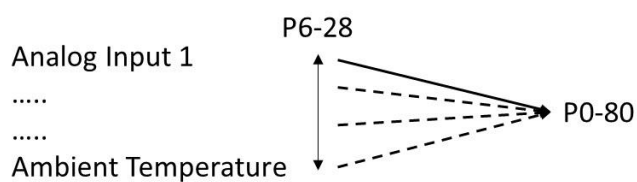


PowerXL™

DA1 Variable Frequency Drives

Pointer to Parameter – Use of parameters P6-28 and P0-80



Level 4	<p>1 – Fundamental – No previous experience necessary</p> <p>2 – Basic – Basic knowledge recommended</p> <p>3 – Advanced – Reasonable knowledge required</p> <p>4 – Expert – Good experience recommended</p>
---------	--

Contents

- 1 Function..... 5
- 2 Setting possibilities..... 6
 - 2.1 Decoding scope indices 13
 - 2.2 Decoding device information 15

Danger! - Dangerous electrical voltage!

- Disconnect the power supply of the device.
- Ensure that devices cannot be accidentally restarted.
- Verify isolation from the supply.
- Cover or enclose any adjacent live components.
- Follow the engineering instructions (AWA/IL) for the device concerned.
- Only suitably qualified personnel in accordance with EN 50110-1/-2 (VDE 0105 Part 100) may work on this device/system.
- Before installation and before touching the device ensure that you are free of electrostatic charge.
- The functional earth (FE, PES) must be connected to the protective earth (PE) or the potential equalization. The system installer is responsible for implementing this connection.
- Connecting cables and signal lines should be installed so that inductive or capacitive interference does not impair the automatic control functions.
- Suitable safety hardware and software measures should be implemented for the I/O interface so that an open circuit on the signal side does not result in undefined states.
- Deviations of the mains voltage from the rated value must not exceed the tolerance limits given in the specification, otherwise this may cause malfunction and/or dangerous operation.
- Emergency stop devices complying with IEC/EN 60204-1 must be effective in all operating modes. Unlatching of the emergency-stop devices must not cause a restart.
- Devices that are designed for mounting in housings or control cabinets must only be operated and controlled after they have been properly installed and with the housing closed.
- Wherever faults may cause injury or material damage, external measures must be implemented to ensure a safe operating state in the event of a fault or malfunction (e.g. by means of separate limit switches, mechanical interlocks etc.).
- Frequency inverters may have hot surfaces during and immediately after operation.
- Removal of the required covers, improper installation or incorrect operation of motor or frequency inverter may destroy the device and may lead to serious injury or damage.
- The applicable national safety regulations and accident prevention recommendations must be applied to all work carried on live frequency inverters.
- The electrical installation must be carried out in accordance with the relevant electrical regulations (e.g. with regard to cable cross sections, fuses, PE).
- Transport, installation, commissioning and maintenance work must be carried out only by qualified personnel (IEC 60364, HD 384 and national occupational safety regulations).
- Installations containing frequency inverters must be provided with additional monitoring and protective devices in accordance with the applicable safety regulations. Modifications to the frequency inverters using the operating software are permitted.
- All covers and doors must be kept closed during operation.

To reduce the hazards for people or equipment, the user must include in the machine design measures that restrict the consequences of a malfunction or failure of the frequency inverter (increased motor speed or sudden standstill of motor). These measures include: – Other independent devices for monitoring safety related variables (speed, travel, end positions etc.).

– Electrical or non-electrical system-wide measures (electrical or mechanical interlocks).

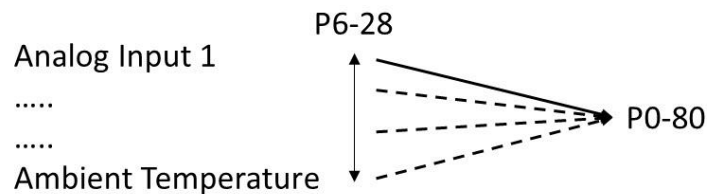
– Never touch live parts or cable connections of the frequency inverter after it has been disconnected from the power supply. Due to the charge in the capacitors, these parts may still be alive after disconnection. Consider appropriate warning signs.

Disclaimer

The information, recommendations, descriptions, and safety notations in this document are based on Eaton's experience and judgment and may not cover all contingencies. If further information is required, an Eaton sales office should be consulted. Sale of the product shown in this literature is subject to the terms and conditions outlined in the applicable Terms and Conditions for Sale of Eaton or other contractual agreement between Eaton and the purchaser. THERE ARE NO UNDERSTANDINGS, AGREEMENTS, WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, OTHER THAN THOSE SPECIFICALLY SET OUT IN ANY EXISTING CONTRACT BETWEEN THE PARTIES. ANY SUCH CONTRACT STATES THE ENTIRE OBLIGATION OF EATON. THE CONTENTS OF THIS DOCUMENT SHALL NOT BECOME PART OF OR MODIFY ANY CONTRACT BETWEEN THE PARTIES. As far as applicable mandatory law allows so, in no event will Eaton be responsible to the purchaser or user in contract, in tort (including negligence), strict liability, or otherwise for any special, indirect, incidental, or consequential damage or loss whatsoever, including but not limited to damage or loss of use of equipment, plant or power system, cost of capital, loss of power, additional expenses in the use of existing power facilities, or claims against the purchaser or user by its customers resulting from the use of the information, recommendations, and descriptions contained herein. The information contained in this manual is subject to change without notice.

1 Function

There are many internal values inside the variable frequency drives **PowerXL™ DA1**, which can be displayed or read with an own ID via a fieldbus. In menu 0 parameter P0-80 exists, which acts like a wildcard. This means, that the user can determine the variable, which is displayed or transferred via P0-80. The determination is done by setting parameter P6-28 accordingly. Herewith it is possible to have access for example to values inside self-made function blocks or to input and output terminals of the variable frequency drive.



This application note describes the setting possibilities and explains the functionality behind.

Parameters P6-28 and P0-80 are inside Level 3 of the menu. This level has to be activated by prompting the “Password Level3” (P6-30) into P1-14 (Password). Password Level3 is “201” by default.

PNU	Parameter	Name	Range	Default
382.0	P6-28	PointerToParameter	0 ... 200	0
382.1	P0-80	Value@Pointer	depends on the setting of P6-28	

2 Setting possibilities

General hint: Some data can exist as a percentage as well as in Q12 format. The values **1000/4096** inside the table below have to be understood as follows:

- **1000** = 100.0 % in percentage format
- **4096** = 100.0 % in Q12 format

P6-28	Function	Format	Description
0	AUS	Binary	P0-80 = 0
1	Digital Input 1	Binary	Status of the digital inputs \square = LOW signal at the respective terminal $ $ = HIGH signal at the respective terminal
2	Digital Input 2	Binary	
3	Digital Input 3	Binary	
4	Digital Input 4	Binary	
5	Digital Input 5	Binary	
6	Digital Input 6	Binary	
7	Digital Input 7	Binary	
8	Digital Input 8	Binary	
9	Analog Output 1	Data	Value at the analog output ADO1 Used as analog output: $\square\dots4096$ Used as digital output: \square = LOW signal at terminal 8 $ $ = HIGH signal at terminal 8
10	Analog Output 2	Data	Value at the analog output ADO2 Used as analog output: $\square\dots4096$ Used as digital output: \square = LOW signal at terminal 11 $ $ = HIGH signal at terminal 11
11	Relay Output RO1	Binary	Status of the output relays RO1 ... RO5 \square = contact open $ $ = contact closed
12	Relay Output RO2	Binary	
13	Relay Output RO3	Binary	
14	Relay Output RO4	Binary	
15	Relay Output RO5	Binary	
16	ON	Binary	P0-80 = 1
17	User Register 1	Binary / Data	Content of the user registers 1...15 in a function block
18	User Register 2	Binary / Data	
19	User Register 3	Binary / Data	
20	User Register 4	Binary / Data	
21	User Register 5	Binary / Data	
22	User Register 6	Binary / Data	
23	User Register 7	Binary / Data	
24	User Register 8	Binary / Data	
25	User Register 9	Binary / Data	
26	User Register 10	Binary / Data	
27	User Register 11	Binary / Data	
28	User Register 12	Binary / Data	
29	User Register 13	Binary / Data	
30	User Register 14	Binary / Data	
31	User Register 15	Binary / Data	
32	User Analog Output 1	Data	Value at a user analog output in a function block
33	User Analog Output 2	Data	
34	Reserved		

P6-28	Function	Format	Description
35	Reserved		
36	User Relay / Digital Output 1	Binary	Status of a user relay / digital output in a function block P0-80 = 0 = logic LOW P0-80 = 1 = logic HIGH
37	User Relay / Digital Output 2	Binary	
38	User Relay / Digital Output 3	Binary	
39	User Relay / Digital Output 4	Binary	
40	User Relay / Digital Output 5	Binary	
41	User scaling value	Data	User scaling value in a function block. P0-80 = 0 → scaling value = 0.0 % P0-80 = 1000/4096 → scaling value = 100.0 %
42	User scaling decimal	Data	Decimal places of the user scaling value
43	User speed reference	Data	Value of the speed reference in a function block P0-80 = 0 → speed reference = 0.0 % P0-80 = 1000/4096 → speed reference = 100.0 %
44	User torque reference	Data	Value of the torque reference in a function block P0-80 = 0 → torque reference = 0.0 % P0-80 = 1000/4096 → torque reference = 100.0 %
45	User / fieldbus ramp reference	Data	Ramp time coming from a function block or via fieldbus P0-80 = 0 ... 60000 = 0.00 ... 600.00 s
46	Scope Index 1 / 2	Data	Selected data source for the scope channel (See list in chapter 0)
47	Scope Index 3 / 4	Data	
48	24 hour Timer Clock	Data	Content of the 24 h Timer P0-73, expressed in minutes. (Example: 2 h 16 min → P0-80 = 136)
49	User Display control register	Data	Bestimmt, welcher Wert auf der Antriebsanzeige dargestellt wird. 0 = Drehzahl in Hz 1 = Motorstrom 2 = Motorleistung 3 = Skalierte Anzeige 1 4 = Skalierte Anzeige 2 5 = Drehzahl in min ⁻¹
50	User Display Value register	Data	User display value
51	Reserved		
52	Reserved		
53	Reserved		
54	Reserved		
55	Reserved		
56	Reserved		
57	Reserved		
58	Reserved		
59	Reserved		

P6-28	Function	Format	Description
60	Reserved		
61	Analog Input AI1 (Q12)	Data	Value at analog input AI1 Used as analog input: 0...4096 Used as digital input DI4: 0 = LOW signal at terminal 6 4096 = HIGH signal at terminal 6
62	Analog Input AI1 (%)	Data	Value at analog input AI1 in percent. 100 % → P0-80 = 1000 Used as analog input: 0... 1000 Used as digital input DI4: 0 = LOW signal at terminal 6 1000 = HIGH signal at terminal 6
63	Analog Input AI2 (Q12)	Data	Value at analog input AI1 Used as analog input: 0...4096 Used as digital input DI4: 0 = LOW signal at terminal 10 4096 = HIGH signal at terminal 610
64	Analog Input AI2 (%)	Data	Value at analog input AI1 in percent. 100 % → P0-80 = 1000 Used as analog input: 0... 1000 Used as digital input DI4: 0 = LOW signal at terminal 10 1000 = HIGH signal at terminal 10
65	Digital input status DI1...DI5	Data	BDC coded status of the digital inputs DI1...DI5 DI1 = 2 ⁰ DI2 = 2 ¹ DI3 = 2 ² DI4 = 2 ³ DI5 = 2 ⁴ Example: HIGH signal at DI2 and DI4 → P0-80 = 2 ¹ + 2 ³ = 2 + 8 = 10
66	Speed Reference	Data	Speed reference before the ramp P0-80 = 0 ... P1-01 • 60 s / min Example: P1-01 = 50 Hz → P0-80 = 0 ... 3000 min ⁻¹ ATTENTION! The maximum value corresponds to the synchronous speed of a two pole motor with a frequency according to P1-01!
67	Digital Speed Pot	Data	Digital speed reference, e.g. set with the keypad P0-80 = 0 ... P1-01 • 60 s / min (see above)
68	Fieldbus Speed Reference	Data	Speed reference coming from a fieldbus P0-80 = 0 ... P1-01 • 60 s / min (see above)
69	Master Speed Reference	Data	Speed reference of master respectively slave drive, which operate in master / slave mode via OP bus.
70	Slave Speed Reference	Data	P0-80 = 0 ... P1-01 • 60 s / min (see above)
71	Frequency Speed Reference	Data	Speed reference, which is set by a frequency signal at terminal 4 (DI3). P0-80 = 0 ... P1-01 • 60 s / min (see above)

P6-28	Function	Format	Description
72	Torque Reference (Q12)	Data	Torque reference in Q12 format P0-80 = 0 → torque reference = 0.0 % P0-80 = 4096 → torque reference = 100.0 %
73	Torque Reference (%)	Data	Torque reference as a percentage P0-80 = 0 → torque reference = 0.0 % P0-80 = 1000 → torque reference = 100.0 %
74	Master Torque Reference	Data	Torque reference of the master drive in master / slave mode
75	Fieldbus Torque Reference	Data	xx
76	User PID Reference	Data	Reference of the PID controller, coming from a function block (P9-38 = 1) Reference = 0.0 % → P0-80 = 0 Reference = 100.0 % → P0-80 = 4096
77	User PID Feedback	Data	Feedback of the PID controller, coming from a function block (P9-39 = 1) Feedback = 0.0 % → P0-80 = 0 Feedback = 100.0 % → P0-80 = 4096
78	PID Reference	Data	Reference of the PID controller, set in Menu 3 (P9-38 = 0) Reference = 0.0 % → P0-80 = 0 Reference = 100.0 % → P0-80 = 4096
79	PID Feedback	Data	Feedback of the PID controller, set in Menu 3 (P9-30 = 0) Feedback = 0.0 % → P0-80 = 0 Feedback = 100.0 % → P0-80 = 4096
80	PID Output	Data	Output = 0.0 % → P0-80 = 0 Output = 100.0 % → P0-80 = 4096
81	Motor Speed	Data	Speed of the connected motor P0-80 = 0 ... P1-01 · 60 s / min Example: P1-01 = 50 Hz → P0-80 = 0 ... 3000 min ⁻¹ ATTENTION! The maximum value corresponds to the synchronous speed of a two pole motor with a frequency according to P1-01!
82	Motor Current	Data	Resolution: 0.1 A I = 5.3 A → P0-80 = 53
83	Motor Torque	Data	Motor Torque P0-80 = 0 → torque = 0.0 % P0-80 = 1000 → torque = 100.0 %
84	Motor Power	Data	Motor power in kW with two decimal places. Example: 1500 = 15.00 kW
85	PID Speed Reference	Data	Speed reference at PID controller output P0-80 = 0 ... P1-01 · 60 s / min (see above)
86	DC bus voltage	Data	Voltage in the DC bus [V]
87	Drive temperature	Data	Heat sink temperature [°C]
88	Ambient Temperature	Data	Ambient temperature of the variable frequency drive [°C]
89	Scaled Display Value 1	Data	Scaling values used in a function block
90	Scaled Display Value 2	Data	
91	Reserved		

P6-28	Function	Format	Description
92	Reserved		
93	Extended IO Input	Data	Input data of an I/O extension module
94	Reserved		
95	Reserved		
96	Plug-In Module ID	Data	Reserved for development purposes
97	Anybus Module ID	Data	
98	Anybus Module Error Code	Data	
99	Anybus Status	Data	
100	Reserved		
101	Scope Channel 1 Data	Data	Data of the channel selected with "Scope Index"
102	Scope Channel 2 Data	Data	
103	Scope Channel 3 Data	Data	
104	Scope Channel 4 Data	Data	
105	OLED Language Index	Data	Selected language of the internal OLED display X = English X = German X = Spanish X = Italian X = French X = Swedish X = Russian
106	OLED Display Version	Data	Firmware version of the internal OLED display
107	Reserved		
108	Drive Rating ID	Data	Decimal coded technical device information. Decoding see chapter 0
109	Reserved		
110	Reserved		
111	Reserved		
112	Reserved		
113	Reserved		
114	Reserved		
115	Reserved		
116	Reserved		
117	Reserved		
118	Reserved		
119	FS8 stir fan speed	Data	Speed of the stir fan on devices frame size 8 (FS8)
120	Reserved		
121	Reserved		
122	Reserved		
123	Function Block Program Cycle Time	Data	Function Block Program Cycle Time
124	Function Block ID	Data	ID of the Function Block
125	Reserved		
126	Reserved		
127	Reserved		
128	Reserved		
129	Reserved		

P6-28	Function	Format	Description
130	kWh Meter (user re-settable)	Data	Example: 35 kWh → P0-80 = 350
131	MWh Meter (user re-settable)	Data	Example: 2 MWh → P0-80 = 2
132	kWh Meter (not re-settable)	Data	Example: 35 kWh → P0-80 = 350
133	MWh Meter (not re-settable)	Data	Example: 2 MWh → P0-80 = 2
134	t-Run [Hours]	Data	Total operating time since the date of manufacture (hours of P0-31)
135	t-Run [Minutes and seconds]	Data	Total operating time since the date of manufacture (minutes and seconds of P0-31, expressed in seconds. Example: 24 min : 43 s. → P0-80 = 1483 (60 x 24 + 43))
136	t-Run since Enable [hours]	Data	Total operating time since the last Enable signal was applied (hours of P0-34)
137	t-Run since Enable [minutes and seconds]	Data	Total operating time since the last Enable signal was applied (minutes and seconds of P0-34, expressed in seconds. Example: 24 min : 43 s. → P0-80 = 1483 (60 x 24 + 43))
138	Reserved		
139	Reserved		
140	Reserved		
141	Reserved		
142	Reserved		
143	Real time clock second	Data	Reserved for a future support of a real time clock
144	Real time clock minute	Data	
145	Real time clock hour	Data	
146	Real time clock week day	Data	
147	Real time clock day	Data	
148	Real time clock month	Data	
149	Real time clock year	Data	
150	Reserved		
151	Reserved		
152	Reserved		
153	Reserved		
154	Reserved		
155	Reserved		
156	Reserved		
157	Reserved		
158	Reserved		
159	Reserved		
160	Reserved		
161	Reserved		
162	Reserved		
163	Reserved		
164	Reserved		
165	Reserved		
166	Reserved		

P6-28	Function	Format	Description
167	Reserved		
168	Reserved		
169	Reserved		
170	Reserved		
171	Reserved		
172	Reserved		
173	Reserved		
174	Reserved		
175	Reserved		
176	Reserved		
177	Reserved		
178	Reserved		
179	Reserved		
180	Reserved		
181	Reserved		
182	Reserved		
183	Reserved		
184	Reserved		
185	User Register 16	Binary / Data	Content of the user registers 16...31 in a function block
186	User Register 17	Binary / Data	
187	User Register 18	Binary / Data	
188	User Register 19	Binary / Data	
189	User Register 20	Binary / Data	
190	User Register 21	Binary / Data	
191	User Register 22	Binary / Data	
192	User Register 23	Binary / Data	
193	User Register 24	Binary / Data	
194	User Register 25	Binary / Data	
195	User Register 26	Binary / Data	
196	User Register 27	Binary / Data	
197	User Register 28	Binary / Data	
198	User Register 29	Binary / Data	
199	User Register 30	Binary / Data	
200	User Register 31	Binary / Data	

2.1 Decoding scope indices

Data Source	Index		Unit	Range	Decimal
	dec	hex			
Analog Output 1 (Q12)	09	09	-	0 ... 4096	0
Analog Output 2 (Q12)	10	0A	-	0 ... 4096	0
User Register 1	17	11	-	±32767	0
User Register 2	18	12	-	±32767	0
User Register 3	19	13	-	±32767	0
User Register 4	20	14	-	±32767	0
User Register 5	21	15	-	±32767	0
User Register 6	22	16	-	±32767	0
User Register 7	23	17	-	±32767	0
User Register 8	24	18	-	±32767	0
User Register 9	25	19	-	±32767	0
User Register 10	26	1A	-	±32767	0
User Register 11	27	1B	-	±32767	0
User Register 12	28	1C	-	±32767	0
User Register 13	29	1D	-	±32767	0
User Register 14	30	1E	-	±32767	0
User Register 15	31	1F	-	±32767	0
User Speed Reference (Hz)	43	2B	Hz	±30000	1
User Speed Reference (rpm)			rpm		0
User Torque Reference (Q12)	44	2C	-	±20475	0
Analog Input 1 (Q12)	61	3D	-	±4096	0
Analog Input 1 (%)	62	3E	%	±4096	0
Analog Input 2 (Q12)	63	3F	-	±4096	0
Analog Input 2 (%)	64	40	%	±4096	0
Speed Reference (Hz)	66	42	Hz	±30000	1
Speed Reference (rpm)			rpm		0
Digital Speed Pot (Hz)	67	43	Hz	±30000	1
Digital Speed Pot (%)			rpm		0
Fieldbus Speed Reference (Hz)	68	44	Hz	±30000	1
Fieldbus Speed Reference (%)			rpm		0
Master Speed Reference (Hz)	69	45	Hz	±30000	1
Master Speed Reference (%)			rpm		0
Slave Speed Reference (Hz)	70	46	Hz	±30000	1
Slave Speed Reference (%)			rpm		0
Frequency Speed Reference (Hz)	71	47	Hz	±30000	1
Frequency Speed Reference (%)			rpm		0
Torque Reference (Q12)	72	48	-	±20475	0
Torque Reference (%)	73	49	%	±5000 (500.0 %)	1
Master Torque Reference (Q12)	74	4A	-	±20475	0
Master Torque Reference (%)					
Fieldbus Torque Reference (Q12)	75	4B	-	±20475	0
Fieldbus Torque Reference (%)					
PID Reference (Q12)	78	4E	-	±4096	0
PID Reference (%)					
PID Feedback (Q12)	79	4F	-	±4096	0
PID Feedback (%)					

Data Source	Index		Unit	Range	Decimal
	dec	hex			
PID Output (Q12) PID Output (%)	80	50	-	±4096	0
Ambient Temperature	88	58	-	±32767	0
Motor Speed (Hz) Motor Speed (rpm)	102	66	Hz rpm	±30000	1 0
Drive Temperature	115	73	°C	±125	0
Rotor Speed (Hz) Rotor Speed (rpm)	119	77	Hz rpm	±30000	1 0
Pre-Ramp Speed Reference (Hz) Pre-Ramp Speed Reference (rpm)	122	7A	Hz rpm	±30000	1 0
Post-Ramp Speed Reference (Hz) Post-Ramp Speed Reference (rpm)	123	7B	Hz rpm	±30000	1 0
Encoder Speed (Hz) Encoder Speed (rpm)	127	7F	Hz rpm	±30000	1 0
Motor Torque (Q12) Motor Torque (%)	128	80	-	±32767	0
DC Bus Voltage Ripple	129	81	-	±32767	0
Motor Current	131	83	A	0...65535	0
U-phase DCCT	136	88	-	± 32767	0
V-phase DCCT	137	89	-	± 32767	0
W-phase DCCT	138	8A	-	± 32767	0
DC bus voltage	139	8B	-	0...65535	0
P0-77 Low Word	152	98	-	0...65535	0
P0-77 High Word	153	99	-	0...65535	0
P0-78 Low Word	154	9A	-	0...65535	0
P0-78 High Word	155	9B	-	0...65535	0
Motor Voltage (V)	160	A0	-	0...65535	0
Motor Power (kW)	161	A1	-	0...65535	0

In case P6-28 = 46 (scope channel 1 + 2) or P6-28 = 47 (scope channels 3 + 4) P0-80 shows the scope index as a decimal number. To decode it, proceed as follows:

- Convert the decimal number into a hex one.
- Digits 1 and 2 show the hex index of scope channel 1 (3), digits 3 and 4 the one of channel 2 (4)

Example:

- P6-28 = 46
- P0-80 shows 15747 (dec)
- Convert 15747 (dec) into the hex equivalent → 3D83
- The first 2 digits represent the index of scope channel 1 (3D = Analog Input 1 (Q12)), digits 3 and 4 represent index of scope channel 2 (83 = Motor Current)

2.2 Decoding device information

In case P6-28 is set to 108, device information is displayed represented by a decimal number. For decoding proceed as follows:

- Convert the decimal number into a hex one.
- 1st digit = Frame size (FS...)
 - Example: 2 = FS2
- 2nd digit = Voltage category (mains voltage)
 - 0 = 115 V
 - 1 = 230 V
 - 2 = 230 V
 - 3 = 400 V
 - 4 = 460 V
 - 5 = 525 V
 - 6 = 575 V
- 3rd digit = number of input and output phases as well as country specific settings (kW / HP)
 - See table 2.2.1
- 4th digit = power index
 - See table 2.2.2

Table 2.2.1 (3rd digit)

Value of 3rd digit	Country specific setting	Number of phases on the mains side	Number of phases on the motor side
0	kW	3	3
1	HP	3	3
2	kW	3	1
3	HP	3	1
4	kW	1	3
5	HP	1	3
6	kW	1	1
7	HP	1	1

Table 2.2.2 (4th digit)

Frame size	Unit	Power index							
		0	1	2	3	4	5	6	7
FS2	kW	0.75	1.5	2.2	0.75	1.5	2.2	4	-
	HP	1	2	3	1	2	3	5	-
FS3	kW	3	4	5.5	5.5	7.5	11	-	-
	HP	4	5	7.5	7.5	10	15	-	-
FS4	kW	7.5	11	15	18.5	22	-	-	-
	HP	10	15	20	25	30	-	-	-
FS5	kW	15	18.5	22	30	37	45	-	-
	HP	20	25	30	40	50	60	-	-
FS6	kW	22	30	37	45	45	55	75	90
	HP	30	40	50	60	60	75	100	125

Frame size	Unit	Power index							
		0	1	2	3	4	5	6	7
FS7	kW	55	75	90	110	132	160	-	-
	HP	75	100	125	175	200	250	-	-
FS8	kW								
	HP								

Example:

- P6-28 = 108
- displayed at P0-80: 8768
- 8768 dec = 2240 hex
- 1st digit = 2 → frame size 2
- 2nd digit = 2 → voltage category 230 V
- 3rd digit = 4 → The device has a single phase mains supply and three phases on the motor side. Default settings in kW.
- 4th digit = 0 → The device with frame size 2 and a kW setting is rated for motors 0.75 kW.