

Annex - Frequency converter setting values Mitsubishi FR-A740 / 741 / 840 (A-Frequen1_V4301.FRA)

Lean-Lift

Setting values for Hänel Lean-Lift
Frequency converter U1
MP12N (only from program version CPU 1:
V4.3)

			HS27 HS28	HS37 HS38	HS52	HS34	HS44
			FR-A 740 / FR-A840 / FR-A741 HS				
Frequency Converter U1			-00170	-00250	-00250	-00170	-00250
			5,5 KW	7,5 KW	7,5 KW	5,5 KW	7,5 KW
			High-Speed				
			/250 HS	/500 HS	/1000 HS	/500 HS	/700 HS
Parameter			PMS35	PMS36	PMS23	PMS31	PMS33
1	2	1	2	3	4	6	7
1	Maximum frequency	5 to 120 Hz	100Hz	100Hz	120Hz	100Hz	100Hz
2	Minimum frequency		1,5Hz	1,5Hz	1,5Hz	1,5Hz	1,5Hz
3	Base frequency		63Hz	63Hz	60Hz	200Hz	200Hz
7	Acceleration time		1,5sec.	1,5sec.	1,5sec.	1,5sec.	1,5sec.
8	Deceleration time		0,3sec.	0,3sec.	1,1sec.	0,3sec.	0,3sec.
9	Electronic thermal O/L relay	8,00 to 17,00 A	11,14A	13,74A	9,99A	8,73A	11,55A
11	DC injection brake operation time		0sec.	0sec.	0sec.	0sec.	0sec.
13	Starting frequency		0,5Hz	0,5Hz	0,5Hz	0,5Hz	0,5Hz
14	Load pattern selection		40	40	40	40	40
18	High speed maximum frequency	120 – 150 Hz	150Hz	150Hz	128Hz	102Hz	102Hz
19	Base frequency voltage		400V	400V	400V	400V	400V
20	Acceleration/deceleration reference frequency		200Hz	200Hz	200Hz	200Hz	200Hz
21	Acceleration/deceleration time increments		1	1	1	1	1
22	Stall prevention operation level (torque limit level)	ES: 70,0 to 135,0 % HS: 70,0 to 150,0 %	125%	125%	125%	131,2%	107,7%
22	0840a 2 -635 Strombegrenzung P22-1	840-635	98,6%	120,6%	85%		
22	1300a 2 -635 Strombegrenzung P22-2	1300-635	101,6%	123,3%	86,4%		
22	1640a 2 -635 Strombegrenzung P22-3	1640-635	104,3%	125,6%	81,5%		
22	1860a 2 -635 Strombegrenzung P22-4	1860-635	96,8%	127,1%	82,5%		
22	2060a 2 -635 Strombegrenzung P22-5	2060-635	98,4%	129,7%	80,9%		
22	2300a 2 -635 Strombegrenzung P22-6	2300-635	101,4%	126,8%	78,6%		
22	2460a 2 -635 Strombegrenzung P22-7	2460-635	103,1%	128,2%	80,7%		
22	2860a 2 L -635 Strombegrenzung P22-8	2860-635 L	94,7%	122,2%			
22	3060a 2 L -635 Strombegrenzung P22-9	3060-635 L	107,1%	116,3%			
22	3260a 2 L -635 Strombegrenzung P22-10	3260-635 L	95,9%	106,7%			
22	2860a 2 -635 Strombegrenzung P22-11	2860-635	109,8%	131,2%	76,6%		
22	3060a 2 -635 Strombegrenzung P22-12	3060-635	111,8%	133%	75,6%		
22	3260a 2 -635 Strombegrenzung P22-13	3260-635	113,7%	126,6%	74,6%		
22	0840a 1 -635 / 825 Strombegrenzung P22-14	840-635 / 825	97,8%	92,2%	86,3%		
22	1300a 1 -635 / 825 Strombegrenzung P22-15	1300-635 / 825	101,3%	94,2%	87,7%		
22	1640a 1 -635 / 825 Strombegrenzung P22-16	1640-635 / 825	104,1%	96,2%	82,9%		
22	1860a 1 -635 / 825 Strombegrenzung P22-17	1860-635 / 825	97,2%	97,3%	84,2%		
22	2060a 1 -635 / 825 Strombegrenzung P22-18	2060-635 / 825	99,8%	98,8%	82,6%		
22	2300a 1 -635 / 825 Strombegrenzung P22-19	2300-635 / 825	101,3%	97,3%	80,4%		
22	2460a 1 -635 / 825 Strombegrenzung P22-20	2460-635 / 825	102,7%	99,3%	83,4%		
22	2860a 1 L -635 / 825 Strombegrenzung P22-21	2860-635 / 825 L	96,7%	95,2%			
22	3060a 1 L -635 / 825 Strombegrenzung P22-22	3060-635 / 825 L	96,8%	87,8%			
22	3260a 1 L -635 / 825 Strombegrenzung P22-23	3260-635 / 825 L	98,4%	80,1%			
22	2860a 1 -635 / 825 Strombegrenzung P22-24	2860-635 / 825	111,9%	102,1%	79,1%		
22	3060a 1 -635 / 825 Strombegrenzung P22-25	3060-635 / 825	112,3%	100,6%	78,2%		
22	3260a 1 -635 / 825 Strombegrenzung P22-26	3260-635 / 825	112,5%	99,2%	77,3%		
22	0840b 3 -1047 / 1270 Strombegrenzung P22-40	840-1047 / 1270	104,3%	96,4%	89%		
22	1300b 3 -1047 / 1270 Strombegrenzung P22-41	1300-1047 / 1270	109,4%	99,3%	84,7%		
22	1640b 3 -1047 / 1270 Strombegrenzung P22-42	1640-1047 / 1270	104,2%	101,7%	80,4%		
22	1860b 3 -1047 / 1270 Strombegrenzung P22-43	1860-1047 / 1270	89,4%	97,3%	81,8%		
22	2060b 3 -1047 / 1270 Strombegrenzung P22-44	2060-1047 / 1270	109,7%	98,5%	80,7%		
22	2300b 3 -1047 / 1270 Strombegrenzung P22-45	2300-1047 / 1270	113,2%	101,2%	79,1%		
22	2460b 3 -1047 / 1270 Strombegrenzung P22-46	2460-1047 / 1270	115,6%	102,9%	80,2%		
22	2860b 3 L -1047 / 1270 Strombegrenzung P22-47	2860-1047 / 1270 L		80,2%			
22	3060b 3 L -1047 / 1270 Strombegrenzung P22-48	3060-1047 / 1270 L		82%			
22	3260b 3 L -1047 / 1270 Strombegrenzung P22-49	3260-1047 / 1270 L		83,7%			
22	2860b 3 -1047 / 1270 Strombegrenzung P22-50	2860-1047 / 1270		93,6%	92,2%		
22	3060b 3 -1047 / 1270 Strombegrenzung P22-51	3060-1047 / 1270		89,5%	90,1%		
22	3260b 3 -1047 / 1270 Strombegrenzung P22-52	3260-1047 / 1270		91,2%	88%		
22	3660a 2 -635 Strombegrenzung P22-53	3660-635				131,3%	107,7%
22	4060a 2 -635 Strombegrenzung P22-54	4060-635				133,3%	109,4%
22	4460a 2 -635 Strombegrenzung P22-55	4460-635				122,5%	100,5%
22	3660a 1 -635 / 825 Strombegrenzung P22-56	3660-635 / 825				135,4%	111,1%
22	4060a 1 -635 / 825 Strombegrenzung P22-57	4060-635 / 825				137,6%	113%
22	4460a 1 -635 / 825 Strombegrenzung P22-58	4460-635 / 825				126,9%	104,2%
22	Stall prevention Special Version Kom.Nr.:						
23	Stall prevention operation level compensation factor at doub		150%	100%	150%	100%	100%
29	Acceleration/deceleration pattern selection		00	00	00	10	10
30	Regenerative function selection (only FR-A 740/840)		1	1	1	1	1

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Lean-Lift

Setting values for Hänel Lean-Lift
Frequency converter U1
MP12N (only from program version CPU 1:
V4.3)

			HS27	HS28	HS37 HS38	HS52	HS34	HS44
	Frequency Converter U1		FR-A 740 / FR-A840 / FR-A741 HS					
			-00170	-00250	-00250	-00170	-00250	
			5.5 KW	7.5 KW	7.5 KW	5.5 KW	7.5 KW	
			High-Speed					
		Setting Range MP12N V4.3	/250 HS PMS35	/500 HS PMS36	/1000 HS PMS23	/500 HS PMS31	/700 HS PMS33	
	Parameter 2	1	2	3	4	6	7	
42	Output frequency detection		0.5Hz	0.5Hz	0.5Hz	0.5Hz	0.5Hz	
43	Output frequency detection for reverse rotation		99.99Hz	99.99Hz	99.99Hz	99.99Hz	99.99Hz	
44	Second acceleration/deceleration time		0.35sec.	0.35sec.	0.35sec.	0.15sec.	0.15sec.	
45	Second deceleration time		0.2sec.	0.2sec.	0.2sec.	0.1sec.	0.1sec.	
46	Second torque boost	4.0 to 15.0 %	6.7%	6.7%	6.7%	7.8%	7.8%	
47	Second V/F (base frequency)		87Hz	87Hz	87Hz	87Hz	87Hz	
48	Second stall prevention operation current	ES: 15.0 to 45.0 % HS: 15.0 to 45.0 %	33%	40%	33%			
48	0840a 2 -635 2. Stromgrenze P48-1	840-635	22.7%	30.3%	38.4%			
48	1300a 2 -635 2. Stromgrenze P48-2	1300-635	23.2%	30.7%	39%			
48	1640a 2 -635 2. Stromgrenze P48-3	1640-635	23.6%	31%	34.5%			
48	1860a 2 -635 2. Stromgrenze P48-4	1860-635	20.2%	31.2%	35.1%			
48	2060a 2 -635 2. Stromgrenze P48-5	2060-635	20.4%	31.5%	33.3%			
48	2300a 2 -635 2. Stromgrenze P48-6	2300-635	20.8%	30.1%	31.4%			
48	2460a 2 -635 2. Stromgrenze P48-7	2460-635	20.9%	30.3%	32.6%			
48	2860a 2 L -635 2. Stromgrenze P48-8	2860-635 L	17.6%	28%				
48	3060a 2 L -635 2. Stromgrenze P48-9	3060-635 L	21.5%	26.1%				
48	3260a 2 L -635 2. Stromgrenze P48-10	3260-635 L	17.4%	23.1%				
48	2860a 2 -635 2. Stromgrenze P48-11	2860-635	23%	30.9%	25.7%			
48	3060a 2 -635 2. Stromgrenze P48-12	3060-635	23.4%	31.2%	25%			
48	3260a 2 -635 2. Stromgrenze P48-13	3260-635	23.7%	28.8%	24.3%			
48	0840a 1 -635 / 825 2. Stromgrenze P48-14	840-635 / 825	23%	25.8%	38.7%			
48	1300a 1 -635 / 825 2. Stromgrenze P48-15	1300-635 / 825	23.6%	26.1%	39.4%			
48	1640a 1 -635 / 825 2. Stromgrenze P48-16	1640-635 / 825	24.1%	26.5%	35%			
48	1860a 1 -635 / 825 2. Stromgrenze P48-17	1860-635 / 825	20.6%	26.7%	35.6%			
48	2060a 1 -635 / 825 2. Stromgrenze P48-18	2060-635 / 825	21%	26.9%	34.1%			
48	2300a 1 -635 / 825 2. Stromgrenze P48-19	2300-635 / 825	21.3%	25.9%	32.2%			
48	2460a 1 -635 / 825 2. Stromgrenze P48-20	2460-635 / 825	21.5%	26.2%	33.5%			
48	2860a 1 L -635 / 825 2. Stromgrenze P48-21	2860-635 / 825 L	18%	24.1%				
48	3060a 1 L -635 / 825 2. Stromgrenze P48-22	3060-635 / 825 L	17.7%	21.6%				
48	3260a 1 L -635 / 825 2. Stromgrenze P48-23	3260-635 / 825 L	17.8%	19.2%				
48	2860a 1 -635 / 825 2. Stromgrenze P48-24	2860-635 / 825	23.9%	26.8%	26.1%			
48	3060a 1 -635 / 825 2. Stromgrenze P48-25	3060-635 / 825	23.5%	25.8%	25.5%			
48	3260a 1 -635 / 825 2. Stromgrenze P48-26	3260-635 / 825	23.1%	24.9%	24.8%			
48	0840b 3 -1047 / 1270 2. Stromgrenze P48-40	840-1047 / 1270	23.6%	26.2%	39.5%			
48	1300b 3 -1047 / 1270 2. Stromgrenze P48-41	1300-1047 / 1270	24.9%	26.8%	35.3%			
48	1640b 3 -1047 / 1270 2. Stromgrenze P48-42	1640-1047 / 1270	21.5%	27.2%	31.5%			
48	1860b 3 -1047 / 1270 2. Stromgrenze P48-43	1860-1047 / 1270	16%	25%	32.2%			
48	2060b 3 -1047 / 1270 2. Stromgrenze P48-44	2060-1047 / 1270	22.3%	24.9%	30.9%			
48	2300b 3 -1047 / 1270 2. Stromgrenze P48-45	2300-1047 / 1270	22.7%	25.3%	29.3%			
48	2460b 3 -1047 / 1270 2. Stromgrenze P48-46	2460-1047 / 1270	23%	25.7%	29.7%			
48	2860b 3 L -1047 / 1270 2. Stromgrenze P48-47	2860-1047 / 1270 L		17.9%				
48	3060b 3 L -1047 / 1270 2. Stromgrenze P48-48	3060-1047 / 1270 L		18.1%				
48	3260b 3 L -1047 / 1270 2. Stromgrenze P48-49	3260-1047 / 1270 L		18.3%				
48	2860b 3 -1047 / 1270 2. Stromgrenze P48-50	2860-1047 / 1270		21.7%	31.2%			
48	3060b 3 -1047 / 1270 2. Stromgrenze P48-51	3060-1047 / 1270		20.2%	29.6%			
48	3260b 3 -1047 / 1270 2. Stromgrenze P48-52	3260-1047 / 1270		20.4%	28.1%			
48	3660a 2 -635 2. Stromgrenze P48-53	3660-635				32.3%	37.6%	
48	4060a 2 -635 2. Stromgrenze P48-54	4060-635				32.9%	38.2%	
48	4460a 2 -635 2. Stromgrenze P48-55	4460-635				28.2%	32.9%	
48	3660a 1 -635 / 825 2. Stromgrenze P48-56	3660-635 / 825				33.2%	38.6%	
48	4060a 1 -635 / 825 2. Stromgrenze P48-57	4060-635 / 825				33.8%	39.3%	
48	4460a 1 -635 / 825 2. Stromgrenze P48-58	4460-635 / 825				29.1%	33.9%	
48	Second stall prevention Special Version Kom.Nr.:							
49	Second stall prevention operation frequency		9999	9999	9999	9999	9999	
51	Second electronic thermal O/L relay	1.0 to 4.00 A	1.6A	1.78A	2.25A	2.25A	2.25A	
52	DJ/PU main display data selection		11	11	11	11	11	
54	FM terminal function selection	1 to 7	1	1	1	1	1	
55	Frequency monitoring reference	100 to 150 Hz	150Hz	150Hz	150Hz	150Hz	150Hz	
56	Current monitoring reference	6.00 to 34.00 A	17A	25A	17A	25A	25A	
65	Retry selection		4	4	4	4	4	
66	Stall prevention operation reduction starting frequency		100Hz	63Hz	100Hz	50Hz	50Hz	
67	Number of retries at alarm occurrence		3	3	3	3	3	

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Frequency converter U1
MP12N (only from program version CPU 1:
V4.3)

			HS27	HS28	HS37 HS38	HS52	HS34	HS44
			FR-A 740 / FR-A840 / FR-A741 HS					
			-00170	-00250	-00250	-00170	-00250	-00250
	Frequency Converter U1		5,5 KW	7,5 KW	7,5 KW	5,5 KW	7,5 KW	7,5 KW
			High-Speed					
			/250 HS	/500 HS	/1000 HS	/500 HS	/700 HS	
	Parameter	Setting Range MP12N V4.3	PMS35	PMS36	PMS23	PMS31	PMS33	
1	2	1	2	3	4	6	7	
70	Special regenerative brake duty (only FR-A 740/840) Lift Height <= 9m and Firmware <= 7992/4	10,0 to 90,0 %	10%	13%	13%	13%	13%	13%
70	Special regenerative brake duty (only FR-A 740/840) Lift Height > 9m and Firmware 7992/5	10,0 to 90,0 %	50 %	50 %	50 %	50 %	50 %	50 %
71	Applied motor		3	3	3	17	17	
72	PWM frequency selection		15	15	15	15	15	
73	Analog input selection		0	0	0	0	0	
74	Input filter time constant		1	1	1	1	1	
80	Motor capacity		3KW	4KW	4KW	4KW	5,5KW	
81	Number of motor poles		14	14	14	14	14	
83	Motor rated voltage		400V	400V	400V	400V	400V	
84	Rated motor frequency		63Hz	63Hz	63Hz	50Hz	50Hz	
89	Speed control gain (magnetic flux vector)		35%	75%	35%	75%	75%	
95	Online auto tuning selection		1	1	1	1	1	
96	Auto tuning setting/status	0 or 1	1	1	1	1	1	
110	Third acceleration/deceleration time	0 to 2 sec.	2sec.	2sec.	2sec.	0,87sec.	0,87sec.	
111	Third deceleration time		0sec.	0sec.	0sec.	0sec.	0sec.	
112	Third torque boost	2,0 to 14,0 %	14%	14%	14%	9%	9%	
113	Third V/F (base frequency)		87Hz	87Hz	87Hz	87Hz	87Hz	
114	Third stall prevention operation current	6,0 to 40,0 %	25,6%	18,1%	18,1%	27%	19,1%	
115	Third stall prevention operation frequency		99Hz	99Hz	99Hz	99Hz	99Hz	
145	PU display language selection	0 to 7	1	1	1	1	1	
150	0840a 2 -635 Ausgangstromüberwachung P150-1	840-635	10,5%	15,8%	13,9%			
150	1300a 2 -635 Ausgangstromüberwachung P150-2	1300-635	10,6%	15,9%	13,9%			
150	1640a 2 -635 Ausgangstromüberwachung P150-3	1640-635	10,7%	16%	13,2%			
150	1860a 2 -635 Ausgangstromüberwachung P150-4	1860-635	10%	16%	13,3%			
150	2060a 2 -635 Ausgangstromüberwachung P150-5	2060-635	10%	16,1%	13%			
150	2300a 2 -635 Ausgangstromüberwachung P150-6	2300-635	10,1%	15,7%	12,7%			
150	2460a 2 -635 Ausgangstromüberwachung P150-7	2460-635	10,1%	15,8%	12,9%			
150	2860a 2 L -635 Ausgangstromüberwachung P150-8	2860-635 L	9,3%	15%				
150	3060a 2 L -635 Ausgangstromüberwachung P150-9	3060-635 L	10,3%	14,2%				
150	3260a 2 L -635 Ausgangstromüberwachung P150-10	3260-635 L	9,3%	12,9%				
150	2860a 2 -635 Ausgangstromüberwachung P150-11	2860-635	10,6%	15,9%	11,7%			
150	3060a 2 -635 Ausgangstromüberwachung P150-12	3060-635	10,7%	16%	11,6%			
150	3260a 2 -635 Ausgangstromüberwachung P150-13	3260-635	10,8%	15,2%	11,5%			
150	0840a 1 -635 / 825 Ausgangstromüberwachung P150-14	840-635 / 825	10,6%	11,2%	13,9%			
150	1300a 1 -635 / 825 Ausgangstromüberwachung P150-15	1300-635 / 825	10,7%	11,3%	14%			
150	1640a 1 -635 / 825 Ausgangstromüberwachung P150-16	1640-635 / 825	10,8%	11,3%	13,3%			
150	1860a 1 -635 / 825 Ausgangstromüberwachung P150-17	1860-635 / 825	10%	11,4%	13,4%			
150	2060a 1 -635 / 825 Ausgangstromüberwachung P150-18	2060-635 / 825	10,1%	11,4%	13,2%			
150	2300a 1 -635 / 825 Ausgangstromüberwachung P150-19	2300-635 / 825	10,2%	11,2%	12,9%			
150	2460a 1 -635 / 825 Ausgangstromüberwachung P150-20	2460-635 / 825	10,3%	11,3%	13,1%			
150	2860a 1 L -635 / 825 Ausgangstromüberwachung P150-21	2860-635 / 825 L	9,4%	10,7%				
150	3060a 1 L -635 / 825 Ausgangstromüberwachung P150-22	3060-635 / 825 L	9,4%	9,8%				
150	3260a 1 L -635 / 825 Ausgangstromüberwachung P150-23	3260-635 / 825 L	9,4%	9%				
150	2860a 1 -635 / 825 Ausgangstromüberwachung P150-24	2860-635 / 825	10,8%	11,4%	11,8%			
150	3060a 1 -635 / 825 Ausgangstromüberwachung P150-25	3060-635 / 825	10,7%	11,2%	11,7%			
150	3260a 1 -635 / 825 Ausgangstromüberwachung P150-26	3260-635 / 825	10,6%	10,9%	11,6%			
150	0840b 3 -1047 / 1270 Ausgangstromüberwachung P150-40	840-1047 / 1270	10,7%	11,3%	14%			
150	1300b 3 -1047 / 1270 Ausgangstromüberwachung P150-41	1300-1047 / 1270	11%	11,4%	13,4%			
150	1640b 3 -1047 / 1270 Ausgangstromüberwachung P150-42	1640-1047 / 1270	10,3%	11,5%	12,8%			
150	1860b 3 -1047 / 1270 Ausgangstromüberwachung P150-43	1860-1047 / 1270	8,9%	10,9%	12,9%			
150	2060b 3 -1047 / 1270 Ausgangstromüberwachung P150-44	2060-1047 / 1270	10,4%	10,9%	12,6%			
150	2300b 3 -1047 / 1270 Ausgangstromüberwachung P150-45	2300-1047 / 1270	10,5%	11%	12,4%			
150	2460b 3 -1047 / 1270 Ausgangstromüberwachung P150-46	2460-1047 / 1270	10,6%	11,1%	12,4%			
150	2860b 3 L -1047 / 1270 Ausgangstromüberwachung P150-47	2860-1047 / 1270 L	8,8%	8,6%	12,7%			
150	3060b 3 L -1047 / 1270 Ausgangstromüberwachung P150-48	3060-1047 / 1270 L		8,7%				
150	3260b 3 L -1047 / 1270 Ausgangstromüberwachung P150-49	3260-1047 / 1270 L		8,7%				
150	2860b 3 -1047 / 1270 Ausgangstromüberwachung P150-50	2860-1047 / 1270		9,9%	12,7%			
150	3060b 3 -1047 / 1270 Ausgangstromüberwachung P150-51	3060-1047 / 1270		9,4%	12,4%			
150	3260b 3 -1047 / 1270 Ausgangstromüberwachung P150-52	3260-1047 / 1270		9,4%	12,2%			
150	3660a 2 -635 Ausgangstromüberwachung P150-53	3660-635				17,4%	14,3%	
150	3660a 2 -635 Ausgangstromüberwachung P150-53	3660-635				17,4%	14,3%	
150	4060a 2 -635 Ausgangstromüberwachung P150-54	4060-635				17,6%	14,4%	
150	4460a 2 -635 Ausgangstromüberwachung P150-55	4460-635				16,4%	13,5%	
150	3660a 1 -635 / 825 Ausgangstromüberwachung P150-56	3660-635 / 825				17,6%	14,5%	
150	4060a 1 -635 / 825 Ausgangstromüberwachung P150-57	4060-635 / 825				17,8%	14,6%	
150	4460a 1 -635 / 825 Ausgangstromüberwachung P150-58	4460-635 / 825				16,7%	13,7%	

Annex - Frequency converter setting values Mitsubishi FR-A740 / 741 / 840 (A-Frequen1_V4301.FRA)

Lean-Lift

Setting values for Hänel Lean-Lift
Frequency converter U1
MP12N (only from program version CPU 1:
V4.3)

			HS27	HS28	HS37 HS38	HS52	HS34	HS44
			FR-A 740 / FR-A840 / FR-A741 HS					
			-00170	-00250	-00250	-00170	-00250	
	Frequency Converter U1		5,5 KW	7,5 KW	7,5 KW	5,5 KW	7,5 KW	
			High-Speed					
			/250 HS	/500 HS	/1000 HS	/500 HS	/700 HS	
	Parameter	Setting Range MP12N V4.3	PMS35	PMS36	PMS23	PMS31	PMS33	
1	2	1	2	3	4	6	7	
151	Output current detection signal delay time		0,1	0,1	0,1	0,1	0,1	
155	RT signal function validity condition selection		1	1	1	1	1	
156	Stall prevention operation selection		9	9	9	9	9	
157	OL signal output timer		0sec.	0sec.	0sec.	0sec.	0sec.	
158	Output AM Torque		7	7	7	7	7	
180	RL terminal function selection		3	3	3	3	3	
181	RM terminal function selection		18	18	18	18	18	
182	RH terminal function selection		9	9	9	9	9	
183	RT terminal function selection		18	18	18	18	18	
184	AU terminal function selection		4	4	4	4	4	
185	JOG terminal function selection		17	17	17	17	17	
190	RUN terminal function selection		20	20	20	20	20	
192	IPF terminal function selection		164	164	164	164	164	
193	OL terminal function selection		12	12	12	12	12	
194	FU terminal function selection		4	4	4	4	4	
195	ABC1 terminal function selection		199	199	199	199	199	
196	ABC2 terminal function selection	145 and 9999	9999	9999	9999	9999	9999	
244	Cooling fan operation selection		1	1	1	1	1	
251	Output phase failure protection selection		1	1	1	1	1	
260	PWM frequency automatic switchover		0,1sec.	0,1sec.	0,1sec.	0,1sec.	0,1sec.	
265	Power-failure deceleration time 2		0sec.	0sec.	0sec.	0sec.	0sec.	
278	Brake opening frequency		0,5Hz	0,5Hz	0,5Hz	0,8Hz	0,8Hz	
279	Brake opening current		20%	20%	20%	28,2%	40,5%	
280	Brake opening current detection time		0,1sec.	0,1sec.	0,1sec.	0,1sec.	0,1sec.	
281	Brake operation time at start		0,3sec.	0,3sec.	0,3sec.	0,3sec.	0,3sec.	
282	Brake operation frequency		1,5Hz	1,5Hz	1,5Hz	1,5Hz	1,5Hz	
283	Brake operation time at stop		0,1sec.	0,1sec.	0,1sec.	0,1sec.	0,1sec.	
284	Deceleration detection function selection		0	0	0	0	0	
292	Automatic acceleration/deceleration		8	8	8	8	8	
331	RS-485 FU-Adress		0	0	0	0	0	
332	RS-485 Baud		96	96	96	96	96	
333	RS-485 stop-bit		0	0	0	0	0	
335	RS-485 communication retry count		9999	9999	9999	9999	9999	
336	RS-485 communication check time interval		9999	9999	9999	9999	9999	
341	RS-485 communication CRL/LF selection		2	2	2	2	2	
342	Communication EEPROM write selection		1	1	1	1	1	
450	Second applied motor	0 to 20 and 9999	9999	9999	9999	9999	9999	
451	Second motor control method selection	20 and 9999	9999	9999	9999	9999	9999	
453	Second Motor capacity	0,0 to 2,0 KW	0,4KW	0,4KW	0,55KW	0,55KW	0,55KW	
454	Number of second motor poles		4	4	4	4	4	
456	Rated second motor voltage		400V	400V	400V	400V	400V	
457	Rated second motor frequency		87Hz	87Hz	87Hz	87Hz	87Hz	
463	Second motor auto tuning setting/status	0 or 1	103	103	103	103	103	
574	Second Motor online tuning	0 or 1	1	1	1	1	1	
506	Parameter 1 for User (only FR-A 740)		4301	4301	4301	4301	4301	
507	Parameter 2 for user (only FR-A 740)		35	36	23	31	33	
632	Output current stability waiting time (only FR-A741/840)		12	12	12	12	12	
633	Output current filter (only FR-A741/840)		5	5	5	5	5	
634	Output phase failure deection time (only FR-A741/840)		3	3	3	3	3	
684	Tuning data increment switchover		1	1	1	1	1	
699	Adjusting the response of Input terminal (only FR-A840)		5	5	5	5	5	
730	Output current stability waiting time (only FR-A 740)		12	12	12	12	12	
731	Output current filter (only FR-A 740)		5	5	5	5	5	
732	Output phase failure deection time (only FR-A 740)		3	3	3	3	3	
800	Control method selection		20	20	20	20	20	
866	Torque Monitoring reference		150%	150%	150%	150%	150%	
888	Parameter 1 for User (only FR-A741/840)		4301	4301	4301	4301	4301	
889	Parameter 2 for user (only FR-A741/840)		35	36	23	31	33	
872	Input Phase fault		1	1	1	1	1	
902	Terminal 2 frequency setting bias frequency		0Hz	0Hz	0Hz	0Hz	0Hz	
903	Terminal 2 frequency setting gain frequency	95 to 105	0,0%	0,0%	0,0%	0,0%	0,0%	
			150Hz	150Hz	150Hz	150Hz	150Hz	
			100,0%	100,0%	100,0%	100,0%	100,0%	

Annex - Frequency converter setting values Mitsubishi FR-A740 / 741 / 840 (A-Frequen1_V4301.FRA)

Lean-Lift

Setting values for Hänel Lean-Lift
Frequency converter U1
MP12N (only from program version CPU 1:
V4.3)

			HS27	HS28	HS37	HS38	HS52	HS34	HS44
	Frequency Converter U1		FR-A 740 / FR-A840 / FR-A741 HS						
			-00170	-00250	-00250	-00170	-00250		
			5,5 KW	7,5 KW	7,5 KW	5,5 KW	7,5 KW		
			High-Speed						
		Setting Range	/250 HS	/500 HS	/1000 HS	/500 HS	/700 HS		
	Parameter	MP12N V4.3	PMS35	PMS36	PMS23	PMS31	PMS33		
1	2	1	2	3	4	6	7		
	Container max. payload								
GewZul	840-635///75.0/ S1	840-635	300 Kg	500 Kg	1000 Kg				
GewZul	1300-635///75.0/ S1	1300-635	300 Kg	500 Kg	1000 Kg				
GewZul	1640-635///75.0/ S1	1640-635	300 Kg	500 Kg	900 Kg				
GewZul	1860-635///75.0/ S1	1860-635	250 Kg	500 Kg	900 Kg				
GewZul	2060-635///75.0/ S1	2060-635	250 Kg	500 Kg	850 Kg				
GewZul	2300-635///75.0/ S1	2300-635	250 Kg	470 Kg	800 Kg				
GewZul	2460-635///75.0/ S1	2460-635	250 Kg	470 Kg	800 Kg				
GewZul	2860-635///75.0/ S1	2860-635 L	190 Kg	400 Kg					
GewZul	3060-635///75.0/ S1	3060-635 L	250 Kg	350 Kg					
GewZul	3260-635///75.0/ S1	3260-635 L	180 Kg	270 Kg					
GewZul	2860-635///75.0/ H1	2860-635	250 Kg	450 Kg	650 Kg				
GewZul	3060-635///75.0/ H1	3060-635	250 Kg	450 Kg	625 Kg				
GewZul	3260-635///75.0/ H1	3260-635	250 Kg	400 Kg	600 Kg				
GewZul	840-825///75.0/ S1	840-825	300 Kg	500 Kg	1000 Kg				
GewZul	1300-825///75.0/ S1	1300-825	300 Kg	500 Kg	1000 Kg				
GewZul	1640-825///75.0/ S1	1640-825	300 Kg	500 Kg	900 Kg				
GewZul	1860-825///75.0/ S1	1860-825	250 Kg	500 Kg	900 Kg				
GewZul	2060-825///75.0/ S1	2060-825	250 Kg	500 Kg	850 Kg				
GewZul	2300-825///75.0/ S1	2300-825	250 Kg	470 Kg	800 Kg				
GewZul	2460-825///75.0/ S1	2460-825	250 Kg	470 Kg	800 Kg				
GewZul	2860-825///75.0/ S1	2860-825 L	190 Kg	400 Kg					
GewZul	3060-825///75.0/ S1	3060-825 L	180 Kg	325 Kg					
GewZul	3260-825///75.0/ S1	3260-825 L	180 Kg	250 Kg					
GewZul	2860-825///75.0/ H1	2860-825	250 Kg	450 Kg	650 Kg				
GewZul	3060-825///75.0/ H1	3060-825	240 Kg	425 Kg	625 Kg				
GewZul	3260-825///75.0/ H1	3260-825	230 Kg	400 Kg	600 Kg				
GewZul	840-1047///75.0/ S1	840-1047	300 Kg	500 Kg	1000 Kg				
GewZul	1300-1047///75.0/ S1	1300-1047	300 Kg	500 Kg	950 Kg				
GewZul	1640-1047///75.0/ S1	1640-1047	250 Kg	500 Kg	850 Kg				
GewZul	1860-1047///75.0/ S1	1860-1047	250 Kg	450 Kg	850 Kg				
GewZul	2060-1047///75.0/ S1	2060-1047	250 Kg	450 Kg	800 Kg				
GewZul	2300-1047///75.0/ S1	2300-1047	250 Kg	400 Kg	750 Kg				
GewZul	2460-1047///75.0/ S1	2460-1047	250 Kg	400 Kg	750 Kg				
GewZul	2860-1047///75.0/ S1	2860-1047 L		250 Kg					
GewZul	3060-1047///75.0/ S1	3060-1047 L		220 Kg					
GewZul	3260-1047///75.0/ S1	3260-1047 L		220 Kg					
GewZul	2860-1047///75.0/ H1	2860-1047		350 Kg	700 Kg				
GewZul	3060-1047///75.0/ H1	3060-1047		300 Kg	650 Kg				
GewZul	3260-1047///75.0/ H1	3260-1047		300 Kg	600 Kg				
GewZul	840-1270///75.0/ S1	840-1270	300 Kg	500 Kg	1000 Kg				
GewZul	1300-1270///75.0/ S1	1300-1270	300 Kg	500 Kg	900 Kg				
GewZul	1640-1270///75.0/ S1	1640-1270	250 Kg	500 Kg	800 Kg				
GewZul	1860-1270///75.0/ S1	1860-1270	150 Kg	450 Kg	800 Kg				
GewZul	2060-1270///75.0/ S1	2060-1270	250 Kg	400 Kg	750 Kg				
GewZul	2300-1270///75.0/ S1	2300-1270	250 Kg	400 Kg	700 Kg				
GewZul	2460-1270///75.0/ S1	2460-1270	250 Kg	400 Kg	700 Kg				
GewZul	2860-1270///75.0/ S1	2860-1270 L		200 Kg					
GewZul	3060-1270///75.0/ S1	3060-1270 L		200 Kg					
GewZul	3260-1270///75.0/ S1	3260-1270 L		200 Kg					
GewZul	2860-1270///75.0/ H1	2860-1270		300 Kg	700 Kg				
GewZul	3060-1270///75.0/ H1	3060-1270		250 Kg	650 Kg				
GewZul	3260-1270///75.0/ H1	3260-1270		250 Kg	600 Kg				
GewZul	3660-635///37.5/ UB1	3660-635				500 Kg	700 Kg		
GewZul	4060-635///37.5/ UB1	4060-635				500 Kg	700 Kg		
GewZul	4460-635///37.5/ UB1	4460-635				400 Kg	600 Kg		
GewZul	3660-825///37.5/ UB1	3660-825				500 Kg	700 Kg		
GewZul	4060-825///37.5/ UB1	4060-825				500 Kg	700 Kg		
GewZul	4460-825///37.5/ UB1	4460-825				400 Kg	600 Kg		

Annex - Frequency converter setting values Mitsubishi FR-A740 / 741 / 840 (A-Frequen1_V4301.FRA)

Lean-Lift

Setting values for Hänel Lean-Lift
Frequency converter U1
MP12N (only from program version CPU 1:
V4.3)

			ES12	ES22	ES32	ES42	ES52
	Frequency Converter U1		FR-A 740 / FR-A840 / FR-A741 ES				
		-0085	-00126	-00170	-00170	-00250	
		2.2 KW	3.7 KW	5.5 KW	5.5 KW	7.5 KW	
			Economy-Speed				
	Parameter	Setting Range MP12N V4.3	/150	/250	/500	/700	/1000
1	2	1	PMS24	PMS25	PMS26	PMS27	PMS28
			9	10	11	12	13
1	Maximum frequency	5 to 120 Hz	120Hz	120Hz	120Hz	120Hz	120Hz
2	Minimum frequency		3Hz	3Hz	3Hz	3Hz	3Hz
3	Base frequency		60Hz	60Hz	60Hz	60Hz	60Hz
7	Acceleration time		1.1sec	1.1sec	1.1sec	1.1sec	1.1sec
8	Deceleration time		0.5sec	0.5sec	0.5sec	0.5sec	0.5sec
9	Electronic thermal O/L relay	8.00 to 17.00 A	7.87A	7.87A	10.97A	10.97A	14.93A
11	DC injection brake operation time		0sec	0sec	0sec	0sec	0sec
13	Starting frequency		0.5Hz	0.5Hz	0.5Hz	0.5Hz	0.5Hz
14	Load pattern selection		40	40	40	40	40
18	High speed maximum frequency	120 – 150 Hz	120Hz	120Hz	120Hz	120Hz	120Hz
19	Base frequency voltage		400V	400V	400V	400V	400V
20	Acceleration/deceleration reference frequency		200Hz	200Hz	200Hz	200Hz	200Hz
21	Acceleration/deceleration time increments		1	1	1	1	1
22	Stall prevention operation level (torque limit level)	ES: 70.0 to 135.0 % HS: 70.0 to 150.0 %	125%	110%	115%	125%	105%
22	0840a 2 -635 Strombegrenzung P22-1	840-635	99.5%	84.8%	96.4%	108.7%	96.8%
22	1300a 2 -635 Strombegrenzung P22-2	1300-635	102%	87.3%	98.7%	111%	98.4%
22	1640a 2 -635 Strombegrenzung P22-3	1640-635	104.5%	89.6%	100.7%	114.4%	92.9%
22	1860a 2 -635 Strombegrenzung P22-4	1860-635	105.9%	83.4%	101.9%	109.8%	94.1%
22	2060a 2 -635 Strombegrenzung P22-5	2060-635	107.5%	84.7%	104%	112.5%	92.3%
22	2300a 2 -635 Strombegrenzung P22-6	2300-635	110.5%	87.1%	101.6%	110.3%	89.8%
22	2460a 2 -635 Strombegrenzung P22-7	2460-635	112.2%	88.6%	102.8%	111.6%	92%
22	2860a 2 L-635 Strombegrenzung P22-8	2860-635 L		81.9%	107.1%		
22	3060a 2 L-635 Strombegrenzung P22-9	3060-635 L		83.2%	101.2%		
22	3260a 2 L-635 Strombegrenzung P22-10	3260-635 L		82.9%	91.4%		
22	2860a 2 -635 Strombegrenzung P22-11	2860-635	114.6%	94.7%	115.8%	114%	89%
22	3060a 2 -635 Strombegrenzung P22-12	3060-635	114.7%	96.5%	117.5%	115.3%	87.9%
22	3260a 2 -635 Strombegrenzung P22-13	3260-635	114.6%	98.2%	111.4%	116.8%	86.8%
22	0840a 1 -635 / 825 Strombegrenzung P22-14	840-635 / 825	101.2%	86.5%	98.4%	110.4%	98.3%
22	1300a 1 -635 / 825 Strombegrenzung P22-15	1300-635 / 825	104.7%	89.8%	100.7%	113.2%	99.9%
22	1640a 1 -635 / 825 Strombegrenzung P22-16	1640-635 / 825	107.3%	92.2%	102.9%	117.2%	94.5%
22	1860a 1 -635 / 825 Strombegrenzung P22-17	1860-635 / 825	109.2%	86.1%	104.2%	112.6%	95.9%
22	2060a 1 -635 / 825 Strombegrenzung P22-18	2060-635 / 825	112%	88.4%	105.9%	115.8%	94.2%
22	2300a 1 -635 / 825 Strombegrenzung P22-19	2300-635 / 825	113.7%	89.8%	104%	113.6%	91.8%
22	2460a 1 -635 / 825 Strombegrenzung P22-20	2460-635 / 825	114.2%	91%	106.5%	115.9%	95%
22	2860a 1 L-635 / 825 Strombegrenzung P22-21	2860-635 / 825 L		86%	111.8%	115.2%	
22	3060a 1 L-635 / 825 Strombegrenzung P22-22	3060-635 / 825 L		85.9%	102.3%	110.9%	
22	3260a 1 L-635 / 825 Strombegrenzung P22-23	3260-635 / 825 L		87.5%	93.2%	106.7%	
22	2860a 1 -635 / 825 Strombegrenzung P22-24	2860-635 / 825	114.7%	100.1%	121.2%	118.1%	91.7%
22	3060a 1 -635 / 825 Strombegrenzung P22-25	3060-635 / 825	113.9%	100.3%	119.1%	119.8%	90.7%
22	3260a 1 -635 / 825 Strombegrenzung P22-26	3260-635 / 825	114.3%	100.7%	117.1%	121.6%	89.7%
22	0840b 3 -1047 / 1270 Strombegrenzung P22-40	840-1047 / 1270	107.5%	92.4%	103%	114.7%	101.4%
22	1300b 3 -1047 / 1270 Strombegrenzung P22-41	1300-1047 / 1270	112.7%	97.3%	106.4%	121%	96.5%
22	1640b 3 -1047 / 1270 Strombegrenzung P22-42	1640-1047 / 1270	114%	92.5%	109.4%	118.2%	91.7%
22	1860b 3 -1047 / 1270 Strombegrenzung P22-43	1860-1047 / 1270	113.8%	79.5%	104.2%	120.4%	93.3%
22	2060b 3 -1047 / 1270 Strombegrenzung P22-44	2060-1047 / 1270	113.7%	97.5%	105.5%	118%	92%
22	2300b 3 -1047 / 1270 Strombegrenzung P22-45	2300-1047 / 1270	114.3%	100.8%	108.7%	121.3%	90.3%
22	2460b 3 -1047 / 1270 Strombegrenzung P22-46	2460-1047 / 1270	113.6%	103%	110.8%	123.3%	91.5%
22	2860b 3 L-1047 / 1270 Strombegrenzung P22-47	2860-1047 / 1270 L	0%	85.7%	93.3%		
22	3060b 3 L-1047 / 1270 Strombegrenzung P22-48	3060-1047 / 1270 L			97.1%		
22	3260b 3 L-1047 / 1270 Strombegrenzung P22-49	3260-1047 / 1270 L			97.4%		
22	2860b 3 -1047 / 1270 Strombegrenzung P22-50	2860-1047 / 1270			109.7%	128.9%	107.1%
22	3060b 3 -1047 / 1270 Strombegrenzung P22-51	3060-1047 / 1270			104.3%	124.4%	104.5%
22	3260b 3 -1047 / 1270 Strombegrenzung P22-52	3260-1047 / 1270			106.6%	127.4%	102%
22	3660a 2 -635 Strombegrenzung P22-53	3660-635					
22	4060a 2 -635 Strombegrenzung P22-54	4060-635					
22	4460a 2 -635 Strombegrenzung P22-55	4460-635					
22	3660a 1 -635 / 825 Strombegrenzung P22-56	3660-635 / 825					
22	4060a 1 -635 / 825 Strombegrenzung P22-57	4060-635 / 825					
22	4460a 1 -635 / 825 Strombegrenzung P22-58	4460-635 / 825					
22	Stall prevention Special Version Kom.Nr.:						
23	Stall prevention operation level compensation factor at doub		9999	9999	9999	100%	9999
29	Acceleration/deceleration pattern selection		00	00	00	00	00
30	Regenerative function selection (only FR-A 740/840)		1	1	1	1	1

Annex - Frequency converter setting values Mitsubishi FR-A740 / 741 / 840 (A-Frequen1_V4301.FRA)

Lean-Lift

Setting values for Hänel Lean-Lift
Frequency converter U1
MP12N (only from program version CPU 1:
V4.3)

			ES12	ES22	ES32	ES42	ES52
			FR-A 740 / FR-A840 / FR-A741 ES				
		Frequency Converter U1	-0085	-00126	-00170	-00170	-00250
			2.2 KW	3.7 KW	5.5 KW	5.5 KW	7.5 KW
			Economy-Speed				
Parameter		Setting Range MP12N V4.3	/150	/250	/500	/700	/1000
1	2	1	PMS24	PMS25	PMS26	PMS27	PMS28
			9	10	11	12	13
42	Output frequency detection		0.5Hz	0.5Hz	0.5Hz	0.5Hz	0.5Hz
43	Output frequency detection for reverse rotation		99.99Hz	99.99Hz	99.99Hz	99.99Hz	99.99Hz
44	Second acceleration/deceleration time		0.35sec.	0.35sec.	0.35sec.	0.35sec.	0.35sec.
45	Second deceleration time		0.2sec.	0.2sec.	0.2sec.	0.2sec.	0.2sec.
46	Second torque boost	4.0 to 15.0 %	4.5%	6.4%	6.7%	7.8%	7.8%
47	Second V/F (base frequency)		87Hz	87Hz	87Hz	87Hz	87Hz
48	Second stall prevention operation current	ES: 15.0 to 45.0 % HS: 15.0 to 45.0 %	41.2%	33.3%	50%	51.7%	41.2%
48	0840a 2 -635 2. Stromgrenze P48-1	840-635	20.8%	26%	30.3%	30.1%	38.4%
48	1300a 2 -635 2. Stromgrenze P48-2	1300-635	21.2%	26.7%	30.7%	30.5%	39%
48	1640a 2 -635 2. Stromgrenze P48-3	1640-635	21.4%	27.1%	31%	31.3%	34.5%
48	1860a 2 -635 2. Stromgrenze P48-4	1860-635	21.6%	23.2%	31.2%	29.5%	35.1%
48	2060a 2 -635 2. Stromgrenze P48-5	2060-635	21.8%	23.4%	31.5%	29.9%	33.3%
48	2300a 2 -635 2. Stromgrenze P48-6	2300-635	22.1%	23.8%	30.1%	28.9%	31.4%
48	2460a 2 -635 2. Stromgrenze P48-7	2460-635	22.3%	24%	30.3%	29.2%	32.6%
48	2860a 2 L -635 2. Stromgrenze P48-8	2860-635 L		20.1%	28%		
48	3060a 2 L -635 2. Stromgrenze P48-9	3060-635 L		20.3%	26.1%		
48	3260a 2 L -635 2. Stromgrenze P48-10	3260-635 L		19.9%	23.1%		
48	2860a 2 -635 2. Stromgrenze P48-11	2860-635	22.4%	26.4%	30.9%	26.9%	25.7%
48	3060a 2 -635 2. Stromgrenze P48-12	3060-635	22.1%	26.8%	31.2%	27.1%	25%
48	3260a 2 -635 2. Stromgrenze P48-13	3260-635	21.8%	27.2%	28.8%	27.3%	24.3%
48	0840a 1 -635 / 825 2. Stromgrenze P48-14	840-635 / 825	21%	26.3%	30.5%	30.3%	38.7%
48	1300a 1 -635 / 825 2. Stromgrenze P48-15	1300-635 / 825	21.4%	27.1%	30.9%	30.8%	39.4%
48	1640a 1 -635 / 825 2. Stromgrenze P48-16	1640-635 / 825	21.7%	27.6%	31.3%	31.7%	35%
48	1860a 1 -635 / 825 2. Stromgrenze P48-17	1860-635 / 825	21.9%	23.6%	31.6%	29.9%	35.6%
48	2060a 1 -635 / 825 2. Stromgrenze P48-18	2060-635 / 825	22.3%	24.1%	31.8%	30.6%	34.1%
48	2300a 1 -635 / 825 2. Stromgrenze P48-19	2300-635 / 825	22.6%	24.4%	30.6%	29.7%	32.2%
48	2460a 1 -635 / 825 2. Stromgrenze P48-20	2460-635 / 825	22.4%	24.6%	31%	30%	33.5%
48	2860a 1 L -635 / 825 2. Stromgrenze P48-21	2860-635 / 825 L		20.7%	28.5%	26.6%	
48	3060a 1 L -635 / 825 2. Stromgrenze P48-22	3060-635 / 825 L		20.2%	25.5%	25.2%	
48	3260a 1 L -635 / 825 2. Stromgrenze P48-23	3260-635 / 825 L		20.5%	22.8%	23.9%	
48	2860a 1 -635 / 825 2. Stromgrenze P48-24	2860-635 / 825	21.3%	27.4%	31.7%	27.4%	26.1%
48	3060a 1 -635 / 825 2. Stromgrenze P48-25	3060-635 / 825	20.8%	26.9%	30.5%	27.6%	25.5%
48	3260a 1 -635 / 825 2. Stromgrenze P48-26	3260-635 / 825	20.5%	26.5%	29.5%	27.8%	24.8%
48	0840b 3 -1047 / 1270 2. Stromgrenze P48-40	840-1047 / 1270	21.4%	27.1%	30.9%	30.6%	39.5%
48	1300b 3 -1047 / 1270 2. Stromgrenze P48-41	1300-1047 / 1270	22.3%	28.5%	31.7%	32.1%	35.3%
48	1640b 3 -1047 / 1270 2. Stromgrenze P48-42	1640-1047 / 1270	21.8%	24.6%	32.1%	30.6%	31.5%
48	1860b 3 -1047 / 1270 2. Stromgrenze P48-43	1860-1047 / 1270	21.4%	18.3%	29.5%	31%	32.2%
48	2060b 3 -1047 / 1270 2. Stromgrenze P48-44	2060-1047 / 1270	20.7%	25.6%	29.4%	29.7%	30.9%
48	2300b 3 -1047 / 1270 2. Stromgrenze P48-45	2300-1047 / 1270	20.3%	26%	30%	30.2%	29.3%
48	2460b 3 -1047 / 1270 2. Stromgrenze P48-46	2460-1047 / 1270	20.3%	26.4%	30.4%	30.5%	29.7%
48	2860b 3 L -1047 / 1270 2. Stromgrenze P48-47	2860-1047 / 1270 L			21.2%		
48	3060b 3 L -1047 / 1270 2. Stromgrenze P48-48	3060-1047 / 1270 L			21.5%		
48	3260b 3 L -1047 / 1270 2. Stromgrenze P48-49	3260-1047 / 1270 L			21.7%		
48	2860b 3 -1047 / 1270 2. Stromgrenze P48-50	2860-1047 / 1270			25.6%	28.3%	31.2%
48	3060b 3 -1047 / 1270 2. Stromgrenze P48-51	3060-1047 / 1270			23.9%	26.9%	29.6%
48	3260b 3 -1047 / 1270 2. Stromgrenze P48-52	3260-1047 / 1270			24.2%	27.3%	28.1%
48	3660a 2 -635 2. Stromgrenze P48-53	3660-635					
48	4060a 2 -635 2. Stromgrenze P48-54	4060-635					
48	4460a 2 -635 2. Stromgrenze P48-55	4460-635					
48	3660a 1 -635 / 825 2. Stromgrenze P48-56	3660-635 / 825					
48	4060a 1 -635 / 825 2. Stromgrenze P48-57	4060-635 / 825					
48	4460a 1 -635 / 825 2. Stromgrenze P48-58	4460-635 / 825					
48	Second stall prevention Special Version Kom.Nr.:						
49	Second stall prevention operation frequency		9999	9999	9999	9999	9999
51	Second electronic thermal O/L relay	1.0 to 4.00 A	1.6A	1.6A	1.78A	2.25A	2.25A
52	DU/PU main display data selection		11	11	11	11	11
54	FM terminal function selection	1 to 7	1	1	1	1	1
55	Frequency monitoring reference	100 to 150 Hz	120Hz	120Hz	120Hz	120Hz	120Hz
56	Current monitoring reference	6.00 to 34.00 A	9A	12A	17A	17A	25A
65	Retry selection		4	4	4	4	4
66	Stall prevention operation reduction starting frequency		87Hz	87Hz	87Hz	87Hz	87Hz
67	Number of retries at alarm occurrence		3	3	3	3	3

Annex - Frequency converter setting values Mitsubishi FR-A740 / 741 / 840 (A-Frequen1_V4301.FRA)

Lean-Lift

Setting values for Hänel Lean-Lift
Frequency converter U1
MP12N (only from program version CPU 1:
V4.3)

			ES12	ES22	ES32	ES42	ES52
			FR-A 740 / FR-A840 / FR-A741 ES				
Frequency Converter U1			-0085	-00126	-00170	-00170	-00250
			2.2 KW	3.7 KW	5.5 KW	5.5 KW	7.5 KW
			Economy-Speed				
			/150	/250	/500	/700	/1000
Parameter			PMS24	PMS25	PMS26	PMS27	PMS28
1	2	1	9	10	11	12	13
70	Special regenerative brake duty (only FR-A 740/840) Lift Height <= 7992/4 and Firmware <= 7992/4	10,0 to 90,0 %	10%	10%	13%	13%	13%
70	Special regenerative brake duty (only FR-A 740/840) Lift Height > 9m and Firmware 7992/5	10,0 to 90,0 %	50 %	50 %	50 %	50 %	50 %
71	Applied motor		3	3	3	3	3
72	PWM frequency selection		15	15	15	15	15
73	Analog input selection		0	0	0	0	0
74	Input filter time constant		1	1	1	1	1
80	Motor capacity		1,5KW	1,5KW	2,2KW	2,2KW	3KW
81	Number of motor poles		14	14	14	14	14
83	Motor rated voltage		320V	400V	400V	400V	400V
84	Rated motor frequency		87Hz	87Hz	87Hz	87Hz	87Hz
89	Speed control gain (magnetic flux vector)		35%	35%	35%	35%	35%
95	Online auto tuning selection		1	1	1	1	1
96	Auto tuning setting/status	0 or 1	1	1	1	1	1
110	Third acceleration/deceleration time	0 to 2 sec.	2sec.	2sec.	2sec.	2sec.	2sec.
111	Third deceleration time		0sec.	0sec.	0sec.	0sec.	0sec.
112	Third torque boost	2,0 to 14,0 %	14%	14%	14%	14%	14%
113	Third V/F (base frequency)		87Hz	87Hz	87Hz	87Hz	87Hz
114	Third stall prevention operation current	6,0 to 40,0 %	51,2%	34,2%	25,6%	25,6%	18,1%
115	Third stall prevention operation frequency		99Hz	99Hz	99Hz	99Hz	99Hz
145	PU display language selection	0 to 7	1	1	1	1	1
150	0840a 2 -635 Ausgangstromüberwachung P150-1	840-635	17,1%	14%	15,8%	17,3%	13,9%
150	1300a 2 -635 Ausgangstromüberwachung P150-2	1300-635	17,2%	14,2%	15,9%	17,3%	13,9%
150	1640a 2 -635 Ausgangstromüberwachung P150-3	1640-635	17,3%	14,3%	16%	17,6%	13,2%
150	1860a 2 -635 Ausgangstromüberwachung P150-4	1860-635	17,4%	13,3%	16%	17,1%	13,3%
150	2060a 2 -635 Ausgangstromüberwachung P150-5	2060-635	17,5%	13,3%	16,1%	17,2%	13%
150	2300a 2 -635 Ausgangstromüberwachung P150-6	2300-635	17,6%	13,5%	15,7%	16,9%	12,7%
150	2460a 2 -635 Ausgangstromüberwachung P150-7	2460-635	17,6%	13,5%	15,8%	17%	12,9%
150	2860a 2 L -635 Ausgangstromüberwachung P150-8	2860-635 L		12,4%	15%		
150	3060a 2 L -635 Ausgangstromüberwachung P150-9	3060-635 L		12,5%	14,2%		
150	3260a 2 L -635 Ausgangstromüberwachung P150-10	3260-635 L		12,4%	12,9%		
150	2860a 2 -635 Ausgangstromüberwachung P150-11	2860-635	17,7%	14,1%	15,9%	16,4%	11,7%
150	3060a 2 -635 Ausgangstromüberwachung P150-12	3060-635	17,6%	14,2%	16%	16,4%	11,6%
150	3260a 2 -635 Ausgangstromüberwachung P150-13	3260-635	17,5%	14,3%	15,2%	16,5%	11,5%
150	0840a 1 -635 / 825 Ausgangstromüberwachung P150-14	840-635 / 825	17,2%	14,1%	15,8%	17,3%	13,9%
150	1300a 1 -635 / 825 Ausgangstromüberwachung P150-15	1300-635 / 825	17,3%	14,3%	15,9%	17,4%	14%
150	1640a 1 -635 / 825 Ausgangstromüberwachung P150-16	1640-635 / 825	17,4%	14,4%	16,1%	17,7%	13,3%
150	1860a 1 -635 / 825 Ausgangstromüberwachung P150-17	1860-635 / 825	17,5%	13,4%	16,1%	17,2%	13,4%
150	2060a 1 -635 / 825 Ausgangstromüberwachung P150-18	2060-635 / 825	17,6%	13,5%	16,2%	17,4%	13,2%
150	2300a 1 -635 / 825 Ausgangstromüberwachung P150-19	2300-635 / 825	17,7%	13,6%	15,9%	17,1%	12,9%
150	2460a 1 -635 / 825 Ausgangstromüberwachung P150-20	2460-635 / 825	17,7%	13,7%	16%	17,2%	13,1%
150	2860a 1 L -635 / 825 Ausgangstromüberwachung P150-21	2860-635 / 825 L		12,6%	15,1%	16,3%	
150	3060a 1 L -635 / 825 Ausgangstromüberwachung P150-22	3060-635 / 825 L		12,5%	13,9%	15,9%	
150	3260a 1 L -635 / 825 Ausgangstromüberwachung P150-23	3260-635 / 825 L		12,5%	12,8%	15,5%	
150	2860a 1 -635 / 825 Ausgangstromüberwachung P150-24	2860-635 / 825	17,3%	14,4%	16,2%	16,5%	11,8%
150	3060a 1 -635 / 825 Ausgangstromüberwachung P150-25	3060-635 / 825	17,1%	14,3%	15,8%	16,6%	11,7%
150	3260a 1 -635 / 825 Ausgangstromüberwachung P150-26	3260-635 / 825	17%	14,1%	15,5%	16,6%	11,6%
150	0840b 3 -1047 / 1270 Ausgangstromüberwachung P150-40	840-1047 / 1270	17,3%	14,3%	16%	17,4%	14%
150	1300b 3 -1047 / 1270 Ausgangstromüberwachung P150-41	1300-1047 / 1270	17,6%	14,7%	16,2%	17,8%	13,4%
150	1640b 3 -1047 / 1270 Ausgangstromüberwachung P150-42	1640-1047 / 1270	17,5%	13,7%	16,3%	17,4%	12,8%
150	1860b 3 -1047 / 1270 Ausgangstromüberwachung P150-43	1860-1047 / 1270	17,3%	11,9%	15,5%	17,5%	12,9%
150	2060b 3 -1047 / 1270 Ausgangstromüberwachung P150-44	2060-1047 / 1270	17,1%	13,9%	15,5%	17,1%	12,6%
150	2300b 3 -1047 / 1270 Ausgangstromüberwachung P150-45	2300-1047 / 1270	16,9%	14%	15,7%	17,3%	12,4%
150	2460b 3 -1047 / 1270 Ausgangstromüberwachung P150-46	2460-1047 / 1270	16,7%	14,1%	15,8%	17,4%	12,4%
150	2860b 3 L -1047 / 1270 Ausgangstromüberwachung P150-47	2860-1047 / 1270 L	0%	11,7%	12,2%	16,8%	12,7%
150	3060b 3 L -1047 / 1270 Ausgangstromüberwachung P150-48	3060-1047 / 1270 L			12,3%		
150	3260b 3 L -1047 / 1270 Ausgangstromüberwachung P150-49	3260-1047 / 1270 L			12,4%		
150	2860b 3 -1047 / 1270 Ausgangstromüberwachung P150-50	2860-1047 / 1270			14%	16,8%	12,7%
150	3060b 3 -1047 / 1270 Ausgangstromüberwachung P150-51	3060-1047 / 1270			13,3%	16,4%	12,4%
150	3260b 3 -1047 / 1270 Ausgangstromüberwachung P150-52	3260-1047 / 1270			13,4%	16,5%	12,2%
150	3660a 2 -635 Ausgangstromüberwachung P150-53	3660-635					
150	3660a 2 -635 Ausgangstromüberwachung P150-53	3660-635					
150	4060a 2 -635 Ausgangstromüberwachung P150-54	4060-635					
150	4460a 2 -635 Ausgangstromüberwachung P150-55	4460-635					
150	3660a 1 -635 / 825 Ausgangstromüberwachung P150-56	3660-635 / 825					
150	4060a 1 -635 / 825 Ausgangstromüberwachung P150-57	4060-635 / 825					
150	4460a 1 -635 / 825 Ausgangstromüberwachung P150-58	4460-635 / 825					

Annex - Frequency converter setting values Mitsubishi FR-A740 / 741 / 840 (A-Frequen1_V4301.FRA)

Lean-Lift

Setting values for Hänel Lean-Lift
Frequency converter U1
MP12N (only from program version CPU 1:
V4.3)

			ES12	ES22	ES32	ES42	ES52
			FR-A 740 / FR-A840 / FR-A741 ES				
			-0085	-00126	-00170	-00170	-00250
	Frequency Converter U1		2.2 KW	3.7 KW	5.5 KW	5.5 KW	7.5 KW
			Economy-Speed				
	Parameter	Setting Range MP12N V4.3	/150	/250	/500	/700	/1000
			PMS24	PMS25	PMS26	PMS27	PMS28
1	2	1	9	10	11	12	13
151	Output current detection signal delay time		0,1	0,1	0,1	0,1	0,1
155	RT signal function validity condition selection		1	1	1	1	1
156	Stall prevention operation selection		9	9	9	9	9
157	OL signal output timer		0sec.	0sec.	0sec.	0sec.	0sec.
158	Output AM Torque		7	7	7	7	7
180	RL terminal function selection		3	3	3	3	3
181	RM terminal function selection		18	18	18	18	18
182	RH terminal function selection		9	9	9	9	9
183	RT terminal function selection		18	18	18	18	18
184	AU terminal function selection		4	4	4	4	4
185	JOG terminal function selection		17	17	17	17	17
190	RUN terminal function selection		20	20	20	20	20
192	IPF terminal function selection		164	164	164	164	164
193	OL terminal function selection		12	12	12	12	12
194	FU terminal function selection		4	4	4	4	4
195	ABC1 terminal function selection		199	199	199	199	199
196	ABC2 terminal function selection	145 and 9999	9999	9999	9999	9999	9999
244	Cooling fan operation selection		1	1	1	1	1
251	Output phase failure protection selection		1	1	1	1	1
260	PWM frequency automatic switchover		0,1sec.	0,1sec.	0,1sec.	0,1sec.	0,1sec.
265	Power-failure deceleration time 2		0sec.	0sec.	0sec.	0sec.	0sec.
278	Brake opening frequency		1,3Hz	1,3Hz	1,3Hz	1,3Hz	1,3Hz
279	Brake opening current		20%	20%	20%	20%	20%
280	Brake opening current detection time		0,1sec.	0,1sec.	0,1sec.	0,1sec.	0,1sec.
281	Brake operation time at start		0,3sec.	0,3sec.	0,3sec.	0,3sec.	0,3sec.
282	Brake operation frequency		2Hz	2Hz	2Hz	2Hz	2Hz
283	Brake operation time at stop		0,1sec.	0,1sec.	0,1sec.	0,1sec.	0,1sec.
284	Deceleration detection function selection		0	0	0	0	0
292	Automatic acceleration/deceleration		8	8	8	8	8
331	RS-485 FU-Adress		0	0	0	0	0
332	RS-485 Baud		96	96	96	96	96
333	RS-485 stop-bit		0	0	0	0	0
335	RS-485 communication retry count		9999	9999	9999	9999	9999
336	RS-485 communication check time interval		9999	9999	9999	9999	9999
341	RS-485 communication C/R/LF selection		2	2	2	2	2
342	Communication EEPROM write selection		1	1	1	1	1
450	Second applied motor	0 to 20 and 9999	3	9999	9999	9999	9999
451	Second motor control method selection	20 and 9999	20	9999	9999	9999	9999
453	Second Motor capacity	0,0 to 2,0 KW	0,4KW	0,4KW	0,4KW	0,55KW	0,55KW
454	Number of second motor poles		4	4	4	4	4
456	Rated second motor voltage		360V	400V	400V	400V	400V
457	Rated second motor frequency		87Hz	87Hz	87Hz	87Hz	87Hz
463	Second motor auto tuning setting/status	0 or 1	103	3	103	103	103
574	Second Motor online tuning	0 or 1	1	1	1	1	1
506	Parameter 1 for User (only FR-A 740)		4301	4301	4301	4301	4301
507	Parameter 2 for user (only FR-A 740)		24	25	26	27	28
632	Output current stability waiting time (only FR-A741/840)		12	12	12	12	12
633	Output current filter (only FR-A741/840)		5	5	5	5	5
634	Output phase failure deection time (only FR-A741/840)		3	3	3	3	3
684	Tuning data increment switchover		1	1	1	1	1
699	Adjusting the response of Input terminal (only FR-A840)		5	5	5	5	5
730	Output current stability waiting time (only FR-A 740)		12	12	12	12	12
731	Output current filter (only FR-A 740)		5	5	5	5	5
732	Output phase failure deection time (only FR-A 740)		3	3	3	3	3
800	Control method selection		20	20	20	20	20
866	Torque Monitoring reference		150%	150%	150%	150%	150%
888	Parameter 1 for User (only FR-A741/840)		4301	4301	4301	4301	4301
889	Parameter 2 for user (only FR-A741/840)		24	25	26	27	28
872	Input Phase fault		1	1	1	1	1
902	Terminal 2 frequency setting bias frequency		0Hz	0Hz	0Hz	0Hz	0Hz
903	Terminal 2 frequency setting gain frequency	95 to 105	0,0%	0,0%	0,0%	0,0%	0,0%
			150Hz	150Hz	150Hz	150Hz	150Hz
			100,0%	100,0%	100,0%	100,0%	100,0%

Annex - Frequency converter setting values Mitsubishi FR-A740 / 741 / 840 (A-Frequen1_V4301.FRA)

Lean-Lift

Setting values for Hänel Lean-Lift
Frequency converter U1
MP12N (only from program version CPU 1:
V4.3)

			ES12	ES22	ES32	ES42	ES52
			FR-A 740 / FR-A840 / FR-A741 ES				
Frequency Converter U1			-0085	-00126	-00170	-00170	-00250
			2.2 KW	3.7 KW	5.5 KW	5.5 KW	7.5 KW
			Economy-Speed				
Parameter		Setting Range MP12N V4.3	/150	/250	/500	/700	/1000
1	2		PMS24	PMS25	PMS26	PMS27	PMS28
	Container max. payload	1	9	10	11	12	13
GewZul	840-635///75.0/ S1	840-635	150 Kg	300 Kg	500 Kg	700 Kg	1000 Kg
GewZul	1300-635///75.0/ S1	1300-635	150 Kg	300 Kg	500 Kg	700 Kg	1000 Kg
GewZul	1640-635///75.0/ S1	1640-635	150 Kg	300 Kg	500 Kg	700 Kg	900 Kg
GewZul	1860-635///75.0/ S1	1860-635	150 Kg	250 Kg	500 Kg	650 Kg	900 Kg
GewZul	2060-635///75.0/ S1	2060-635	150 Kg	250 Kg	500 Kg	650 Kg	850 Kg
GewZul	2300-635///75.0/ S1	2300-635	150 Kg	250 Kg	470 Kg	600 Kg	800 Kg
GewZul	2460-635///75.0/ S1	2460-635	150 Kg	250 Kg	470 Kg	600 Kg	800 Kg
GewZul	2860-635///75.0/ S1	2860-635 L		190 Kg	400 Kg		
GewZul	3060-635///75.0/ S1	3060-635 L		190 Kg	350 Kg		
GewZul	3260-635///75.0/ S1	3260-635 L		180 Kg	270 Kg		
GewZul	2860-635///75.0/ H1	2860-635	125 Kg	250 Kg	450 Kg	550 Kg	650 Kg
GewZul	3060-635///75.0/ H1	3060-635	115 Kg	250 Kg	450 Kg	550 Kg	625 Kg
GewZul	3260-635///75.0/ H1	3260-635	105 Kg	250 Kg	400 Kg	550 Kg	600 Kg
GewZul	840-825///75.0/ S1	840-825	150 Kg	300 Kg	500 Kg	700 Kg	1000 Kg
GewZul	1300-825///75.0/ S1	1300-825	150 Kg	300 Kg	500 Kg	700 Kg	1000 Kg
GewZul	1640-825///75.0/ S1	1640-825	150 Kg	300 Kg	500 Kg	700 Kg	900 Kg
GewZul	1860-825///75.0/ S1	1860-825	150 Kg	250 Kg	500 Kg	650 Kg	900 Kg
GewZul	2060-825///75.0/ S1	2060-825	150 Kg	250 Kg	500 Kg	650 Kg	850 Kg
GewZul	2300-825///75.0/ S1	2300-825	150 Kg	250 Kg	470 Kg	600 Kg	800 Kg
GewZul	2460-825///75.0/ S1	2460-825	145 Kg	250 Kg	470 Kg	600 Kg	800 Kg
GewZul	2860-825///75.0/ S1	2860-825 L		190 Kg	400 Kg	500 Kg	
GewZul	3060-825///75.0/ S1	3060-825 L		180 Kg	325 Kg	450 Kg	
GewZul	3260-825///75.0/ S1	3260-825 L		180 Kg	250 Kg	400 Kg	
GewZul	2860-825///75.0/ H1	2860-825	95 Kg	250 Kg	450 Kg	550 Kg	650 Kg
GewZul	3060-825///75.0/ H1	3060-825	80 Kg	240 Kg	425 Kg	550 Kg	625 Kg
GewZul	3260-825///75.0/ H1	3260-825	70 Kg	230 Kg	400 Kg	550 Kg	600 Kg
GewZul	840-1047///75.0/ S1	840-1047	150 Kg	300 Kg	500 Kg	700 Kg	1000 Kg
GewZul	1300-1047///75.0/ S1	1300-1047	150 Kg	300 Kg	500 Kg	700 Kg	950 Kg
GewZul	1640-1047///75.0/ S1	1640-1047	150 Kg	250 Kg	500 Kg	650 Kg	850 Kg
GewZul	1860-1047///75.0/ S1	1860-1047	145 Kg	250 Kg	450 Kg	650 Kg	850 Kg
GewZul	2060-1047///75.0/ S1	2060-1047	135 Kg	250 Kg	450 Kg	600 Kg	800 Kg
GewZul	2300-1047///75.0/ S1	2300-1047	120 Kg	250 Kg	400 Kg	600 Kg	750 Kg
GewZul	2460-1047///75.0/ S1	2460-1047	110 Kg	250 Kg	400 Kg	600 Kg	750 Kg
GewZul	2860-1047///75.0/ S1	2860-1047 L		250 Kg	250 Kg		
GewZul	3060-1047///75.0/ S1	3060-1047 L			220 Kg		
GewZul	3260-1047///75.0/ S1	3260-1047 L			220 Kg		
GewZul	2860-1047///75.0/ H1	2860-1047			350 Kg	500 Kg	700 Kg
GewZul	3060-1047///75.0/ H1	3060-1047			300 Kg	450 Kg	650 Kg
GewZul	3260-1047///75.0/ H1	3260-1047			300 Kg	450 Kg	600 Kg
GewZul	840-1270///75.0/ S1	840-1270	150 Kg	300 Kg	500 Kg	700 Kg	1000 Kg
GewZul	1300-1270///75.0/ S1	1300-1270	150 Kg	300 Kg	500 Kg	700 Kg	900 Kg
GewZul	1640-1270///75.0/ S1	1640-1270	135 Kg	250 Kg	500 Kg	650 Kg	800 Kg
GewZul	1860-1270///75.0/ S1	1860-1270	125 Kg	150 Kg	450 Kg	650 Kg	800 Kg
GewZul	2060-1270///75.0/ S1	2060-1270	105 Kg	250 Kg	400 Kg	600 Kg	750 Kg
GewZul	2300-1270///75.0/ S1	2300-1270	90 Kg	250 Kg	400 Kg	600 Kg	700 Kg
GewZul	2460-1270///75.0/ S1	2460-1270	75 Kg	250 Kg	400 Kg	600 Kg	700 Kg
GewZul	2860-1270///75.0/ S1	2860-1270 L		250 Kg	200 Kg		
GewZul	3060-1270///75.0/ S1	3060-1270 L			200 Kg		
GewZul	3260-1270///75.0/ S1	3260-1270 L			200 Kg		
GewZul	2860-1270///75.0/ H1	2860-1270			300 Kg	500 Kg	700 Kg
GewZul	3060-1270///75.0/ H1	3060-1270			250 Kg	450 Kg	650 Kg
GewZul	3260-1270///75.0/ H1	3260-1270			250 Kg	450 Kg	600 Kg
GewZul	3660-635///37.5/ UB1	3660-635					
GewZul	4060-635///37.5/ UB1	4060-635					
GewZul	4460-635///37.5/ UB1	4460-635					
GewZul	3660-825///37.5/ UB1	3660-825					
GewZul	4060-825///37.5/ UB1	4060-825					
GewZul	4460-825///37.5/ UB1	4460-825					