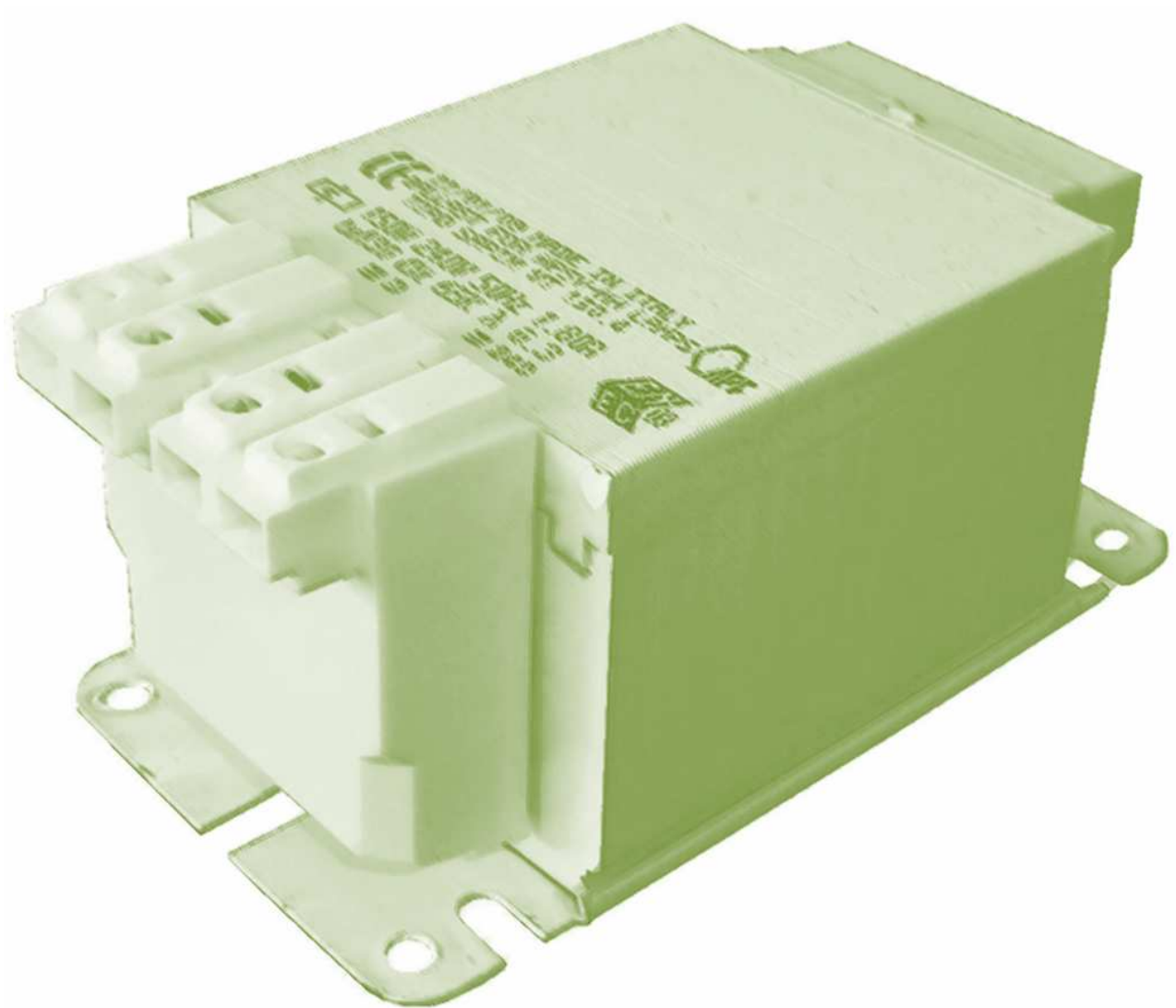




## HID - 20

Class I IP20

Electromagnetic Ballasts for Discharge Lamps



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**BALLASTS FOR HPSV AND METAL HALIDE LAMPS**

SAPIM	35 / 0,53 A	8.03
SAPIM	70 / 0,98 A	8.04
SAPIM	100 / 1,20 A	8.05
SAPIM	150 / 1,80 A	8.06
SAPIM	150 CUBIC / 1,80 A	8.07
SAPIM	250 / 3,00 A	8.08
SAPIM	400 / 4,40 A	8.09
SAP	600 / 6,20 A	8.10
SAPIM	1000 / 10,30 A	8.11

---

**BALLASTS FOR METAL HALIDE LAMPS**

IM	2000 / 16,5 A	8.12
IM	2000 / 8,80 A	8.13
IM	2000 / 10,3 A	8.14
IM	2000 / 12,2 A	8.15

---

**BALLASTS FOR METAL HALIDE AND HPMV LAMPS**

Q	50 / 0,62 A	8.16
Q	80 / 0,80 A	8.17
Q	125 / 1,15A	8.18
Q / IM	250 / 2,13 A	8.19
Q / IM	400 / 3,25 A	8.20
Q / IM	1000 / 8,20 A	8.21

---

**BALLASTS FOR LOW PRESSURE SODIUM LAMPS**

NAV	HYBRID SYSTEM	26 W	8.22
NAV	HYBRID SYSTEM	35 W	8.22
NAV	HYBRID SYSTEM	55W	8.22
NA	AUTOLEAK SYSTEM	35 / 55W	8.22
NA	AUTOLEAK SYSTEM	90W	8.22
NA	AUTOLEAK SYSTEM	135 / 180W	8.22

**IP 20**

A prova di penetrazione di oggetti solidi con diam. Superiore a 12mm - Non protetto allo stillicidio, pioggia e spruzzi  
Protected against solid objects greater than 12mm - without protection for dripping, spraying, splashing water

**NORMATIVE DI RIFERIMENTO - REFERENCE STANDARD**

Prescrizioni generali e di sicurezza	EN 61347 - 1 + EN 61347 -2 -9	General and safety requirements
Prescrizioni di prestazione	EN 60923	Performance requirements
Armoniche – Limiti di emissioni armoniche	EN 61000 – 3 -2	Harmonics – Limits for harmonic current emission

APF produce una gamma completa di alimentatori elettromeccanici da incorporare, utilizzabili come limitatori di corrente in abbinamento a lampade a scarica.

APF produces a complete range of electromechanical built-in ballast usable as a current limiter with discharge lamps.

**LE CARATTERISTICHE COSTRUTTIVE CONFORMI ALLE:**

- Normative di riferimento,
- Prescrizioni delle caratteristiche di lampada,
- Esigenze dei costruttori di apparecchi di illuminazione,
- Selezione dei materiali utilizzati,
- Controllo finale al 100%,
- Impregnazione con resina poliesteri termoindurente.

**THE MANUFACTURING CHARACTERISTICS COMPLY TO:**

- Reference standard,
- Requirements of lamps characteristics,
- Needs of luminaire manufacturer,
- Raw material selection,
- Final test at 100%,
- Impregnation with thermosetting polyester resin,

**UNITE ALLE OTTIME PERFORMANCE ELETTRICHE, QUALI:**

- Ristretta tolleranza di taratura ( ± 3% )
- Ottima linearita' ( caratteristica di impedenza Vz / Iz ) mantenuta entro limiti ristretti .
- ampio contenimento delle caratteristiche trapezoidali ( per lampade sodio alta pressione ),
- perdite ridotte,
- valori di Δt ottimali e per svariate esigenze
- temperatura dell'avvolgimento – tw 130°C

**ADDED WITH THE GOOD ELECTRICAL CHARACTERISTICS, AS :**

- Limited nominal voltage tolerance ( ± 3% ),
- Good linearity ( impedance characteristics Vz / Iz ) maintained in the short range,
- comply the trapezoidal characteristics inside a wide range ( for high pressure sodium vapour lamps ),
- Reduced power losses,
- Optimizaton of Δt value and for variose needs
- Rated temperature of winding – tw 130°C

conferiscono al prodotto APF un alto grado di qualita' ed affidabilità.

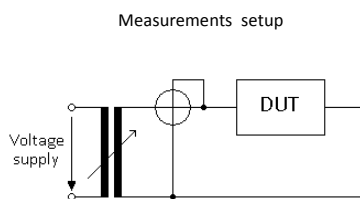
gives to APF product a higher quality and reliability level.

Per alcune tipologie di alimentatori vengono proposti valori differenziati di Δt (sovratemperatura a 25°C ), ricordando che valori bassi migliorano le prestazioni e la durata dei componenti in generale. Gli alimentatori APF sono costruiti per temperatura massima dell'avvolgimento tw 130°C. In base al valore di Δt, per differenza si ottiene un valore indicativo di utilizzo dell'alimentatore.

For some kind of ballasts, various Δt values are proposed (overtemperature at 25°C ), keeping in mind that low values improve the performances and the life of the components. sono costruiti per The APF ballasts are built for a winding maximum temperature of tw130°C. As at consequence of the Δt value, it is possible to get the working value of the ballasts.

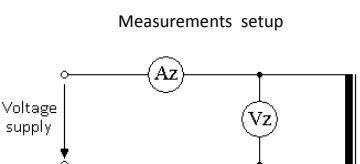
**Efficiency data ( Directive 2005 / 32 / EC )**

**Requisiti di prestazione energetica Energy performance requirements**



Minimum efficiency for HID Ballasts		
RATED POWER LAMP W ( P lamp )	EEl A3 ( current ) % ( η ballast )	EEl A2 ( starting 13 /04 / 2017 ) % ( η ballast )
P < 30	65	78
30 ≤ P ≤ 75	75	85
75 < P ≤ 105	80	87
105 < P ≤ 405	85	90
> 405	90	92

**Calibration data**



Example for BALLAST HPSV / MH 150W 1,8A - Mains 230V 50Hz				
Az	ZΩ	VZ ( ±3% )		
		Min	Nom	Max
1,80	106	185,3	191	196,7

**35W 0,53A**

**Ballasts**

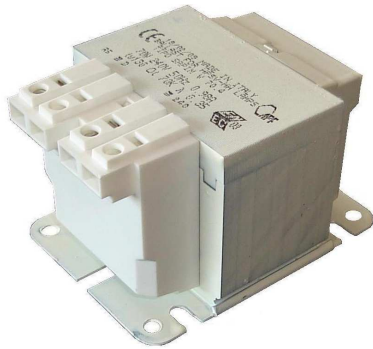
**HI - HS** Lamps

**Built-in type Electromagnetic ballast**  
for Metal Halide and High Pressure Sodium Lamps

class I IP 20



tw 130°C



Ballast Calibration (0,53A)			HPF Capacitor $\lambda \geq 0,90$	
Mains V / Hz	Z $\Omega$	VZ ( $\pm 3\%$ )	$\mu F$ (250V)	A
230 / 50	371	196	6,3	0,22
240 / 50	390	207	6,3	0,21
220 / 60	350	186	6,3	0,23

<i>REFERENCE STANDARD</i>	Safety	EN 61347-1	EN 61347-2-9
	Performance	EN 60923	
	Harmonic Limits	EN 61000-3-2	

Mains		Ballasts Characteristics							THERMAL PROTECTOR BALLAST RANGE		
V	Hz	$\Delta t$ K	losses W	$\lambda$	class EEI	draw N°	Kg	Type	cod.	appr.	
<b>BALLASTS FOR SUPERIMPOSED IGNITORS</b>											
230	50	45	7	0,34	A3	5	0,94	SAPIM VT 35.3 (*)	453535V00		
240	50	50	7,2	0,33	A3	5	0,94	SAPIM VT 35.4 (*)	453545V00		
220	60	45	7,2	0,34	A3	5	0,94	SAPIM VT 35.6 (*)	453565V00		

(\*) Utilizzabili su mercati EXTRA EU - Suitable for country EXTRA EU

<p style="text-align: center;">drawing</p> <p>IGNITOR: E 400 / PW E 400</p>	<p style="text-align: center;">dimensions</p> <p>Screw terminals 1,0 – 2,5mm<sup>2</sup></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <th>Dim</th> <th>A</th> <th>B</th> </tr> <tr> <td>5</td> <td>80</td> <td>51</td> </tr> </table> <div style="text-align: center;"> </div>	Dim	A	B	5	80	51
Dim	A	B					
5	80	51					

**70W 0,98A****Ballasts****HI - HS** Lamps

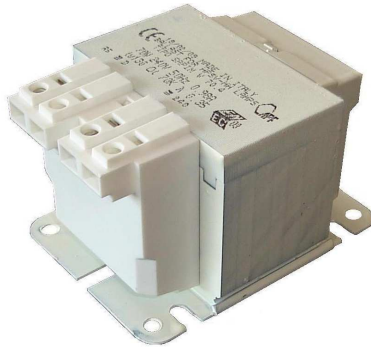
### Built-in type Electromagnetic ballast for Metal Halide and High Pressure Sodium Lamps



class I IP 20



tw 130°C



Mains V /Hz	Ballast Calibration ( 0,98A )		HPF Capacitor $\lambda \geq 0,90$	
	Z $\Omega$	VZ ( $\pm 3\%$ )	$\mu\text{F}$ (250V)	A
230 / 50	199	195	12,5	0,41
240 / 50	208	204	12,5	0,38
220 / 60	188	184	10	0,43

REFERENCE STANDARD	Safety	EN 61347-1	EN 61347-2-9
	Performance	EN 60923	
	Harmonic Limits	EN 61000-3-2	

Mains		Ballasts Characteristics						THERMAL PROTECTOR BALLAST RANGE		
V	Hz	$\Delta t$ K	losses W	$\lambda$	class EEI	draw N°	Kg	Type	cod.	appr.
<b>BALLASTS FOR SUPERIMPOSED IGNITORS</b>										
230	50	55	10,3	0,36	A2	6		SAPIM VT 70.3 R5	457035V05	
		65	12,0	0,36	A3	6		SAPIM VT 70.3 (*)	457035V00	
		75	13	0,38	A3	5		SAPIM VST 70.3 (*)	457035V29	
240	50	60	10,5	0,36	A2	6		SAPIM VT 70.3 R5	457045V05	
		70	12,2	0,35	A3	6		SAPIM VT 70.4 (*)	457045V00	
		75	13,2	0,38	A3	5		SAPIM VST 70.4 (*)	457045V29	
220	60	75	13,2	0,37	A3	5		SAPIM VST 70.6 (*)	457065V29	

(\*) Utilizzabili su mercati EXTRA EU - Suitable for country EXTRA EU

drawing	dimensions									
IGNITOR: E 13 / E 400 / PW E 400	Screw terminals 1,0 – 2,5mm <sup>2</sup>									
	<table border="1"> <thead> <tr> <th>Dim</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>80</td> <td>51</td> </tr> <tr> <td>6</td> <td>90</td> <td>61</td> </tr> </tbody> </table>	Dim	A	B	5	80	51	6	90	61
Dim	A	B								
5	80	51								
6	90	61								

**100W 1,20****Ballasts****HI - HS** Lamps

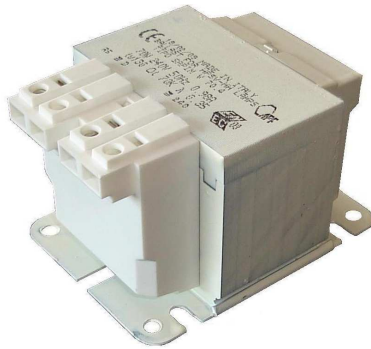
## Built-in type Electromagnetic ballast for Metal Halide and High Pressure Sodium Lamps



class I IP 20





tw 130°C


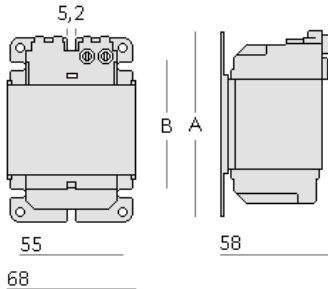


Ballast Calibration ( 1,20A )			HPF Capacitor $\lambda \geq 0,90$	
Mains V / Hz	Z $\Omega$	VZ ( $\pm 3\%$ )	$\mu\text{F}$ (250V )	A
230 / 50	158	189	12,5	0,53
240 / 50	167	200	12,5	0,50
220 / 60	148	178	10	0,55

REFERENCE STANDARD	Safety	EN 61347-1	EN 61347-2-9
	Performance	EN 60923	
	Harmonic Limits	EN 61000-3-2	

Mains		Ballasts Characteristics							THERMAL PROTECTOR BALLAST RANGE		
V	Hz	$\Delta t$ K	losses W	$\lambda$	class EEI	draw N°	Kg	Type	cod.	appr.	
BALLASTS FOR SUPERIMPOSED IGNITORS											
230	50	70	12,2	0,41	A2	6	1,25	SAPIM VT 100.3	451035V00		
240	50	70	12,4	0,39	A2	6	1,25	SAPIM VT 100.4	451045V00		
220	60	65	13	0,41	A3	6	1,25	SAPIM VT 100.6 (*)	451065V00		

(\*) Utilizzabili su mercati EXTRA EU - Suitable for country EXTRA EU

drawing	dimensions						
IGNITOR: E 400 / PW E 400	Screw terminals 1,0 – 2,5mm <sup>2</sup>						
	<table border="1"> <thead> <tr> <th>Dim</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>6</td> <td>90</td> <td>61</td> </tr> </tbody> </table> 	Dim	A	B	6	90	61
Dim	A	B					
6	90	61					

**150W 1,80A****Ballasts****HI - HS** Lamps

## Built-in type Electromagnetic ballast for Metal Halide and High Pressure Sodium Lamps



class I IP 20



tw 130°C



Ballast Calibration ( 1,80A )			HPF Capacitor $\lambda \geq 0,90$	
Mains V /Hz	Z $\Omega$	VZ ( $\pm 3\%$ )	$\mu\text{F}$ (250V )	A
230 / 50	106	191	20	0,78
240 / 50	112	202	20	0,75
220 / 60	99	178	18	0,80

REFERENCE STANDARD	Safety	EN 61347-1	EN 61347-2-9
	Performance	EN 60923	
	Harmonic Limits	EN 61000-3-2	


Mains		Ballasts Characteristics						THERMAL PROTECTOR BALLAST RANGE		
V	Hz	$\Delta t$ K	losses W	$\lambda$	class EEI	draw N°	Kg	Type	cod.	appr.
<b>BALLASTS FOR SUPERIMPOSED IGNITORS</b>										
230	50	45	15	0,40	A2	8	3,05	SAPIM VT 150.3 R4	451535V04	
		50	14,5	0,40	A2	7	2,12	SAPIM VT 150.3 R5	451535V05	
		60	16,5	0,40	A3	7	2,07	SAPIM VT 150.3 (*)	451535V00	
		70	17,4	0,41	A3	7	1,85	SAPIM VST 150.3 (*)	451535V60	
240	50	55	14,8	0,40	A2	7	2,12	SAPIM VT 150.4 R5	451535V05	
		65	16,8	0,38	A3	7	2,07	SAPIM VT 150.4 (*)	451545V00	
		75	17,8	0,39	A3	7	1,85	SAPIM VST 150.4 (*)	451545V60	
220	60	70	17,3	0,41	A3	7	1,65	SAPIM VST 150.6 (*)	451565V60	

(\*) Utilizzabili su mercati EXTRA EU - Suitable for country EXTRA EU

drawing	dimensions									
IGNITOR: E 400 / PW E 400	Screw terminals 1,0 – 2,5mm <sup>2</sup>									
	<table border="1"> <thead> <tr> <th>Dim</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>7</td> <td>122</td> <td>92</td> </tr> <tr> <td>8</td> <td>145</td> <td>115</td> </tr> </tbody> </table>	Dim	A	B	7	122	92	8	145	115
Dim	A	B								
7	122	92								
8	145	115								

**150W 1,80A**  
**CUBIC Ballasts**  
**HI - HS** Lamps


**Built-in type Electromagnetic ballast**  
**for Metal Halide and High Pressure Sodium Lamps**

**CE**  
class I IP 20  
  
tw 130°C


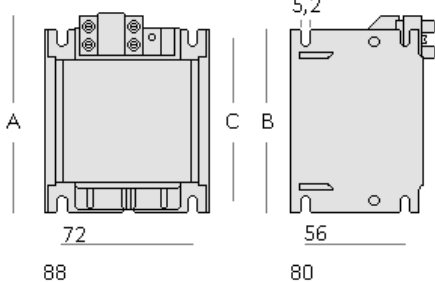


Mains V /Hz	Ballast Calibration ( 1,80A )		HPF Capacitor $\lambda \geq 0,90$	
	Z $\Omega$	VZ ( $\pm 3\%$ )	$\mu F$ (250V )	A
230 / 50	106	191	20	0,78
240 / 50	112	202	20	0,75
220 / 60	99	178	18	0,80

<i>REFERENCE STANDARD</i>	Safety	EN 61347-1	EN 61347-2-9
	Performance	EN 60923	
	Harmonic Limits	EN 61000-3-2	

Mains		Ballasts Characteristics							THERMAL PROTECTOR BALLAST RANGE		
V	Hz	$\Delta t$ K	losses W	$\lambda$	class EEI	draw N°	Kg	Type	cod.	appr.	
<b>BALLASTS FOR SUPERIMPOSED IGNITORS</b>											
230	50	55	14,6	0,40	A2	10	2,30	SAPIM 150.3 CTP	401537500		
		65	17	0,40	A3	10	1,95	SAPIM 150.3 TP (*)	40153756S		
240	50	60	14,8	0,40	A3	10	2,3	SAPIM 150.4 CTP (*)	401547000		
		60	16,5	0,40	A3	10	2,25	SAPIM 150.6 CTP (*)	401567500		
220	60	65	17,5	0,38	A3	10	1,95	SAPIM 150.6 TP (*)	40156756S		

(\*) Utilizzabili su mercati EXTRA EU - Suitable for country EXTRA EU

drawing	dimensions								
IGNITOR: E 400 / PW E 400 	Screw terminals 1,0 – 2,5mm <sup>2</sup> <table border="1"> <tr> <th>Dim</th> <th>A</th> <th>B</th> <th>C</th> </tr> <tr> <td></td> <td>90</td> <td>80</td> <td>60</td> </tr> </table> 	Dim	A	B	C		90	80	60
Dim	A	B	C						
	90	80	60						



**250W 3,00A****Ballasts****HI - HS** Lamps

Built-in type Electromagnetic ballast

Metal Halide and High Pressure Sodium Lamps

230W MASTERColour CDM MW Eco Lamps **(new)**

class I IP 20



tw 130°C



Mains V /Hz	Ballast Calibration ( 3,00A )		HPF Capacitor $\lambda \geq 0,90$	
	Z $\Omega$	VZ ( $\pm 3\%$ )	$\mu$ F (250V )	A
230 / 50	64	192	32	1,35
240 / 50	67,5	202,5	32	1,30
220 / 60	60	180	28	1,38

REFERENCE STANDARD	Safety	EN 61347-1	EN 61347-2-9
	Performance	EN 60923	
	Harmonic Limits	EN 61000-3-2	

Mains		Ballasts Characteristics						THERMAL PROTECTOR BALLAST RANGE		
V	Hz	$\Delta t$ K	losses W	$\lambda$	class EEI	draw N°	Kg	Type	cod.	appr.
<b>BALLASTS FOR SUPERIMPOSED IGNITORS</b>										
230	50	55	23	0,40	A2	11	3,3	SAPIM 250.3 TP R5	40253500R	
		65	25	0,40	A3	11	3,2	SAPIM 250.3 TP (*)	402535000	
		75	26	0,42	A3	9A	2,7	SAPIM 250.3 TP R7 (*)	402535007	
240	50	60	23	0,40	A2	11	3,3	SAPIM 250.4 TP R5	40254500R	
		70	25	0,40	A3	11	3,2	SAPIM 250.4 TP (*)	402545000	
		75	27	0,40	A3	9	2,7	SAPIM 250.4 TP R7 (*)	402545007	
220	60	65	25	0,40	A3	11	3,2	SAPIM 250.6 TP (*)	402565000	
		80	26	0,41	A3	9	2,4	SAPIM S 250.6 TP (*)	402565060	

(\*) Utilizzabili su mercati EXTRA EU - Suitable for country EXTRA EU

drawing	dimensions												
IGNITOR: E 400 / PW E 400	Screw terminals 1,0 – 2,5mm <sup>2</sup>												
	<table border="1"> <thead> <tr> <th>Dim</th> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>9</td> <td>100</td> <td>90</td> <td>70</td> </tr> <tr> <td>11</td> <td>110</td> <td>100</td> <td>80</td> </tr> </tbody> </table>	Dim	A	B	C	9	100	90	70	11	110	100	80
Dim	A	B	C										
9	100	90	70										
11	110	100	80										

**400W 4,00 - 4,40A**

**Ballasts**

**HI - HS** Lamps

**Built-in type Electromagnetic ballast**

**Metal Halide and High Pressure Sodium Lamps**

**360W MASTERColour CDM MW Eco Lamps (new)**



class I IP 20



tw 130°C



Ballast Calibration ( 4,40A )			HPF Capacitor $\lambda \geq 0,90$	
Mains V / Hz	Z $\Omega$	VZ ( $\pm 3\%$ )	$\mu F$ (250V )	A
230 / 50	43,6	192	45	2,10
240 / 50	46	203	45	2,05
220 / 60	40,5	178	40	2,15

REFERENCE STANDARD	Safety	EN 61347-1	EN 61347-2-9
	Performance	EN 60923	
	Harmonic Limits	EN 61000-3-2	

Mains		Ballasts Characteristics							THERMAL PROTECTOR BALLAST RANGE		
V	Hz	$\Delta t$ K	losses W	$\lambda$	class EEI	draw N°	Kg	Type	cod.	appr.	
BALLASTS FOR SUPERIMPOSED IGNITORS											
230	50	60	30	0,45	A2	12	4,5	SAPIM 400.3 TP R5	404035000		
		70	32	0,45	A2	12	4,4	SAPIM 400.3 TP	404035002		
240	50	65	32	0,40	A2	12	4,5	SAPIM 400.4 TP R5	404045000		
		75	33	0,40	A2	12	4,4	SAPIM 400.4 TP	404045002		
220	60	70	32	0,45	A2	12	4,4	SAPIM 400.6 TP	404065000		

drawing	dimensions								
<p>IGNITOR: E 400 / PW E 400</p>	<p>Screw terminals 1,0 – 2,5mm<sup>2</sup></p> <table border="1"> <thead> <tr> <th>Dim</th> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>12</td> <td>135</td> <td>125</td> <td>110</td> </tr> </tbody> </table>	Dim	A	B	C	12	135	125	110
Dim	A	B	C						
12	135	125	110						

**600W 6,20A**

**Ballasts**

**HS Lamps**

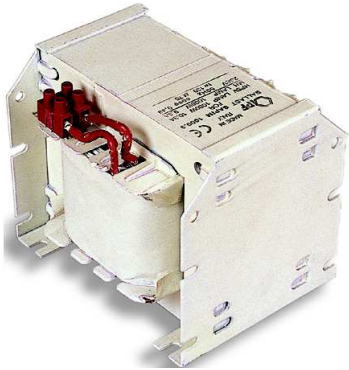
**Built-in type Electromagnetic ballast  
for High Pressure Sodium Lamps**



class I IP 20



tw 130°C



Ballast Calibration ( 6,20A )			HPF Capacitor $\lambda \geq 0,90$	
Mains V /Hz	Z $\Omega$	VZ ( $\pm 3\%$ )	$\mu F$ (250V )	A
230 / 50	29,7	184	60	3,10
240 / 50	31,5	195	60	3,00
220 / 60	27,8	172	55	3,15

<i>REFERENCE STANDARD</i>	Safety	EN 61347-1	EN 61347-2-9
	Performance	EN 60923	
	Harmonic Limits	EN 61000-3-2	

Mains		Ballasts Characteristics							THERMAL PROTECTOR BALLAST RANGE		
V	Hz	$\Delta t$ K	losses W	$\lambda$	class EEI	draw N°	Kg	Type	cod.	appr.	
<b>BALLASTS FOR SUPERIMPOSED IGNITORS</b>											
230	50	70	41	0,46	A2	13	6,5	SAP 600.3 TP	446035000		
240	50	70	42	0,42	A2	13	6,5	SAP 600.4 TP	446045000		
220	60	70	41	0,45	A2	13	6,5	SAP 600.6 TP	446065000		

<p>drawing</p> <p>IGNITOR: SP 303 / PW 1000</p>	<p>dimensions</p> <p>Screw terminals 1,0 - 4,0mm<sup>2</sup></p> <table border="1"> <tr> <th>Dim</th> <th>A</th> <th>B</th> </tr> <tr> <td>13</td> <td>108</td> <td>92</td> </tr> </table>	Dim	A	B	13	108	92
Dim	A	B					
13	108	92					

**1000W 9,5 / 10,3A**

**Ballasts**

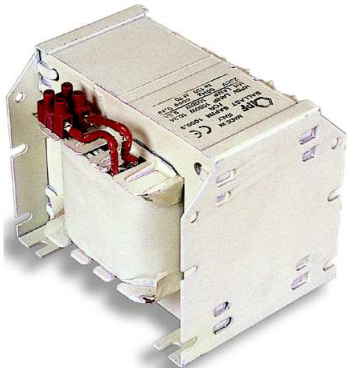
**HI - HS** Lamps

**Built-in type Electromagnetic ballast  
for High Pressure Sodium Lamps**



class I IP 20

tw 130°C



Ballast Calibration ( 10,30A )			HPF Capacitor (250V) $\lambda \geq 0,90$		
Mains V /Hz	Z $\Omega$	VZ ( $\pm 3\%$ )	$\mu F$ HS	$\mu F$ HI	A
230 / 50	18,1	186	100	85	5,10
240 / 50	19,1	197	100	85	4,90
220 / 60	16,8	173	90	75	5,20

REFERENCE STANDARD	Safety	EN 61347-1	EN 61347-2-9
	Performance	EN 60923	
	Harmonic Limits	EN 61000-3-2	

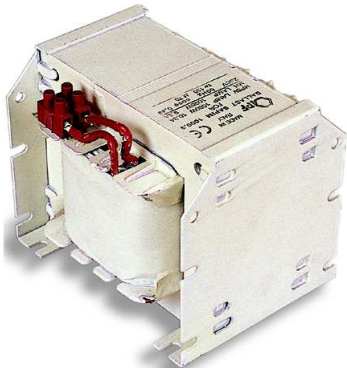
Mains		Ballasts Characteristics						THERMAL PROTECTOR BALLAST RANGE		
V	Hz	$\Delta t$ K	losses W	$\lambda$	class EEI	draw N°	Kg	Type	cod.	appr.
<b>BALLASTS FOR SUPERIMPOSED IGNITORS</b>										
230	50	65	56	0,48	A2	18	10,4	SAPIM 1000.3 R5	400030005	
		70	60	0,48	A2	18	10	SAPIM 1000.3	400030000	
		75	63	0,48	A2	18	10	SAPIM S 1000.3	400030060	
		85	72	0,49	A2	18	9,8	SAPIM V 1000.3	40003000V	
240	50	70	62	0,46	A2	18	10	SAPIM 1000.4	400040000	
220	60	70	60	0,48	A2	18	10	SAPIM 1000.6	400060000	

drawing	dimensions						
<p>IGNITOR: SP 303 / PW 1000</p>	<p>Screw terminals 1,0 - 4,0mm<sup>2</sup></p> <table border="1"> <thead> <tr> <th>Dim</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>18</td> <td>130</td> <td>104</td> </tr> </tbody> </table>	Dim	A	B	18	130	104
Dim	A	B					
18	130	104					

**2000W 16,50A****Ballasts****HI** LampsBuilt-in type Electromagnetic ballast  
for Metal Halide Lamps**CE**

class I IP 20

tw 130°C



Ballast Calibration ( 12,20A )			HPF Capacitor (250V) $\lambda \geq 0,90$	
Mains V /Hz	Z $\Omega$	VZ ( $\pm 3\%$ )	$\mu\text{F}$	A
230 / 50	10,35	170	125	10,0
240 / 50	11,2	185	125	9,8
220 / 60	9,25	153	110	10,6

REFERENCE  
STANDARD

Safety	EN 61347-1	EN 61347-2-9
Performance	EN 60923	
Harmonic Limits	EN 61000-3-2	

Mains		Ballasts Characteristics						BALLAST RANGE		
V	Hz	$\Delta t$ K	losses W	$\lambda$	class EEI	draw N°	Kg	Type	cod.	appr.
<b>BALLASTS WITHOUT THERMAL PROTECTOR</b>										
230	50	70	110	0,44	A2	19	15	IM 2220.3	422230000	
240	50	70	115	0,46	A2	19	15	IM 2220.4	422240000	
220	60	70	110	0,48	A2	19	15	IM 2220.6	422260000	

drawing

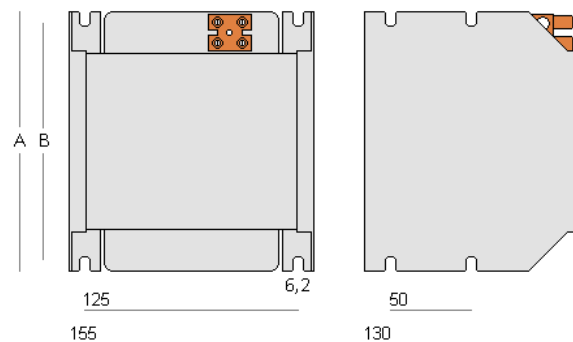
IGNITOR: IM 4



dimensions

Screw terminals 1,0 - 4,0mm<sup>2</sup>

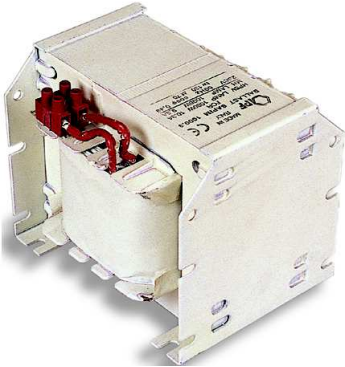
Dim	A	B
19	160	134



**2000W 8,80A**  
**Ballasts**  
**HI Lamps**

**Built-in type Electromagnetic ballast**  
**for Metal Halide Lamps**

**CE**  
class I IP 20  
tw 130°C



Ballast Calibration (8,80A)			HPF Capacitor (450V) $\lambda \geq 0,90$	
Mains V / Hz	Z $\Omega$	VZ ( $\pm 3\%$ )	$\mu F$	A
400 / 50	31	272	40	5,85
415 / 50	32,8	289	40	5,70
380 / 60	28	247	35	6,05

REFERENCE STANDARD	Safety	EN 61347-1	EN 61347-2-9
	Performance	EN 60923	
	Harmonic Limits	EN 61000-3-2	

Mains		Ballasts Characteristics							BALLAST RANGE		
V	Hz	$\Delta t$ K	losses W	$\lambda$	class EEI	draw N°	Kg	Type	cod.	appr.	
<b>BALLASTS WITHOUT THERMAL PROTECTOR</b>											
380	400	50	70	75	0,59	A2	19	15	IM 2388.34	422334000	
400	415	50	70	75	0,59	A2	19	15	IM 2388.44	422344000	
400	50	70	75	75	0,59	A2	19	15	IM 2388.3	422330000	
415	50	75	78	78	0,54	A2	19	15	IM 2388.4	422340000	
380	60	70	75	75	0,59	A2	19	15	IM 2388.6	422360000	

drawing	dimensions						
<p>NO IGNITOR for Lamps:  <b>HPI T 2000 / N</b></p>	<p>Screw terminals 1,0 - 4,0mm<sup>2</sup></p> <table border="1"> <thead> <tr> <th>Dim</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>19</td> <td>160</td> <td>134</td> </tr> </tbody> </table>	Dim	A	B	19	160	134
Dim	A	B					
19	160	134					
<p>IM 4 PULSE IGNITOR for Lamps:  <b>HPI T 2000 / N / SN</b>  <b>HPI T 2000 / 380</b></p>							
<p>SP 403 SUPERIMPOSED IGNITOR for Lamps:  <b>HQI T 2000 / N / E</b></p>							

**2000W 10,3 / 11,3A**

**Ballasts**

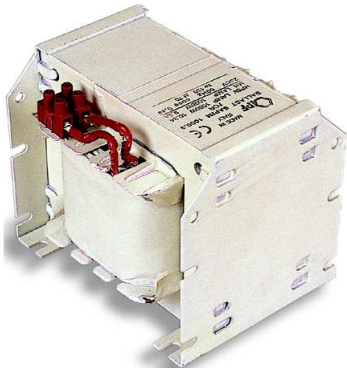
**HI Lamps**

**Built-in type Electromagnetic ballast  
for Metal Halide Lamps**



class I IP 20

tw 130°C



Ballast Calibration ( 10,30A )			HPF Capacitor (450V) $\lambda \geq 0,90$	
Mains V / Hz	Z $\Omega$	VZ ( $\pm 3\%$ )	$\mu F$	A
400 / 50	28	288	60	5,90
415 / 50	30	309	60	5,90
380 / 60	26	268	50	6,10

REFERENCE STANDARD	Safety	EN 61347-1	EN 61347-2-9
	Performance	EN 60923	
	Harmonic Limits	EN 61000-3-2	

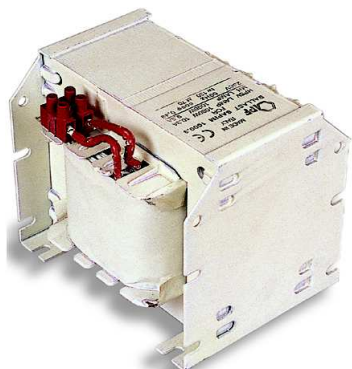
Mains		Ballasts Characteristics							BALLAST RANGE		
V	Hz	$\Delta t$ K	losses W	$\lambda$	class EEI	draw N°	Kg	Type	cod.	appr.	
<b>BALLASTS WITHOUT THERMAL PROTECTOR</b>											
380	400	50	75	85	0,51	A2	19	15	IM 2400.34	422434000	
400	415	50	75	85	0,51	A2	19	15	IM 2400.44	422444000	
400	50	75	85	0,51	A2	19	15	IM 2400.3	422430000		
		70	80	0,50	A2	20	18,4	IM R 2400.3	422430005		
415	50	75	88	0,48	A2	19	15	IM 2400.4	422440000		
		70	82	0,48	A2	20	18,4	IM R 2400.4	422440005		
380	60	75	85	0,51	A2	19	15	IM 2400.6	422460000		

drawing	dimensions									
<p>NO IGNITOR for Lamps: <b>HQI T 2000 / D / I</b></p>	<p>Screw terminals 1,0 - 4,0mm<sup>2</sup></p> <table border="1"> <thead> <tr> <th>Dim</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>19</td> <td>160</td> <td>134</td> </tr> <tr> <td>20</td> <td>180</td> <td>154</td> </tr> </tbody> </table>	Dim	A	B	19	160	134	20	180	154
Dim	A	B								
19	160	134								
20	180	154								
<p>SP 403 SUPERIMPOSED IGNITOR for Lamps: <b>HQI T 2000 / D</b> <b>HQI TS 2000 / DS</b> <b>MHN LA 2000</b> <b>MHN SA 2000</b></p>										

**2000W 12,2A**  
**Ballasts**  
 HQI TS 2000 / D / S Lamps

Built-in type Electromagnetic ballast  
 for Metal Halide Lamps

**CE**  
 class I IP 20  
 tw 130°C



Ballast Calibration ( 12,20A )			HPF Capacitor (450V) $\lambda \geq 0,90$	
Mains V / Hz	Z $\Omega$	VZ ( $\pm 3\%$ )	$\mu F$	A
400 / 50	26	317	70	6,20
415 / 50	26,8	335	70	6,20
380 / 60	24,4	297	60	6,40

REFERENCE STANDARD	Safety	EN 61347-1	EN 61347-2-9
	Performance	EN 60923	
	Harmonic Limits	EN 61000-3-2	

Mains		Ballasts Characteristics						BALLAST RANGE		
V	Hz	$\Delta t$ K	losses W	$\lambda$	class EEI	draw N°	Kg	Type	cod.	appr.
<b>BALLASTS WITHOUT THERMAL PROTECTOR</b>										
400	50	80	100	0,44	A2	20	18	IM 2400 HF.3	4224300HF	
415	50	85	100	0,46	A2	20	18	IM 2400 HF.4	4224300HF	
380	60	80	98	0,48	A2	20	18	IM 2400 HF.6	4224600HF	

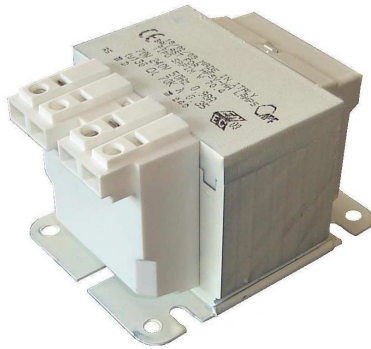
drawing	dimensions						
<p>SP 403 SUPERIMPOSED IGNITOR            for Lamps:  <b>HQI TS 2000 / D / S HIGH FLUX</b></p>	<p>Screw terminals 1,0 - 4,0mm<sup>2</sup></p> <table border="1"> <thead> <tr> <th>Dim</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>20</td> <td>180</td> <td>154</td> </tr> </tbody> </table>	Dim	A	B	20	180	154
Dim	A	B					
20	180	154					



**50W 0,62A****Ballasts****HPMV Lamps****Built-in type Electromagnetic ballast  
for High Pressure Mercury Vapour Lamps**

class I IP 20

tw 130°C



Ballast Calibration (0,62A)			HPF Capacitor $\lambda \geq 0,90$	
Mains V / Hz	Z $\Omega$	VZ ( $\pm 3\%$ )	$\mu\text{F}$ (250V)	A
230 / 50	315	195	7	0,27
240 / 50	331	205	7	0,26
220 / 60	297	184	6,3	0,28

<i>REFERENCE STANDARD</i>	Safety	EN 61347-1	EN 61347-2-9
	Performance	EN 60923	
	Harmonic Limits	EN 61000-3-2	

Mains		Ballasts Characteristics							THERMAL PROTECTOR BALLAST RANGE		
V	Hz	$\Delta t$ K	losses W	$\lambda$	class EEI	draw N°	Kg	Type	cod.	appr.	
<b>BALLASTS WITHOUT THERMAL PROTECTOR</b>											
230	50	55	9	0,41	A3	5	0,94	Q V 50.3 (*)	465030V00		
240	50	55	9,4	0,39	A3	5	0,94	Q V 50.4 (*)	465040V00		
220	60	60	9	0,41	A3	5	0,94	Q V 50.6 (*)	465060V00		

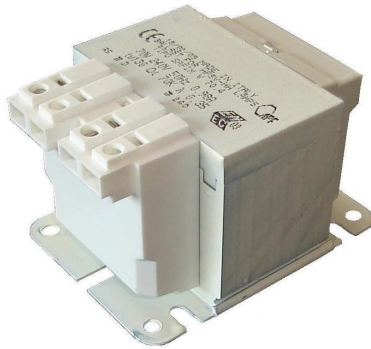
(\*) Utilizzabili su mercati EXTRA EU - Suitable for country EXTRA EU

drawing	dimensions						
	<p>Screw terminals 1,0 – 2,5mm<sup>2</sup></p> <table border="1"> <thead> <tr> <th>Dim</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>80</td> <td>51</td> </tr> </tbody> </table>	Dim	A	B	5	80	51
Dim	A	B					
5	80	51					

**80W 0,80A****Ballasts****HPMV Lamps****Built-in type Electromagnetic ballast  
for High Pressure Mercury Vapour Lamps**

class I IP 20

tw 130°C



Ballast Calibration (0,80A)			HPF Capacitor $\lambda \geq 0,90$	
Mains V / Hz	Z $\Omega$	VZ ( $\pm 3\%$ )	$\mu\text{F}$ (250V)	A
230 / 50	221	177	8	0,41
240 / 50	234	187	8	0,40
220 / 60	206	165	7	0,43

REFERENCE STANDARD	Safety	EN 61347-1	EN 61347-2-9
	Performance	EN 60923	
	Harmonic Limits	EN 61000-3-2	

Mains		Ballasts Characteristics							THERMAL PROTECTOR BALLAST RANGE		
V	Hz	$\Delta t$ K	losses W	$\lambda$	class EEI	draw N°	Kg	Type	cod.	appr.	
<b>BALLASTS WITH THERMAL PROTECTOR</b>											
230	50	65	10	0,49	A3	5	0,95	Q VT 80.3 (*)	468035V00		
240	50	70	10	0,47	A3	5	0,95	Q VT 80.4 (*)	468045V00		
220	60	75	10	0,49	A3	5	0,95	Q VT 80.6 (*)	468065V00		
<b>BALLASTS WITHOUT THERMAL PROTECTOR</b>											
230	50	65	10	0,49	A3	5	0,95	Q V 80.3 (*)	468030V00		
240	50	70	10	0,47	A3	5	0,95	Q V 80.4 (*)	468040V00		
220	60	75	10	0,49	A3	5	0,95	Q V 80.6 (*)	468060V00		

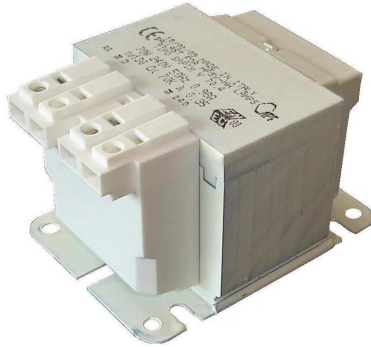
(\*) Utilizzabili su mercati EXTRA EU - Suitable for country EXTRA EU

drawing	dimensions						
	<p>Screw terminals 1,0 – 2,5mm<sup>2</sup></p> <table border="1"> <thead> <tr> <th>Dim</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>80</td> <td>51</td> </tr> </tbody> </table>	Dim	A	B	5	80	51
Dim	A	B					
5	80	51					

**125W 1,15A**  
**Ballasts**  
**HPMV Lamps**

Built-in type Electromagnetic ballast  
for High Pressure Mercury Vapour Lamps

**CE**  
class I IP 20  
tw 130°C



Ballast Calibration ( 1,15A )			HPF Capacitor $\lambda \geq 0,90$	
Mains V /Hz	Z $\Omega$	VZ ( $\pm 3\%$ )	$\mu F$ (250V )	A
230 / 50	146	168	10	0,65
240 / 50	157	180	10	0,62
220 / 60	134	154	9	0,67

REFERENCE STANDARD	Safety	EN 61347-1	EN 61347-2-9
	Performance	EN 60923	
	Harmonic Limits	EN 61000-3-2	

Mains		Ballasts Characteristics							THERMAL PROTECTOR BALLAST RANGE		
V	Hz	$\Delta t$ K	losses W	$\lambda$	class EEI	draw N°	Kg	Type	cod.	appr.	
<b>BALLASTS WITH THERMAL PROTECTOR</b>											
230	50	60	11,2	0,52	A2	6	1,25	Q VT 125.3	461235V00		
240	50	65	11,5	0,49	A2	6	1,25	Q VT 125.4	461245V00		
<b>BALLASTS WITHOUT THERMAL PROTECTOR</b>											
230	50	60	11,2	0,52	A2	6	1,25	Q V 125.3	461230V00		
240	50	65	11,5	0,49	A2	6	1,25	Q V 125.4	461240V00		
220	60	65	11,5	0,52	A2	6	1,25	Q V 125.6	461260V00		

drawing	dimensions					
	Screw terminals 1,0 – 2,5mm <sup>2</sup>					
	<table border="1"> <thead> <tr> <th>Dim</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>6</td> <td>90</td> <td>61</td> </tr> </tbody> </table>	Dim	A	B	6	90
Dim	A	B				
6	90	61				

250W 2,13A  
Ballasts

Built-in type Electromagnetic ballast

for:



class I IP 20



tw 130°C

HPI - HQI.../ Plus Lamps

250W Metal Halide Lamps

CDM MW Lamps

230W MASTERColour CDM MW Eco Lamps (new)

HPMV Lamps

250W High pressure Mercury vapours Lamps



Ballast Calibration ( 2,13A )			HPF Capacitor $\lambda \geq 0,90$	
Mains V /Hz	Z $\Omega$	VZ ( $\pm 3\%$ )	$\mu F$ (250V)	A
230 / 50	77,5	165	18	1,30
240 / 50	82,5	176	18	1,25
220 / 60	71	151	16	1,35

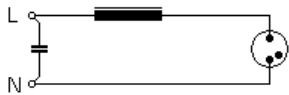
REFERENCE  
STANDARD

Safety	EN 61347-1	EN 61347-2-9
Performance	EN 60923	
Harmonic Limits	EN 61000-3-2	

Mains		Ballasts Characteristics						BALLAST RANGE WITH AND WITHOUT THERMAL PROTECTOR		
V	Hz	$\Delta t$ K	losses W*	$\lambda$	class EEI	draw N°	Kg	Type	cod.	appr.
<b>BALLASTS WITH THERMAL PROTECTOR</b>										
230	50	65	18	0,55	A2	10	2,2	Q 250.3 TP	412535000	
		75	19	0,55	A2	10	1,9	Q S 250.3 TP	412535060	
240	50	65	18,5	0,55	A2	10	2,2	Q 250.4 TP	412545000	
220	60	75	19	0,57	A2	9	1,9	Q S 250.6 TP	412565060	
<b>BALLASTS WITHOUT THERMAL PROTECTOR</b>										
230	50	65	18	0,55	A2	10	2,2	Q 250.3	412530000	
		75	19	0,55	A2	9	1,9	Q S 250.3	412530060	
240	50	65	18,5	0,55	A2	10	2,2	Q 250.4	412540000	
		75	19,5	0,53	A2	9	1,9	Q S 250.4	412540060	
220	60	75	19	0,57	A2	9	1,9	Q S 250.6	412560060	

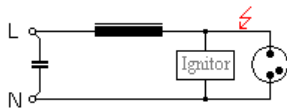
drawing

With Mercury Vapours Lamps



With Metal Halide / CDM Vapour Lamps

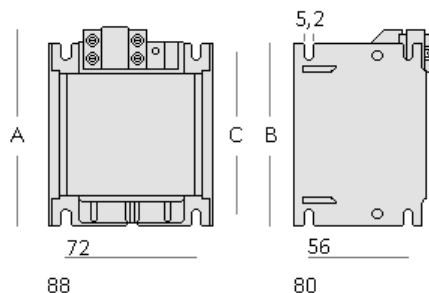
IM2 - IMF2 ignitor



dimensions

Screw terminals 1,0 – 4,0mm<sup>2</sup>

Dim.	L	L1	L2
9	72	62	50
10	90	80	60



400W 3,25A

Ballasts

Built-in type Electromagnetic ballast

for:



class I IP 20



tw 130°C

HPI - HQI.../ Plus Lamps

400W Metal Halide Lamps

CDM MW Lamps

360W MASTERColour CDM MW Eco Lamps (new)

HPMV Lamps

400W High pressure Mercury vapours Lamps



Ballast Calibration ( 3,25A )			HPF Capacitor $\lambda \geq 0,90$	
Mains V /Hz	Z $\Omega$	VZ ( $\pm 3\%$ )	$\mu F$ (250V)	A
230 / 50	77,5	165	18	1,30
240 / 50	82,5	176	18	1,25
220 / 60	71	151	16	1,35

REFERENCE STANDARD	Safety	EN 61347-1	EN 61347-2-9
	Performance	EN 60923	
	Harmonic Limits	EN 61000-3-2	

Mains		Ballasts Characteristics							BALLAST RANGE WITH AND WITHOUT THERMAL PROTECTOR		
V	Hz	$\Delta t$ K	losses W*	$\lambda$	class EEI	draw N°	Kg	Type	cod.	appr.	
<b>BALLASTS WITH THERMAL PROTECTOR</b>											
230	50	65	22	0,57	A2	11	3,3	Q 400.3 TP	414035000		
		75	23	0,59	A2	11	3,1	Q S 400.3 TP	414035060		
240	50	70	22,5	0,55	A2	11	3,3	Q 400.4 TP	414045000		
		80	23,5	0,57	A2	11	3,1	Q S 400.4 TP	414045060		
220	60	65	22	0,60	A2	11	3,3	Q 400.6 TP	414065000		
		75	23	0,63	A2	11	3,1	Q S 400.6 TP	414065060		
<b>BALLASTS WITHOUT THERMAL PROTECTOR</b>											
230	50	65	22	0,57	A2	11	3,3	Q 400.3	414030000		
		75	23	0,59	A2	11	3,1	Q S 400.3	414030060		
240	50	70	22,5	0,55	A2	11	3,3	Q 400.4	414040000		
		80	23,5	0,57	A2	11	3,1	Q S 400.4	414040060		
220	60	65	22	0,60	A2	11	3,3	Q 400.6	414060000		
		75	23	0,63	A2	11	3,1	Q S 400.6	414060060		

drawing	dimensions								
<p>With Mercury Vapours Lamps</p>	<p>Screw terminals 1,0 – 4,0mm<sup>2</sup></p> <table border="1"> <thead> <tr> <th>Dim.</th> <th>L</th> <th>L1</th> <th>L2</th> </tr> </thead> <tbody> <tr> <td>11</td> <td>110</td> <td>100</td> <td>80</td> </tr> </tbody> </table>	Dim.	L	L1	L2	11	110	100	80
Dim.		L	L1	L2					
11	110	100	80						
<p>With Metal Halide / CDM Vapour Lamps</p> <p>IM2 - IMF2 ignitor</p>									

1000W 7,5 / 8,2A

Ballasts

Built-in type Electromagnetic ballast

for:

CE  
class I IP 20  
tw 130°C

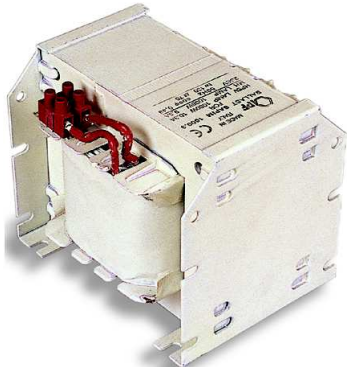
HPI - HPI Plus Lamps

HQI... / SI Lamps

HPMV Lamps

Metal Halide Lamps

High pressure Mercury vapours Lamps



Ballast Calibration ( 8,20A )			HPF Capacitor $\lambda \geq 0,90$	
Mains V /Hz	Z $\Omega$	VZ ( $\pm 3\%$ )	$\mu F$ (250V)	A
230 / 50	20,7	170	65	5,10
240 / 50	22,4	184	65	4,90
220 / 60	18,5	152	60	5,20

REFERENCE  
STANDARD

Safety	EN 61347-1	EN 61347-2-9
Performance	EN 60923	
Harmonic Limits	EN 61000-3-2	

Mains		Ballasts Characteristics							BALLAST RANGE WITH AND WITHOUT THERMAL PROTECTOR		
V	Hz	$\Delta t$ K	losses W*	$\lambda$	class EEI	draw N°	Kg	Type	cod.	appr.	
BALLASTS WITH THERMAL PROTECTOR											
230	50	70	48	0,60	A2	14	9,0	Q 1000.3 TP	410035000		
BALLASTS WITHOUT THERMAL PROTECTOR											
230	50	70	48	0,60	A2	14	9,0	Q 1000.3	410030000		
240	50	75	50	0,58	A2	14	9,0	Q 1000.4	410040000		
220	60	70	48	0,60	A2	14	9,0	Q 1000.6	410060000		

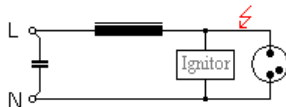
drawing

With Mercury Vapours Lamps



With Metal Halide Vapour Lamps

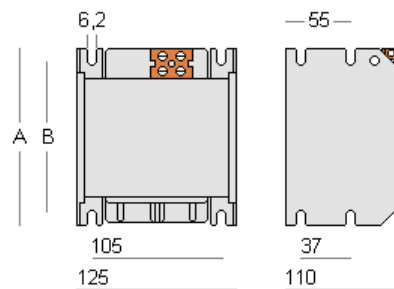
IM2 - IMF2 ignitor



dimensions

Screw terminals 1,0 – 4,0mm<sup>2</sup>

Dim.	A	B
14	126	112



**26 - 180W****Ballasts****LPSV Lamps****Built-in type Electromagnetic ballast**

class I IP 20

for Low Pressure Sodium Lamps

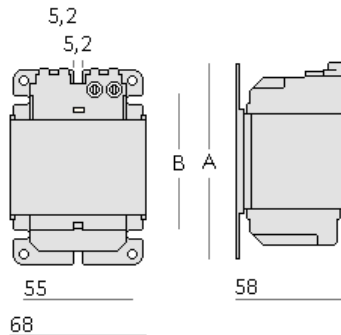
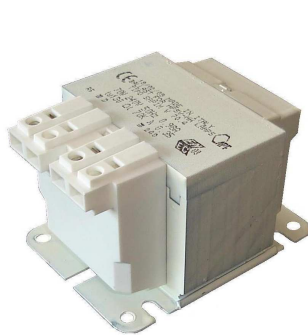
tw 130°C

Utilizzabili su mercati EXTRA EU - Suitable for country EXTRA EU

**HIBRYD SYSTEM  
AUTOLEAK SYSTEM**REFERENCE  
STANDARD

Safety	EN 61347-1	EN 61347-2-9
Performance	EN 60923	
Harmonic Limits	EN 61000-3-2	

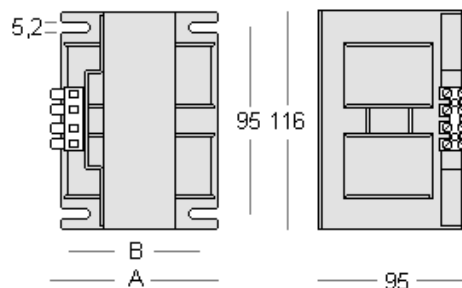
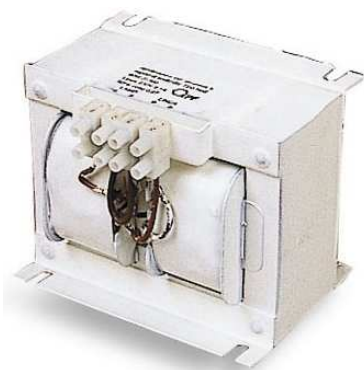
Lamps		Mains <b>230V 50Hz</b> Ballasts Characteristics							BALLAST RANGE		HPF Capacitor (250V) $\lambda \geq 0,90$	
W	A	$\Delta t$ K	losses W	$\lambda$	class EEI	draw N°	Kg	Type	cod.	$\mu F$	A	
<b>HYBRID SYSTEM</b>												
26	0,45	40	6	0,36	A3	5	0,90	NA V 26.3	492637V00	4	0,20	
35	0,60	60	7,4	0,35	A3	6	1,35	NA V 35.3	494537V00	7	0,36	
55	0,60	60	8,5	0,48	A3	6	1,35	NA V 55.3	495537V00	7	0,33	

Screw terminals 1,0 – 2,5mm<sup>2</sup>

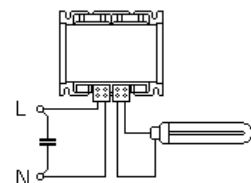
Dim.	L	L1
5	80	51
6	90	61

**AUTOLEAK SYSTEM**

35	0,60	60	25	0,18	A3	21	2,7	NA 1.3	495530000	20	1,45
55			0,37								
90	0,60	60	27	0,25	A3	22	4,1	NA 2.3	499030000	30	2,20
135	0,90	70	34	0,24	A3	23	6,1	NA 3.3	491330000	40	2,90
180			0,35								

Screw terminals 1,0 – 2,5mm<sup>2</sup>

Dim.	A	B
21	65	45
22	85	65
23	225	95





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*in collaborazione con*



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