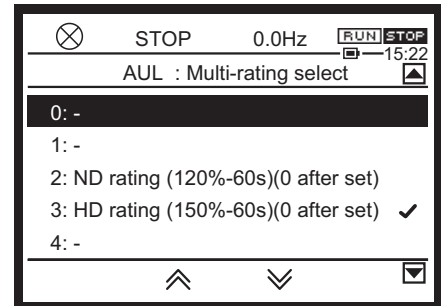


5. 3. 2 Selecting an overload protection characteristic

<AUL: Multi-rating select>

Basic parameter



■ **Function**

Select an inverter overload protection characteristic suited for the torque characteristic of the machine.

■ **Parameter setting**

Title	Parameter name	Adjustment range	Default setting
AUL	Multi-rating select	0,1: - 2: ND rating (120%-60s) (0 after execution) 3: HD rating (150%-60s) (0 after execution) 4 - 8: -	3

Note) The setting value becomes 0 after execution, but a check mark is added to the previous setting value.

■ **Selecting a setting value**

2: ND rating (120%-60s) (0 after execution)

Select this value when applying the machine with variable torque characteristic.

Example) Fan, pump, blower, etc.

3: HD rating (150%-60s) (0 after execution)

Select this value when applying the machine with constant torque characteristics.

Example) Conveyor, load transporting machinery, crane, concrete mixer, compressor, making machine, machine tool, etc.

Memo

- The default setting of some parameters are different between HD rating and ND rating. Refer to [11. 6].

11.6 Parameter setting range and default setting depending on capacity

■ HD rating

Voltage class	Applicable motor (kW)	Inverter type-form	vb,F172, F176,F180 (%)	ACC,dEC, F500, F501, F510, F511, F514, F515 (s)	tHrA,F182,F183, F184		F249 (kHz)	F298 (V)	
					Adjustment range	(A)			
3-phase 240 V	0.4	VFAS3-	2004P	4.80	10.0	0.33-3.30	3.30	4.0	120.0
	0.75		2007P	4.80	10.0	0.46-4.60	4.60	4.0	120.0
	1.5		2015P	4.80	10.0	0.80-8.00	8.00	4.0	120.0
	2.2		2022P	3.10	10.0	1.12-11.20	11.20	4.0	120.0
	4.0		2037P	3.10	10.0	1.87-18.70	18.70	4.0	120.0
	5.5		2055P	2.50	10.0	2.54-25.40	25.40	4.0	120.0
	7.5		2075P	2.30	10.0	3.27-32.70	32.70	4.0	120.0
	11		2110P	1.80	10.0	4.68-46.80	46.80	4.0	120.0
	15		2150P	1.60	10.0	6.34-63.40	63.40	4.0	120.0
	18.5		2185P	1.50	30.0	7.84-78.40	78.40	4.0	120.0
	22		2220P	1.70	30.0	9.3-92.6	92.6	4.0	120.0
	30		2300P	1.40	30.0	12.3-123.0	123.0	4.0	120.0
	37		2370P	0.90	30.0	14.9-149.0	149.0	4.0	120.0
	45		2450P	0.80	30.0	17.6-176.0	176.0	2.5	120.0
55	2550P	0.80	30.0	21.1-211.0	211.0	2.5	120.0		
3-phase 480 V	0.4	VFAS3-	4004PC	4.80	10.0	0.15-1.50	1.50	4.0	240.0
	0.75		4007PC	4.80	10.0	0.22-2.20	2.20	4.0	240.0
	1.5		4015PC	4.80	10.0	0.40-4.00	4.00	4.0	240.0
	2.2		4022PC	3.10	10.0	0.56-5.60	5.60	4.0	240.0
	4.0		4037PC	3.10	10.0	0.93-9.30	9.30	4.0	240.0
	5.5		4055PC	2.50	10.0	1.27-12.70	12.70	4.0	240.0
	7.5		4075PC	2.30	10.0	1.65-16.50	16.50	4.0	240.0
	11		4110PC	1.80	10.0	2.35-23.50	23.50	4.0	240.0
	15		4150PC	1.60	10.0	3.17-31.70	31.70	4.0	240.0
	18.5		4185PC	1.50	30.0	3.92-39.20	39.20	4.0	240.0
	22		4220PC	1.70	30.0	4.63-46.30	46.30	4.0	264.0
	30		4300PC	1.40	30.0	6.15-61.50	61.50	4.0	264.0
	37		4370PC	0.90	30.0	7.45-74.50	74.50	4.0	264.0
	45		4450PC	0.80	30.0	8.8-88.0	88.0	4.0	264.0
	55		4550PC	0.80	30.0	10.6-106.0	106.0	4.0	264.0
	75		4750PC	1.40	60.0	14.5-145.0	145.0	4.0	264.0
	90		4900PC	1.30	60.0	17.3-173.0	173.0	2.5	240.0
	110		4110KPC	1.00	60.0	21.1-211.0	211.0	2.5	240.0
	132		4132KPC	0.80	60.0	25.0-250.0	250.0	2.5	240.0
	160		4160KPC	0.80	60.0	31.4-314.0	314.0	2.5	240.0
220	4200KPC	0.80	60.0	38.7-387.0	387.0	2.5	240.0		
250	4220KPC	0.80	60.0	42.7-427.0	427.0	2.5	240.0		
280	4280KPC	0.80	60.0	55.0-550.0	550.0	2.5	240.0		

Voltage class	Applicable motor (kW)	Inverter type-form	F300		F308 (Ohm)	F309 (kW)	F316	F356 (s)	F402 (%)	F405		
			Adjustment range	(kHz)						<Set> = "JP" (kW)	other (kW)	
3-phase 240 V	0.4	VFAS3-	2004P	1.0-16.0	4.0	200.0	0.12	1	0.57	4.30	0.40	0.40
	0.75		2007P	1.0-16.0	4.0	200.0	0.12	1	0.57	4.30	0.75	0.75
	1.5		2015P	1.0-16.0	4.0	75.0	0.12	1	0.57	4.40	1.50	1.50
	2.2		2022P	1.0-16.0	4.0	75.0	0.12	1	0.57	2.90	2.20	2.20
	4.0		2037P	1.0-16.0	4.0	40.0	0.12	1	0.67	2.80	3.70	4.00
	5.5		2055P	1.0-16.0	4.0	20.0	0.24	1	0.87	2.30	5.50	5.50
	7.5		2075P	1.0-16.0	4.0	15.0	0.44	1	0.87	2.00	7.50	7.50
	11		2110P	1.0-16.0	4.0	10.0	0.66	1	1.07	1.60	11.00	11.00
	15		2150P	1.0-16.0	4.0	7.5	0.88	1	1.07	1.50	15.00	15.00
	18.5		2185P	1.0-16.0	4.0	7.5	0.88	1	1.37	1.40	18.50	18.50
	22		2220P	1.0-8.0	4.0	3.3	1.76	1	1.37	1.60	22.00	22.00
	30		2300P	1.0-8.0	4.0	3.3	1.76	1	1.37	1.20	30.00	30.00
	37		2370P	1.0-8.0	4.0	2.0	2.20	1	1.37	0.80	37.00	37.00
	45		2450P	1.0-8.0	2.5	2.0	2.20	1	1.37	0.70	45.00	45.00
55	2550P	1.0-8.0	2.5	2.0	2.20	1	1.37	0.80	55.00	55.00		
3-phase 480 V	0.4	VFAS3-	4004PC	1.0-16.0	4.0	200.0	0.12	3	0.57	4.30	0.40	0.40
	0.75		4007PC	1.0-16.0	4.0	200.0	0.12	3	0.57	4.30	0.75	0.75
	1.5		4015PC	1.0-16.0	4.0	200.0	0.12	3	0.57	4.40	1.50	1.50
	2.2		4022PC	1.0-16.0	4.0	200.0	0.12	3	0.57	2.90	2.20	2.20
	4.0		4037PC	1.0-16.0	4.0	160.0	0.12	3	0.67	2.80	3.70	4.00
	5.5		4055PC	1.0-16.0	4.0	80.0	0.24	3	0.87	2.30	5.50	5.50
	7.5		4075PC	1.0-16.0	4.0	60.0	0.44	3	0.87	2.00	7.50	7.50
	11		4110PC	1.0-16.0	4.0	40.0	0.66	3	1.07	1.60	11.00	11.00
	15		4150PC	1.0-16.0	4.0	30.0	0.88	3	1.07	1.50	15.00	15.00
	18.5		4185PC	1.0-16.0	4.0	30.0	0.88	3	1.37	1.40	18.50	18.50
	22		4220PC	1.0-16.0	4.0	15.0	1.76	3	1.37	1.60	22.00	22.00
	30		4300PC	1.0-16.0	4.0	15.0	1.76	3	1.37	1.20	30.00	30.00
	37		4370PC	1.0-16.0	4.0	8.0	1.76	3	1.37	0.80	37.00	37.00
	45		4450PC	1.0-8.0	4.0	8.0	1.76	3	1.37	0.70	45.00	45.00
	55		4550PC	1.0-8.0	4.0	8.0	1.76	3	1.37	0.80	55.00	55.00
	75		4750PC	1.0-8.0	4.0	8.0	1.76	3	1.37	1.30	75.00	75.00
	90		4900PC	1.0-8.0	2.5	3.7	7.40	3	1.37	1.20	90.00	90.00
	110		4110KPC	1.0-8.0	2.5	3.7	7.40	3	1.37	0.90	110.00	110.00
132	4132KPC	1.0-8.0	2.5	3.7	7.40	3	1.37	0.80	132.00	132.00		
160	4160KPC	1.0-8.0	2.5	3.7	7.40	3	1.37	0.80	160.00	160.00		
220	4200KPC	1.0-8.0	2.5	1.9	8.70	3	1.37	0.80	200.00	200.00		
250	4220KPC	1.0-8.0	2.5	1.9	8.70	3	1.37	0.80	220.00	220.00		
280	4280KPC	1.0-8.0	2.5	1.4	14.00	3	1.37	0.80	280.00	280.00		

Voltage class	Applicable motor (kW)	Inverter type-form	F412 (%)	F415		F416 (%)	F417		F456	F749	
				Adjustment range	(A)		50Hz setting	60Hz setting			
							(min-1)				
3-phase 240 V	0.4	VFAS3-	2004P	7.0	0.01-99.99	1.70	55	1440	1730	100	0
	0.75		2007P	7.0	0.01-99.99	3.40	55	1440	1730	100	0
	1.5		2015P	5.0	0.01-99.99	6.40	42	1445	1740	100	0
	2.2		2022P	5.0	0.01-99.99	9.40	50	1460	1755	100	0
	4.0		2037P	5.0	0.01-99.99	14.60	38	1460	1755	100	1
	5.5		2055P	5.0	0.01-99.99	21.40	41	1465	1760	100	1
	7.5		2075P	5.0	0.01-99.99	28.60	38	1460	1755	100	1
	11		2110P	4.0	0.01-99.99	42.00	38	1475	1770	100	1
	15		2150P	4.0	0.01-99.99	55.60	33	1470	1760	100	1
	18.5		2185P	4.0	0.01-99.99	69.00	37	1475	1770	100	1
	22		2220P	4.0	0.1-999.9	80.0	32	1470	1760	100	1
	30		2300P	4.0	0.1-999.9	108.0	33	1470	1765	100	1
	37		2370P	4.0	0.1-999.9	132.0	32	1480	1775	100	2
	45		2450P	3.0	0.1-999.9	159.0	31	1480	1775	100	2
	55		2550P	3.0	0.1-999.9	192.0	28	1480	1775	100	2
3-phase 480 V	0.4	VFAS3-	4004PC	7.0	0.01-99.99	0.85	55	1440	1730	100	0
	0.75		4007PC	7.0	0.01-99.99	1.70	55	1440	1730	100	0
	1.5		4015PC	5.0	0.01-99.99	3.20	42	1445	1740	100	0
	2.2		4022PC	5.0	0.01-99.99	4.70	50	1460	1755	100	0
	4.0		4037PC	5.0	0.01-99.99	7.30	38	1460	1755	100	1
	5.5		4055PC	5.0	0.01-99.99	10.70	41	1465	1760	100	1
	7.5		4075PC	5.0	0.01-99.99	14.30	38	1460	1755	100	1
	11		4110PC	4.0	0.01-99.99	21.00	38	1475	1770	100	1
	15		4150PC	4.0	0.01-99.99	27.80	33	1470	1760	100	1
	18.5		4185PC	4.0	0.01-99.99	34.50	37	1475	1770	100	1
	22		4220PC	4.0	0.01-99.99	40.00	32	1470	1760	100	1
	30		4300PC	4.0	0.01-99.99	54.00	33	1470	1765	95	1
	37		4370PC	4.0	0.01-99.99	66.00	32	1480	1775	100	2
	45		4450PC	3.0	0.1-999.9	79.5	31	1480	1775	100	2
	55		4550PC	3.0	0.1-999.9	96.0	28	1480	1775	100	2
	75		4750PC	3.0	0.1-999.9	129.0	28	1480	1775	95	2
	90		4900PC	3.0	0.1-999.9	154.0	26	1480	1775	100	2
	110		4110KPC	3.0	0.1-999.9	190.0	21	1480	1780	100	2
	132		4132KPC	3.0	0.1-999.9	230.0	20	1485	1780	100	2
	160		4160KPC	3.0	0.1-999.9	252.0	20	1485	1785	100	2
220	4200KPC	3.0	0.1-999.9	315.0	20	1485	1785	100	2		
250	4220KPC	3.0	0.1-999.9	345.0	20	1485	1785	100	2		
280	4280KPC	3.0	0.1-999.9	445.0	20	1485	1785	100	2		

■ **ND rating**

Voltage class	Applicable motor (kW)	Inverter type-form	vb,F172,F176,F180 (%)	ACC,dEC,F500,F501,F510,F511,F514,F515 (s)	tHrA,F182,F183,F184		F249 (kHz)	F298 (V)	
					Adjustment range	(A)			
3-phase 240 V	0.75	VFAS3-	2004P	4.80	10.0	0.46-4.60	4.60	4.0	120.0
	1.5		2007P	4.80	10.0	0.80-8.00	8.00	4.0	120.0
	2.2		2015P	3.10	10.0	1.12-11.20	11.20	4.0	120.0
	4.0		2022P	3.10	10.0	1.87-18.70	18.70	4.0	120.0
	5.5		2037P	2.50	10.0	2.54-25.40	25.40	4.0	120.0
	7.5		2055P	2.30	10.0	3.27-32.70	32.70	4.0	120.0
	11		2075P	1.80	10.0	4.68-46.80	46.80	4.0	120.0
	15		2110P	1.60	10.0	6.34-63.40	63.40	4.0	120.0
	18.5		2150P	1.50	30.0	7.84-78.40	78.40	4.0	120.0
	22		2185P	1.70	30.0	9.3-92.6	92.6	4.0	120.0
	30		2220P	1.40	30.0	12.3-123.0	123.0	4.0	120.0
	37		2300P	0.90	30.0	14.9-149.0	149.0	4.0	120.0
	45		2370P	0.80	30.0	17.6-176.0	176.0	4.0	120.0
	55		2450P	0.80	30.0	21.1-211.0	211.0	2.5	120.0
75	2550P	1.40	60.0	28.2-282.0	282.0	2.5	120.0		
3-phase 480 V	0.75	VFAS3-	4004PC	4.80	10.0	0.22-2.20	2.20	4.0	240.0
	1.5		4007PC	4.80	10.0	0.40-4.00	4.00	4.0	240.0
	2.2		4015PC	3.10	10.0	0.56-5.60	5.60	4.0	240.0
	4.0		4022PC	3.10	10.0	0.93-9.30	9.30	4.0	240.0
	5.5		4037PC	2.50	10.0	1.27-12.70	12.70	4.0	240.0
	7.5		4055PC	2.30	10.0	1.65-16.50	16.50	4.0	240.0
	11		4075PC	1.80	10.0	2.35-23.50	23.50	4.0	240.0
	15		4110PC	1.60	10.0	3.17-31.70	31.70	4.0	240.0
	18.5		4150PC	1.50	30.0	3.92-39.20	39.20	4.0	240.0
	22		4185PC	1.70	30.0	4.63-46.30	46.30	4.0	240.0
	30		4220PC	1.40	30.0	6.15-61.50	61.50	4.0	264.0
	37		4300PC	0.90	30.0	7.45-74.50	74.50	4.0	264.0
	45		4370PC	0.80	30.0	8.8-88.0	88.0	4.0	264.0
	55		4450PC	0.80	30.0	10.6-106.0	106.0	4.0	264.0
	75		4550PC	1.40	60.0	14.5-145.0	145.0	4.0	264.0
	90		4750PC	1.30	60.0	17.3-173.0	173.0	4.0	264.0
	110		4900PC	1.00	60.0	21.1-211.0	211.0	2.5	240.0
	132		4110KPC	0.80	60.0	25.0-250.0	250.0	2.5	240.0
	160		4132KPC	0.80	60.0	31.4-302.0	302.0	2.5	240.0
	220		4160KPC	0.80	60.0	38.7-427.0	427.0	2.5	240.0
250	4200KPC	0.80	60.0	42.7-481.0	481.0	2.5	240.0		
280	4220KPC	0.80	60.0	55.0-550.0	550.0	2.5	240.0		
315	4280KPC	0.60	60.0	61.6-616.0	616.0	2.5	240.0		

Voltage class	Applicable motor (kW)	Inverter type-form	F300		F308 (Ohm)	F309 (kW)	F316	F356 (s)	F402 (%)	F405		
			Adjustment range	(kHz)						<Set>="JP" (kW)	other (kW)	
3-phase 240 V	0.75	VFAS3-	2004P	1.0-16.0	4.0	200.0	0.12	1	0.57	4.30	0.75	0.75
	1.5		2007P	1.0-16.0	4.0	75.0	0.12	1	0.57	4.40	1.50	1.50
	2.2		2015P	1.0-16.0	4.0	75.0	0.12	1	0.57	2.90	2.20	2.20
	4.0		2022P	1.0-16.0	4.0	40.0	0.12	1	0.67	2.80	3.70	4.00
	5.5		2037P	1.0-16.0	4.0	20.0	0.24	1	0.87	2.30	5.50	5.50
	7.5		2055P	1.0-16.0	4.0	15.0	0.44	1	0.87	2.00	7.50	7.50
	11		2075P	1.0-16.0	4.0	10.0	0.66	1	1.07	1.60	11.00	11.00
	15		2110P	1.0-16.0	4.0	7.5	0.88	1	1.07	1.50	15.00	15.00
	18.5		2150P	1.0-16.0	4.0	7.5	0.88	1	1.37	1.40	18.50	18.50
	22		2185P	1.0-16.0	4.0	3.3	1.76	1	1.37	1.60	22.00	22.00
	30		2220P	1.0-8.0	4.0	3.3	1.76	1	1.37	1.20	30.00	30.00
	37		2300P	1.0-8.0	4.0	2.0	2.20	1	1.37	0.80	37.00	37.00
	45		2370P	1.0-8.0	4.0	2.0	2.20	1	1.37	0.70	45.00	45.00
	55		2450P	1.0-8.0	2.5	2.0	2.20	1	1.37	0.80	55.00	55.00
	75		2550P	1.0-8.0	2.5	1.7	3.40	1	1.37	1.30	75.00	75.00
3-phase 480 V	0.75	VFAS3-	4004PC	1.0-16.0	4.0	200.0	0.12	3	0.57	4.30	0.75	0.75
	1.5		4007PC	1.0-16.0	4.0	200.0	0.12	3	0.57	4.40	1.50	1.50
	2.2		4015PC	1.0-16.0	4.0	200.0	0.12	3	0.57	2.90	2.20	2.20
	4.0		4022PC	1.0-16.0	4.0	160.0	0.12	3	0.67	2.80	3.70	4.00
	5.5		4037PC	1.0-16.0	4.0	80.0	0.24	3	0.87	2.30	5.50	5.50
	7.5		4055PC	1.0-16.0	4.0	60.0	0.44	3	0.87	2.00	7.50	7.50
	11		4075PC	1.0-16.0	4.0	40.0	0.66	3	1.07	1.60	11.00	11.00
	15		4110PC	1.0-16.0	4.0	30.0	0.88	3	1.07	1.50	15.00	15.00
	18.5		4150PC	1.0-16.0	4.0	30.0	0.88	3	1.37	1.40	18.50	18.50
	22		4185PC	1.0-16.0	4.0	15.0	1.76	3	1.37	1.60	22.00	22.00
	30		4220PC	1.0-16.0	4.0	15.0	1.76	3	1.37	1.20	30.00	30.00
	37		4300PC	1.0-16.0	4.0	8.0	1.76	3	1.37	0.80	37.00	37.00
	45		4370PC	1.0-16.0	4.0	8.0	1.76	3	1.37	0.70	45.00	45.00
	55		4450PC	1.0-8.0	4.0	8.0	1.76	3	1.37	0.80	55.00	55.00
	75		4550PC	1.0-8.0	4.0	8.0	1.76	3	1.37	1.30	75.00	75.00
	90		4750PC	1.0-8.0	4.0	3.7	7.40	3	1.37	1.20	90.00	90.00
	110		4900PC	1.0-8.0	2.5	3.7	7.40	3	1.37	0.90	110.0	110.0
	132		4110KPC	1.0-8.0	2.5	3.7	7.40	3	1.37	0.80	132.0	132.0
	160		4132KPC	1.0-8.0	2.5	3.7	7.40	3	1.37	0.80	160.0	160.0
	220		4160KPC	1.0-8.0	2.5	1.9	8.70	3	1.37	0.80	220.0	220.0
250	4200KPC	1.0-8.0	2.5	1.9	8.70	3	1.37	0.80	250.0	250.0		
280	4220KPC	1.0-8.0	2.5	1.4	14.00	3	1.37	0.80	280.0	280.0		
315	4280KPC	1.0-8.0	2.5	1.4	14.00	3	1.37	0.60	315.0	315.0		

11

Voltage class	Applicable motor (kW)	Inverter type-form	F412 (%)	F415		F416 (%)	F417		F456	F749	
				Adjustment range	(A)		50Hz setting	60Hz setting			
							(min-1)				
3-phase 240 V	0.75	VFAS3-	2004P	7.0	0.01-99.99	3.40	55	1440	1730	100	0
	1.5		2007P	5.0	0.01-99.99	6.40	42	1445	1740	100	0
	2.2		2015P	5.0	0.01-99.99	9.40	50	1460	1755	100	0
	4.0		2022P	5.0	0.01-99.99	14.60	38	1460	1755	100	0
	5.5		2037P	5.0	0.01-99.99	21.40	41	1465	1760	100	1
	7.5		2055P	5.0	0.01-99.99	28.60	38	1460	1755	100	1
	11		2075P	4.0	0.01-99.99	42.00	38	1475	1770	100	1
	15		2110P	4.0	0.01-99.99	55.60	33	1470	1760	100	1
	18.5		2150P	4.0	0.01-99.99	69.00	37	1475	1770	100	1
	22		2185P	4.0	0.1-999.9	80.0	32	1470	1760	100	1
	30		2220P	4.0	0.1-999.9	108.0	33	1470	1765	100	1
	37		2300P	4.0	0.1-999.9	132.0	32	1480	1775	100	1
	45		2370P	3.0	0.1-999.9	159.0	31	1480	1775	100	2
	55		2450P	3.0	0.1-999.9	192.0	28	1480	1775	100	2
	75		2550P	3.0	0.1-999.9	264.0	28	1480	1775	100	2
3-phase 480 V	0.75	VFAS3-	4004PC	7.0	0.01-99.99	1.70	55	1440	1730	100	0
	1.5		4007PC	5.0	0.01-99.99	3.20	42	1445	1740	100	0
	2.2		4015PC	5.0	0.01-99.99	4.70	50	1460	1755	100	0
	4.0		4022PC	5.0	0.01-99.99	7.30	38	1460	1755	100	0
	5.5		4037PC	5.0	0.01-99.99	10.70	41	1465	1760	100	1
	7.5		4055PC	5.0	0.01-99.99	14.30	38	1460	1755	100	1
	11		4075PC	4.0	0.01-99.99	21.00	38	1475	1770	100	1
	15		4110PC	4.0	0.01-99.99	27.80	33	1470	1760	100	1
	18.5		4150PC	4.0	0.01-99.99	34.50	37	1475	1770	100	1
	22		4185PC	4.0	0.01-99.99	40.00	32	1470	1760	100	1
	30		4220PC	4.0	0.01-99.99	54.00	33	1470	1765	85	1
	37		4300PC	4.0	0.01-99.99	66.00	32	1480	1775	80	1
	45		4370PC	3.0	0.1-999.9	79.5	31	1480	1775	100	2
	55		4450PC	3.0	0.1-999.9	96.0	28	1480	1775	100	2
	75		4550PC	3.0	0.1-999.9	129.0	28	1480	1775	100	2
	90		4750PC	3.0	0.1-999.9	154.0	26	1480	1775	80	2
	110		4900PC	3.0	0.1-999.9	190.0	21	1480	1780	100	2
	132		4110KPC	3.0	0.1-999.9	230.0	20	1485	1780	100	2
	160		4132KPC	3.0	0.1-999.9	252.0	20	1485	1785	100	2
	220		4160KPC	3.0	0.1-999.9	315.0	20	1485	1785	100	2
250	4200KPC	3.0	0.1-999.9	345.0	20	1485	1785	100	2		
280	4220KPC	3.0	0.1-999.9	445.0	20	1485	1785	100	2		
315	4280KPC	3.0	0.1-999.9	544.0	20	1485	1785	100	2		