MODBUS TABLE ORGANIZATION

Starting Address of the Grou	p Starting Address of the Group	System Version	System Version	Group Name (Text)	Group Code	Group Complexity	Group Version
Registers (Dec)	Registers (Hex)	(Release)	(Build)		(Hex)	(Hex)	(Hex)
16384	4000	01	11	State of Breaker	51 02	10	01 00
29184	7200	01	11	Three-phase Electric Protection	73 03	20	01 00
20480	5000	01	11	Three-phase Electric Measurement	71 03	30	01 00
32768	8000	01	11	Single-channel Thermal Measurement	81 00	10	01 00

MODBUS PROTOCOL DETAILS

Function Code (Dec)	Exception Codes (Dec)	Data Encoding
2 (Read Discrete Inputs)	1, 2, 3	"Big Endian" (most
		significant byte first)
4 (Read Input Registers)	1, 2, 3	"Big Endian" (most
		significant byte first)

MODBUS OVER SERIAL DETAILS

Physical Layer	Trasmission Modes	Device Addressing	Baud Rates (bit/s)	Data Bits	Data bits trasmission	Parity	Stop Bits
standard EIA/TIA 485 (RS-485) two- wire configuration	RTU	1÷247	programmable (1200, 2400, 4800, 9600, 19200, 38400)		Least significant bit first	NONE	1

MASTER/SLAVE COMMUNICATION TIMING

Timer Description	Timer Value (msec)
Inter-character time-out	< 1,5 character times
Response delay (from master request)	-
Delay Time (between two master trasmissions)	-

www.modbus.org - MODBUS over serial line specification and implementation guide V1.02 - MODBUS APPLICATION PROTOCOL SPECIFICATION V1.1b REFER ALSO TO:

NOTE: File and printed copies of this document are not subject to document change control.

Register Number	Register Address (Dec)	Register Address (Hex)	Dimension [bit]	Description	Note	Read Function Codes	Data Storing
16385	16384	4000	3	State of Breaker			
16385	16384	4000		Open	The information reported here "self-resets" when the condition that generated it ends.	2	
16386	16385	4001		Closed	The information reported here "self-resets" when the condition that generated it ends.	2	
16387	16386	4002	1	Tripped	The information reported here "self-resets" when the condition that generated it ends.	2	
29185	29184	7200	14	Three-phase Electric Protection			
29185	29184	7200	1	Overload pre-alarm (threshold I1)	The information reported here "self-resets" when the condition that generated it ends.	2	
29186	29185	7201	1	Overload alarm (>threshold I2)	The information reported here "self-resets" when the condition that generated it ends.	2	
29187	29186	7202		RESERVED (returns "0")			
29189	29188	7204		Over-temperature alarm (>threshold T)	The information reported here "self-resets" when the condition that generated it ends.	2	
29190	29189	7205		RESERVED (returns "0")			
29194	29193	7209	1	Overload P. Relay Tripped (no phase indication)	The information reported here is maintained even when the condition that generated it ends. The "restore" conditions can be (equivalent, in alternative): • the detection of the device in Closed state • the detection of a minimum current value on the phases. The presence of Switch State Functionality is therefore NOT binding (Example: if the switch goes back to Open => the	2	Y
29195	29194	720A	1	Short circuit P. Relay Tripped (no phase indication)	The information reported here is maintained even when the condition that generated it ends. The "restore" conditions can be (equivalent, in alternative): • the detection of the device in Closed state • the detection of a minimum current value on the phases. The presence of Switch State Functionality is therefore NOT binding (Example: if the switch goes back to Open => the	2	Y
29196	29195	720B		Device Protection Relay Tripped ("III element", no phase indications)	The information reported here is maintained even when the condition that generated it ends. The "restore" conditions can be (equivalent, in alternative): • the detection of the device in Closed state • the detection of a minimum current value on the phases. The presence of Switch State Functionality is therefore NOT binding (Example: if the switch goes back to Open => the	2	Y
29197	29196	720C	1	Earth Fault Tripped	The information reported here is maintained even when the condition that generated it ends. The "restore" conditions can be (equivalent, in alternative): • the detection of the device in Closed state • the detection of a minimum current value on the phases. The presence of Switch State Functionality is therefore NOT binding (Example: if the switch goes back to Open => the	2	Y
29198	29197	720D	1	Over-temperature P. Relay tripped	The information reported here is maintained even when the condition that generated it ends. The "restore" conditions can be (equivalent, in alternative): • the detection of the device in Closed state • the detection of a minimum current value on the phases. The presence of Switch State Functionality is therefore NOT binding (Example: if the switch goes back to Open => the	2	Y



DPX³ 630-1600 Electronic 3P+T - ModbusTable LG EN v1.00.xls

Register Number	Register Address (Dec)	Register Address (Hex)	Dimension [bit]	Description	Note	Read Function Codes	Codes	Data Storing
						(Dec)	(Dec)	
				(no COILS availables)				



Register	Register	Register Register Dimension Bit Po		Bit Position	Description	Туре	Scale	Unit	Range	Note	Read	Data
Number	Address (Dec)	Address (Hex)	[word]		Jessen paren	.,,,,	Journ	J	nunge		Function Code	Storing
16385	16384	4000	6		State of Breaker						(Dec)	
16385	16384	4000	1		RESERVED (returns error 84h)						4	Y
16386	16385	4001	1		Operations counter					Total value, may not be zeroed	4	Y
16387 16388	16386 16387	4002 4003	1 1		Maximum Number of Operations Breaker Features - Rated Current		1	A		Not configurable	4	Y
16389	16388	4004	1	†	Breaker Features - Device Type and number of Poles		1	A	 		4	Y
				3÷0	Poles: number				1÷4		4	Ϋ́
				4	Poles: neutral position (left(1)/right(0))						4	Y
				7÷5	RESERVED (returns"0") Type of device: Isolating switch (0)/ Automatic (1)			 			4	Y
				9	Type of device: Repulsive Breaker (0)/Non Repulsive Breaker (1)			 	 		4	Y
				15÷10	RESERVED (returns "0")						4	Y
16390	16389	4005	1		Tripping Features - Breaking capacity		0,01	kA			4	Υ
29185 29185	29184 29184	7200 7200	249 10		Three-phase Electric Protection RESERVED (returns error 84h)							
29195	29194	720A	1		Overload P. relay (total) Tripped Counter (no phase indication)						4	Y
29196	29195	720B	1		Short circuit P. relay (total) Tripped Counter (no phase indication)			1			4	Ϋ́
			1									
29197	29196	720C	1		RESERVED (returns "8000h") Device Protection Relay (total) Tripped Counter ("III element", no						4	Y
29198	29197	720D	1		phase indications)						4	T I
29199	29198	720E	1		Earth Fault P. Relay (total) Tripped Counter						4	Υ
29200	29199	720F	1		Over-temperature P. Relay (total) Tripped Counter						4	Y
					Last Release data Buffer (Last Trip)			-			4	
29201	29200	7210	1		Last Release data Buffer (Last Trip): chronology, "year" (MSB) e "month" (LSB)							
29202	29201	7211	1		Last Release data Buffer (Last Trip): chronology, "day" (MSB) e "hour							
29203	29202	7212	1		Last Release data Buffer (Last Trip): chronology, "minutes" (MSB) e "	seconds" (LSB)						
29204	29203	7213	2		Last Release data Buffer (Last Trip): Interrupted current or			mA, °C		Expressed in "numeric coding"	4	
29206	29205	7215	1		temperature Protection settings detail which cause trip: Levels			A/%		Expressed in "numeric coding"	4	Y
29207	29206	7216	1		Protection settings detail which cause trip: Times			msec		Expressed in "numeric coding"	4	Ϋ́
29208	29207	7217	1		Protection settings detail which cause trip: Options						4	Y
				0	disabled(1)/active(0) absolute value(1)/%In(0)			1			4	Y
					I2t=k MEM OFF(001)/I2t=k MEM ON(000)			+		it's not present for device protection	4	Y
					RESERVED (returns "0")					ne s not present for device protection	4	Ϋ́
				15÷8	point of work, Ir multiple						4	Y
29209	29208	7218	1		Last Release data Buffer (Last Trip): "Tripped" type reading only bit							
				0	reply - part I Overload P. Relay Tripped Reply (no phase indication)			 	 		4	\vdash
				1	Short-circuit P. Relay Tripped Reply (no phase indication)						4	
				2	Device Protection Relay Tripped Reply ("III element", no phase						4	
-				3	indication) Earth Fault P. Relay Tripped Reply		<u> </u>	 	-		4	++
				4	Over-temperature P. Relay Tripped Reply			 	 		4	\vdash
				5	Overload P. Relay Tripped Reply phase 1							
				6	Overload P. Relay Tripped Reply phase 2							
				8	Overload P. Relay Tripped Reply phase 3 Overload P. Relay Tripped Reply N			 				\vdash
				9	Short circuit Instantaneus P. Relay Tripped Reply phase 1			 	 			
				10	Short circuit Instantaneus P. Relay Tripped Reply phase 2							
				11	Short circuit Instantaneus P. Relay Tripped Reply phase 3							
 				12	Short circuit Instantaneus P. Relay Tripped Reply N		 	 	-		-	$\vdash \vdash \vdash$
				13	Short circuit which may be delayed P. Relay Tripped Reply phase 1							
				14	Short circuit which may be delayed P. Relay Tripped which Reply							
					phase 2							-
				15	Short circuit which may be delayed P. Relay Tripped Reply phase 3							
29210	29209	7219	1		Last Release data Buffer (Last Trip): "Tripped" type reading only bit							
2,210	23203	1213	1		reply - part II			<u> </u>				\longleftarrow
				1	Short circuit P. Relay Tripped which may be delayed Reply N Device Protection Relay Tripped Reply phase 1 ("III element")		 	+	 		-	\vdash
				2	Device Protection Relay Tripped Reply phase 1 ("III element")		 					
				3	Device Protection Relay Tripped Reply phase 3 ("III element")							
				4	Device Protection Relay Tripped Reply N("III element")							
				5 6	Relay Tripped in mode "Main Setting" Relay Tripped in mode "Dual Setting"		 	 				+
				7	Overload Relay Tripped in mode "MEM=OFF"		 	 	 		 	\vdash
				8	Short circuit which may be delayed Relay Tripped in mode "I ² t=k"							
				٥								



			<u> </u>	1	1	Short circuit which may be delayed Relay Tripped in mode "Logical				1	-		
					9	Selectivity" (with delay Tm)							
1					10								
1992 1992 1994 1996					11	Earth Fault P. Relay Tripped in mode "I ² t=k"							
					15÷12		 		-		See details in Last Release data Buffer (Last		
2-24-06 7-24. 13	29211	29210	/21A	10		Last Release data Buffer 1					Trip)		
1.20-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	29221	29220	7224	10		Last Release data Buffer 2					Trip)		
1,777 1,778 10	29231	29230	722E	10		Last Release data Buffer 3							
Probability	29241	29240	7238	10		Last Release data Buffer 4							
1972 1972	29251	29250	7242	10		Last Release data Buffer 5							
1978 1978	29261	29260	724C	10		Last Release data Buffer 6							
1998 1998 1998 1998 1998 1998 1998 1998 1998 1999	29271	29270	7256	10		Last Release data Buffer 7							
29301 29200 778A 10 Les Release data Bullier 9 See design at an microse cota metric (1887) 29301	29281	29280	7260	10		Last Release data Buffer 8					See details in Last Release data Buffer (Last		
29310 29300 774	29291	29290	726A	10		Last Release data Buffer 9					See details in Last Release data Buffer (Last		
1993 1993 1995	29301	29300	7274	10		Last Release data Buffer 10					See details in Last Release data Buffer (Last		
2911 7253 1				100							1110)		
29413 7941 7756 1 03corrosot cross				1									
29415 29415 2755 2 61 - short circula which may be delayed: limes Move Movement of Progress of Progr				1				[mscc]					
29417 29416 7288 1				2		G1 – short circuit which may be delayed: levels			,			4	Y
1				1					msec		Expressed in "numeric coding"		
1	29417	29416	/2E8	1	n	Bit()—disabled(1)/active(0)						•	
1					1								Y
15-8 Point of work for 12 curve, multiple of 17												•	Y
29418 29417 7759 4 RESERVE Instrums *800000000***800***8000***9000***\$0000***\$0000***\$0000***\$0000***\$0000***\$0000***\$0000***\$0000***\$0000***\$0000***\$000000													Y
29422 29421 72ED 2 G1 - device protection: levels M/% Expressed in "numeric coding" 4 Y Y 29425 72F1 1 G1 - device protection: otions MeC Expressed in "numeric coding" 4 Y Y Y Y Y Y Y Y Y	29418	29417	72E9	4	13-0								
29425 29424 72F0 1				2									Y
				1					msec		Expressed in "numeric coding"	•	
15±2 SESENCE (Petuars '0') A Y Y Y Y Y Y Y Y Y	23423	23424	7210	1	0							-	<u> </u>
29426 29425 72F1 1 GI - earth leskage protection: levels A/% Expressed in "numeric coding" 4 Y					1	absolute value(1)/%In(0)						4	
29427 29426 72F2 1 G1 - earth leakage protection: times msec Expressed in "numeric coding" 4 Y	20426	20425	72E1	1	15÷2				Δ/0/0		Evanged in "numeric coding"	•	
29428 29427 72F3 1				1									
1 absolute value(1)%Ir(0)				1							Expressed in Trainerie county	•	Y
4±2 curve t=k(001)/12t=k(000)					0								Y
7-5 RESERVED (returns "0")					1 4÷2								Y
29429 29428 72F4 3 RESERVED (returns '8000000h'', 80000'', 8000'') 29432 29431 72F7 1 G1 - over-temperature protection: levels						RESERVED (returns "0")						4	Y
29432 29431 72F7 1 G1 - over-temperature protection: levels G1 - over-temperature protection: level	22.122	22.122			15÷8	Point of work for I2t curve, multiple of Ir)						4	Y
29432 72F8 1 Gil - over-temperature protection; times				1					°C.		Expressed in "numeric coding"		
20481 20480 5000 56 Three-phase Electric Measurement				1									
20481 20480 5000 1	20481	20480	5000	56		Three-phase Electric Measurement							
20482 20481 5001 1	20481	20480	5000	1		Phase 1 Current Value (R)	unsigned integer		Α		(fixed more significant bit = 0)		
20483 20482 5002 1 Phase 3 Current Value (T) unsigned integer A (fixed more significant bit = 0) 1 20484 20483 5003 1 RESERVED (returns "80000000h", "8000", "8000")	20482	20481	5001	1		Phase 2 Current Value (S)	unsigned integer		Α		(fixed more significant bit = 0)	4	
20485 20484 5004 1 Earth Current Value unsigned integer A Expressed on "numeric coding"; without mark (fixed more significant bit = 0) 20486 20485 5005 12 RESERVED (all return "8000h") 20498 20497 5011 1 1-2 Voltage unsigned integer V Expressed on "numeric coding"; without mark (fixed more significant bit = 0) 20499 20498 5012 1 1-3 Voltage unsigned integer V (fixed more significant bit = 0) 20500 20499 5013 1 2-3 Voltage unsigned integer V Expressed on "numeric coding"; without mark (fixed more significant bit = 0) 20501 20500 5014 12 RESERVED (all return "8000h") Expressed on "numeric coding"; without mark (fixed more significant bit = 0) Expressed on "numeric coding"; without mark (fixed more significant bit = 0) Expressed on "numeric coding"; without mark (fixed more significant bit = 0) Expressed on "numeric coding"; without mark (fixed more significant bit = 0) Expressed on "numeric coding"; without mark (fixed more significant bit = 0) Expressed on "numeric coding"; without mark (fixed more significant bit = 0) Expressed on "numeric coding"; without mark (fixed more significant bit = 0) Expressed on "numeric coding"; without mark (fixed more significant bit = 0)				1			unsigned integer		Α			4	
20485 20484 5004 1 Earth Current Value unsigned integer A (fixed more significant bit = 0)	20484	20483	5003	1		RESERVED (returns "80000000h","8000","8000")					Expressed on "numeric coding": without mark		
20498 20497 5011 1 1-2 Voltage unsigned integer V (fixed more significant bit = 0) 20499 20498 5012 1 1-3 Voltage unsigned integer V Expressed on "numeric coding"; without mark (fixed more significant bit = 0) 20500 20499 5013 1 2-3 Voltage unsigned integer V (fixed more significant bit = 0) 20501 20500 5014 12 RESERVED (all return "8000h") 20512 20503 5014 12 RESERVED (all return "8000h") 20513 20513 5030 1 1 Phase 1 (P) TUP Computers for description.				_			unsigned integer		Α			4	
20499 20498 5012 1 1-3 Voltage unsigned integer V Expressed on "numeric coding"; without mark (fixed more significant bit = 0) 20500 20499 5013 1 2-3 Voltage unsigned integer V (fixed more significant bit = 0) 20501 20500 5014 12 RESERVED (all return "8000h") 20513 20513 F030 1 Expressed on "numeric coding"; without mark 4				ì			unsigned integer		V			4	
20500 20499 5013 1 2-3 Voltage unsigned integer V Expressed on "numeric coding"; without mark 4 20501 20500 5014 12 RESERVED (all return "8000h") 20513 20513 F030 1 Expressed on "numeric coding"; without mark 4 Expressed on "numeric coding"; without mark 4				1					<u> </u>		Expressed on "numeric coding"; without mark	4	
20501 20500 5014 12							1		,		Expressed on "numeric coding"; without mark	4	+
20513 F020 1 Phase 1 (D) TUD Computes fundamental special integral integral (D) TUD Computes fundamental special (D) Tud C							anaighea micegel						
				1			unsigned integer		%			4	



20514	20513	5021	1	Phase 2 (S) THD Current vs. fundamental	unsigned integer	%	Expressed on "numeric coding"; without mark (fixed more significant bit = 0)	4	
20515	20514	5022	1	Phase 3 (T) THD Current vs. fundamental	unsigned integer	%	Expressed on "numeric coding"; without mark (fixed more significant bit = 0)	4	
20516	20515	5023	4	RESERVED (all return "8000h")					
20520	20519	5027	1	1-2 Voltage THD vs. fundamental	unsigned integer	%	Expressed on "numeric coding"; without mark (fixed more significant bit = 0)	4	
20521	20520	5028	1	1-3 Voltage THD vs. fundamental	unsigned integer	%	Expressed on "numeric coding"; without mark (fixed more significant bit = 0)	4	
20522	20521	5029	1	2-3 Voltage THD vs. fundamental	unsigned integer	%	Expressed on "numeric coding"; without mark (fixed more significant bit = 0)	4	
20523	20522	502A	1	Three-phase Active Power	signed integer	kW	Expressed in "numeric coding"; with mark (more significant bit = mark)	4	
20524	20523	502B	1	Three-phase reactive power	signed integer	kvar	Expressed in "numeric coding"; with mark (more significant bit = mark)	4	
20525	20524	502C	3	RESERVED (all return "8000h")					
20528	20527	502F	1	Three-phase Power Factor (PF)	signed integer 0,01	L	Expressed in "numeric coding"; with mark (more significant bit = mark)	4	
20529	20528	5030	1	RESERVED (returns "8000h")					
20530	20529	5031	1	Three-phase frequency	signed integer	Hz	Expressed in "numeric coding"; with mark (more significant bit = mark)	4	
20531	20530	5032	2	RESERVED (returns "80000000h")					
20533	20532	5034	2	Positive Three-phase Active Energy	unsigned integer	kWh	Expressed on "numeric coding"; without mark (fixed more significant bit = 0)	4	Y
20535	20534	5036	2	Negative Three-phase Active Energy	unsigned integer	kWh	Expressed on "numeric coding"; without mark (fixed more significant bit = 0)	4	Y
20537	20536	5038	2	RESERVED (returns "80000000h")					
20539	20538	503A	2	Positive Three-phase Reactive Energy	unsigned integer	kvarh	Expressed on "numeric coding"; without mark (fixed more significant bit = 0)	4	Y
20541	20540	503C	2	Negative Three-phase Reactive Energy	unsigned integer	kvarh	Expressed on "numeric coding"; without mark (fixed more significant bit = 0)	4	Y
32769	32768	8000	1	Single-channel Thermal Measurement					
32769	32768	8000	1	Sensor 1 Temperature Value	signed integer	°C	Expressed in "numeric coding"	4	

DPX³ 630-1600 Electronic 3P+T - ModbusTable LG EN v1.00.xls

Reg	gister	Register	Register	Dimension	Bit Position	Description	Туре	Scale	Unit	Range	Note	Read	Write	Data
Nu	mber	Address	Address	[word]								Function	Function	Storing
		(Dec)	(Hex)									Codes	Codes	
												(Dec)	(Dec)	
						(no HOLDING REGISTERS availables)								

HOLDING REGISTERS - Words (R&W)

