 8] CH.22			uint16	
23	2257	2264	8	W/R	Start Time [SCHEDULE 1 - 8] CH.23			uint16	
24	2265	2272	8	W/R	Start Time [SCHEDULE 1 - 8] CH.24			uint16	
25	2273	2280	8	W/R	Start Time [SCHEDULE 1 - 8] CH.25	0000-2359	Start Time of Tact Controller No. 4	uint16	hh:mm
26	2281	2288	8	W/R	Start Time [SCHEDULE 1 - 8] CH.26			uint16	
27	2289	2296	8	W/R	Start Time [SCHEDULE 1 - 8] CH.27			uint16	
28	2297	2304	8	W/R	Start Time [SCHEDULE 1 - 8] CH.28			uint16	
29	2305	2312	8	W/R	Start Time [SCHEDULE 1 - 8] CH.29			uint16	
30	2313	2320	8	W/R	Start Time [SCHEDULE 1 - 8] CH.30			uint16	
31	2321	2328	8	W/R	Start Time [SCHEDULE 1 - 8] CH.31			uint16	
32	2329	2336	8	W/R	Start Time [SCHEDULE 1 - 8] CH.32			uint16	
33	2337	2344	8	W/R	Start Time [SCHEDULE 1 - 8] CH.33	0000-2359	Start Time of Tact Controller No. 5	uint16	hh:mm
34	2345	2352	8	W/R	Start Time [SCHEDULE 1 - 8] CH.34			uint16	
35	2353	2360	8	W/R	Start Time [SCHEDULE 1 - 8] CH.35			uint16	
36	2361	2368	8	W/R	Start Time [SCHEDULE 1 - 8] CH.36			uint16	
37	2369	2376	8	W/R	Start Time [SCHEDULE 1 - 8] CH.37			uint16	
38	2377	2384	8	W/R	Start Time [SCHEDULE 1 - 8] CH.38			uint16	
39	2385	2392	8	W/R	Start Time [SCHEDULE 1 - 8] CH.39			uint16	
40	2393	2400	8	W/R	Start Time [SCHEDULE 1 - 8] CH.40			uint16	
41	4049	4056	8	W/R	Start Time [SCHEDULE 1 - 8] CH.41	0000-2359	Start Time of Tact Controller No. 6	uint16	hh:mm
42	4057	4064	8	W/R	Start Time [SCHEDULE 1 - 8] CH.42			uint16	
43	4065	4072	8	W/R	Start Time [SCHEDULE 1 - 8] CH.43			uint16	
44	4073	4080	8	W/R	Start Time [SCHEDULE 1 - 8] CH.44			uint16	
45	4081	4088	8	W/R	Start Time [SCHEDULE 1 - 8] CH.45			uint16	
46	4089	4096	8	W/R	Start Time [SCHEDULE 1 - 8] CH.46			uint16	
47	4097	4104	8	W/R	Start Time [SCHEDULE 1 - 8] CH.47			uint16	
48	4105	4112	8	W/R	Start Time [SCHEDULE 1 - 8] CH.48			uint16	

Item	Reg. Start	Reg. End	Size	R/W	Description	Value	Detail	Type	Units
49	4113	4120	8	W/R	Start Time [SCHEDULE 1 - 8] CH.49	0000-2359	Start Time of Tact Controller No. 7	uint16	hh:mm
50	4121	4128	8	W/R	Start Time [SCHEDULE 1 - 8] CH.50			uint16	
51	4129	4136	8	W/R	Start Time [SCHEDULE 1 - 8] CH.51			uint16	
52	4137	4144	8	W/R	Start Time [SCHEDULE 1 - 8] CH.52			uint16	
53	4145	4152	8	W/R	Start Time [SCHEDULE 1 - 8] CH.53			uint16	
54	4153	4160	8	W/R	Start Time [SCHEDULE 1 - 8] CH.54			uint16	
55	4161	4168	8	W/R	Start Time [SCHEDULE 1 - 8] CH.55			uint16	
56	4169	4176	8	W/R	Start Time [SCHEDULE 1 - 8] CH.56			uint16	
57	4177	4184	8	W/R	Start Time [SCHEDULE 1 - 8] CH.57	0000-2359	Start Time of Tact Controller No. 8	uint16	hh:mm
58	4185	4192	8	W/R	Start Time [SCHEDULE 1 - 8] CH.58			uint16	
59	4193	4200	8	W/R	Start Time [SCHEDULE 1 - 8] CH.59			uint16	
60	4201	4208	8	W/R	Start Time [SCHEDULE 1 - 8] CH.60			uint16	
61	4209	4216	8	W/R	Start Time [SCHEDULE 1 - 8] CH.61			uint16	
62	4217	4224	8	W/R	Start Time [SCHEDULE 1 - 8] CH.62			uint16	
63	4225	4232	8	W/R	Start Time [SCHEDULE 1 - 8] CH.63			uint16	
64	4233	4240	8	W/R	Start Time [SCHEDULE 1 - 8] CH.64			uint16	

2.3.3 Tact Controller for Stop Time Schedule Table setting Modbus register.

Table 2.3.3 B-connext Tact Controller supports function code 0x03 (Read Holding Register) and 0x15 (Write Multi Register).

Item	Reg. Start	Reg. End	Size	R/W	Description	Value	Detail	Type	Units
1	2401	2408	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.1	0000-2359	Stop Time of Tact Controller No. 1	uint16	hh:mm
2	2409	2416	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.2			uint16	
3	2417	2424	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.3			uint16	
4	2425	2432	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.4			uint16	
5	2433	2440	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.5			uint16	
6	2441	2448	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.6			uint16	
7	2449	2456	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.7			uint16	
8	2457	2464	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.8			uint16	
9	2465	2472	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.9	0000-2359	Stop Time of Tact Controller No. 2	uint16	hh:mm
10	2473	2480	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.10			uint16	
11	2481	2488	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.11			uint16	
12	2489	2496	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.12			uint16	
13	2497	2504	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.13			uint16	
14	2505	2512	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.14			uint16	
15	2513	2520	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.15			uint16	
16	2521	2528	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.16			uint16	
17	2529	2536	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.17	0000-2359	Stop Time of Tact Controller No. 3	uint16	hh:mm
18	2537	2544	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.18			uint16	
19	2545	2552	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.19			uint16	
20	2553	2560	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.20			uint16	
21	2561	2568	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.21			uint16	
22	2569	2576	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.22			uint16	
23	2577	2584	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.23			uint16	
24	2585	2592	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.24			uint16	
25	2593	2600	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.25	0000-2359	Stop Time of Tact Controller No. 4	uint16	hh:mm
26	2601	2608	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.26			uint16	
27	2609	2616	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.27			uint16	
28	2617	2624	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.28			uint16	
29	2625	2632	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.29			uint16	
30	2633	2640	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.30			uint16	
31	2641	2648	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.31			uint16	
32	2649	2656	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.32			uint16	
33	2657	2664	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.33	0000-2359	Stop Time of Tact Controller No. 5	uint16	hh:mm
34	2665	2672	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.34			uint16	
35	2673	2680	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.35			uint16	
36	2681	2688	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.36			uint16	
37	2689	2696	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.37			uint16	
38	2697	2704	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.38			uint16	
39	2705	2712	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.39			uint16	
40	2713	2720	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.40			uint16	
41	4241	4248	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.41	0000-2359	Stop Time of Tact Controller No. 6	uint16	hh:mm
42	4249	4256	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.42			uint16	
43	4257	4264	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.43			uint16	
44	4265	4272	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.44			uint16	
45	4273	4280	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.45			uint16	
46	4281	4288	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.46			uint16	
47	4289	4296	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.47			uint16	
48	4297	4304	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.48			uint16	

Item	Reg. Start	Reg. End	Size	R/W	Description	Value	Detail	Type	Units
49	4305	43012	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.50	0000-2359	Stop Time of Tact Controller No. 7	uint16	hh:mm
50	4313	4320	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.50			uint16	
51	4321	4328	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.51			uint16	
52	4329	4336	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.52			uint16	
53	4337	4344	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.53			uint16	
54	4345	4352	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.54			uint16	
55	4353	4360	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.55			uint16	
56	4361	4368	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.56			uint16	
57	4369	4376	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.57	0000-2359	Stop Time of Tact Controller No. 8	uint16	hh:mm
58	4377	4384	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.58			uint16	
59	4385	4392	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.59			uint16	
60	4393	4400	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.60			uint16	
61	4401	4408	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.61			uint16	
62	4409	4416	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.62			uint16	
63	4417	4424	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.63			uint16	
64	4425	4432	8	W/R	Stop Time [SCHEDULE 1 - 8] CH.64			uint16	

2.3.4 Tact Controller for System setting Modbus register.

Table 2.3.4 B-connext Tact Controller supports function code 0x03 (Read Holding Register) and 0x15 (Write Multi Register).

Item	Reg. Start	Reg. End	Size	R/W	Description	Value	Detail	Type	Units
65	2721	2728	8	W/R	Current Maximum Alarm [1 - 8]	0 - 100	0 - 10.0	uint16	A.
66	2729	2736	8	W/R	Current Channel Monitor[1 - 8]	1 - 8	Channel of Output for Current Monitoring	uint16	-
67	2737	2744	8	W/R	Input Sensor Max for Alarm[1 - 8]	0 - 1000	0 - 100.0	uint16	℃
68	2745	2752	8	W/R	Time Output Delay[1 - 8]	0 - 60	Time Delay for output control 0 - 60 sec.	uint16	Second
69	2753	2760	8	R	Input Sensor Type [1 - 8]	0	POWER METER	uint16	-
70	2761	2768	8	W/R	Default Factory [1 - 8]	0 / 1	Not / Default	uint16	-
71	3001	3064	64	R	Output Status Channel [1 - 64]	0 / 1	OFF / ON	uint16	OFF / ON
72	3065	3072	8	R	Input Sensor[1 - 8]	0 - 1000	0 - 100.0	uint16	℃
73	3073	3080	8	R	Sensor Status[1 -8]	0 / 1 / 2	NORMAL / COMM FAIL / ERROR	uint16	-
74	3081	3088	8	W/R	Alarm Type[1 - 8]	0 / 1	NORMAL / OVER CURRENT	uint16	-
75	3089	3096	8	R	Alarm Event[1 - 8]	0 / 1	NORMAL / ALARM	uint16	-
76	3097	3104	8	R	AC Current[1 - 8]	0 - 100	0 - 10.0	uint16	A.
77	3105	3168	64	W/R	Output Run Hour [64 Ch.]	0 - 65535	Output Run Hour Record	uint16	Hr.
78	3169	3176	8	R	System Clock [1 - 8]	0000 - 2359	System Clock	uint16	Time