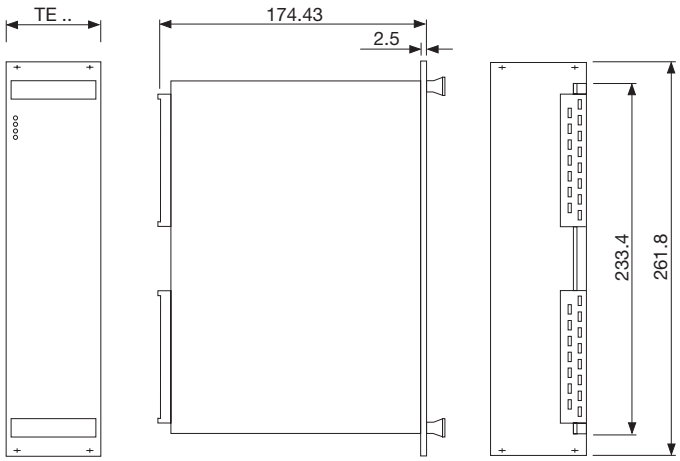
AC / DC POWER SUPPLY
PRIMARY SWITCHED MODE
TRIPLE OUTPUT
P 3146 / P 3310 SERIES

- **19" plug-in module**
- **Autoranging 120 / 230 VAC**
- **EMC Standards EN 50081-1 and EN 50082-2**
- **All outputs permanent short-circuit proof**
- **Outputs SELV according to EN 60950**
- **Overtemperature protection**
- **Optional Power-Fail and ACFAIL-signal**



6HE

Front panel: 8TE (P 3146) = Handle width
Front panel: 12TE (P 3310) = Handle width

ORDER DATA								*Order numbers in italics*	
Vo1 V	**Io1 A**	**Vo2 V**	**Io2 A**	**Vo3 V**	**Io3 A**	**Width TE**	**Height HE**	**Type No. PF-signal**	**Type No. ACFAIL-signal**
+5.1	0 - **20**	**+12.1**	0 - **5**	**-12**	0 - **2**	8	6	**P3146-05121PF** *15.9140.402*	**P3146-05121AC** *15.9140.404*
+5.1	0 - **20**	**+15.1**	0 - **4**	**-15**	0 - **2**	8	6	**P3146-05151PF** *15.9140.502*	**P3146-05151AC** *15.9140.504*
+5.1	0 - **35**	**+12.1**	0 - **6**	**-12**	0 - **2**	12	6	**P3310-05121PF** *15.9140.202*	**P3310-05121AC** *15.9140.204*
+5.1	0 - **35**	**+15.1**	0 - **5**	**-15**	0 - **1.5**	12	6	**P3310-05151PF** *15.9140.302*	**P3310-05151AC** *15.9140.304*

Total output: Limited to max. 160 W for P 3146

Additionally:

Front panel (nature anodized)
33.1591.011.011 (P 3146 - 12 V)
33.1591.011.111 (P 3146 - 15 V)
33.1591.012.011 (P 3310 - 12 V)
33.1591.012.111 (P 3310 - 15 V)

MGV Stromversorgungen GmbH · Bayerwaldstraße 27 · 81737 München · Germany
Tel. +49 / 89 / 67 80 90-0 · Fax +49 / 89 / 67 80 90 80 · Email: info@mgv.de · Internet: www.mgv.de

INPUT

Input voltage range	AC 187 - 264 V, 50/60 Hz With autoranging to AC 99 - 138 V or DC 264 - 347 V
Efficiency	typ. 81%
Input current limitation	≤ 25 A_{peak} typ. – in cold state ≤ 35 A_{peak} typ. – in hot state
Fuse	8 AT

OUTPUT

Adjustment range Vo	±5%
Operation indicator	Green LED for Vi Yellow LED for Vo1, Vo2, Vo3
Ripple	Vo1 < 45 mV_{pp} Vo2 < 30 mV_{pp} Vo3 < 15 mV_{pp}
Noise voltage	< 80 mV_{pp} typ. (total of all noise components)
Temperature coefficient	0.025% / K
Switch on/switch off performance	No overshooting of Vo (soft-start)
Rise-delay time	< 1 s
Run-up time	≤ 15 ms

REGULATION

Line regulation	< 0.2% for all Vo at Vi 187 - 264 VAC
Load regulation	< 0.1% for Vo1 at Io 0 - 100% < 1.0% for Vo2 and Vo3 at Io 0 - 100%
Response time	< 1 ms at Io 20 - 80%

PROTECTION AND CONTROLLING

Overvoltage protection	125% ±5% for Vo1 120% ±10% for Vo2 and Vo3 automatically repeating
Current limitation	typ. 110% $Io_{nominal}$, straight characteristic All outputs permanent short-circuit proof
Overtemperature protection	Switches off when inside temperature becomes too high, switches on again with hysteresis.
Mains buffering	20 ms at 100% load
Power-Fail	The transistor for the PF-signal is blocked, if the output voltage reached a value > 95% of the nominal output voltage. The transistor becomes conductive > 10 ms before the output voltage Vo1 drops.
Signals ACFAIL and SYSRESET	TTL-signals with 48 mA drive current, open-collector and low-active-level

SAFETY

	IEC 950, EN 60950 / VDE 0805 Safety Class I, VDE 0100

EMC

Interference suppression/ interference immunity	EN 50082-2: 1992 EN 61000-4-2 Intensity 4 EN 61000-4-3 Noise level 10 V/m EN 61000-4-4 Intensity 4 EN 61000-4-5 Intensity 4 EN 61000-4-11 VDE 0160 (with shut-down and restart)
Interference emission	EN50081-1, EN55011 / EN55022 Class B, interference transmission depends on assembly

OPERATING DATA

Temperature range	0...+70°C, at free convection
Derating	3% / K at +50°C
Weight	2.0 kg (P 3310), 1.2 kg (P 3146)

Ventilation from bottom to top of the power supply and the housing-specific heatradiation must not be obstructed when installing the power supply. Ensure fire protection by means of the surrounding housing system. In general, kindly refer to the MGV user instructions before use.

MECHANICS

Dimensions	19" plug-in module according to DIN 41494 Part 5
Connection	Connector H 15 / DIN 41612 codable

EXPLANATION

PE ⏚	Protective conductor **Do not use supply without PE-connection!**
L1/N	Mains phase / neutral conductor
L	Load connection, (**14 A max.** for each contact)
F	Signal connection (Signal line)
OVL	Common ground for Vo1, Vo2, Vo3
Sense lines at 5 V	**For a safe operating mode of the device, it is mandatory to connect +5VL with +5VF and OVL with OVF.** **Maximum voltage compensation of 0.25 V of each line.**

PIN CONNECTIONS

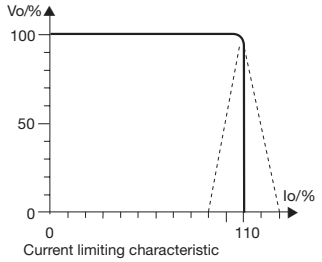
DIN 41612H15

30	26	22	18	14	10	6
N	near mains	near mains	near mains	1)	1)	SYS-RES
32	28	24	20	16	12	8	4
PE ⏚	L1	near mains	near mains	1)	1)	1)	PF ACFAIL

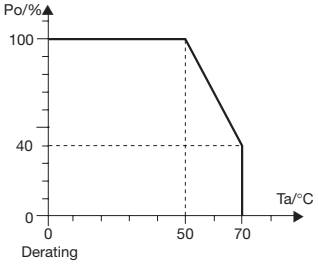
DIN 41612H15

30	26	22	18	14	10	6
+12VL +15VL	OVL	OVL	OVL	+5VF	+5VL	+5VL
32	28	24	20	16	12	8	4
OVF	+12VL +15VL	OVL	OVL	-12VL -15VL	+5VL	+5VL	+5VL

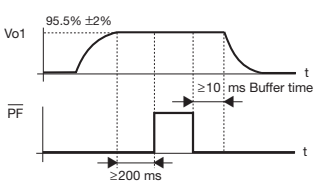
1) internally connected

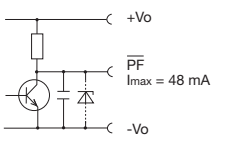


Current limiting characteristic

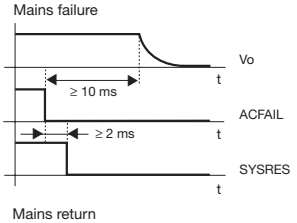


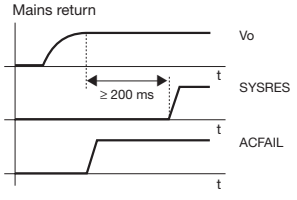
Derating





Power-Fail signal





Signals ACFAIL / SYSRESET