

# ITRS

## Electronic fan speed controller with TK



The ITRS9 series of electronic speed controllers regulate the speed of single-phase (110–240 VAC / 50–60 Hz) voltage controllable motors by varying the supplied voltage. The ITRS9 controllers offer automatic power supply detection, thermal contacts (TK) for motor overheating protection, an alarm output, NO (open contact) and NC (closed contact) inputs for remote start / stop. The minimum and maximum speed are internally adjusted via trimmers. The series features an unregulated output for connecting a valve, lamp, damper, etc. The output is regulated by a potentiometer in the range between the minimum output voltage and the supply voltage. There are two start-up modes - kick start and soft start, selectable via a jumper.

### Key features

- Wide power supply range (110–240 VAC / 50–60 Hz)
- Automatic supply voltage detection
- Adjustable stepless output voltage
- 230 VAC alarm output
- TK monitoring for thermal motor protection
- Contacts for remote on /off switching
- Minimum and maximum speed adjustable by internal trimmers
- Overheating motor protection
- Kick start or soft start
- Illuminated on/off switch
- Operating and fault detection LED indications

### Area of use

- Fan speed control of voltage controllable motors in ventilation systems
- For indoor use only

### Technical specifications

Input voltage	110–240 VAC / 50–60 Hz	
Regulated output	U <sub>min</sub> –U <sub>s</sub>	
Maximum load	depends on the version	
Unregulated output	230 VAC / I <sub>max</sub> . 2 A	
Minimum output voltage, MIN	30–60 % of U <sub>s</sub>	
Maximum output voltage, MAX	70–100 % of U <sub>s</sub>	
Alarm output	230 VAC, I <sub>max</sub> . 0,5 A	
Kick start duration	8–10 s	
Protection	Motor overheating	
Ambient conditions	Temperature	-20–35 °C
	Relative humidity	5–95 % rH (non-condensing)
Protection standard	IP54 (according to EN 60529)	

### Article codes

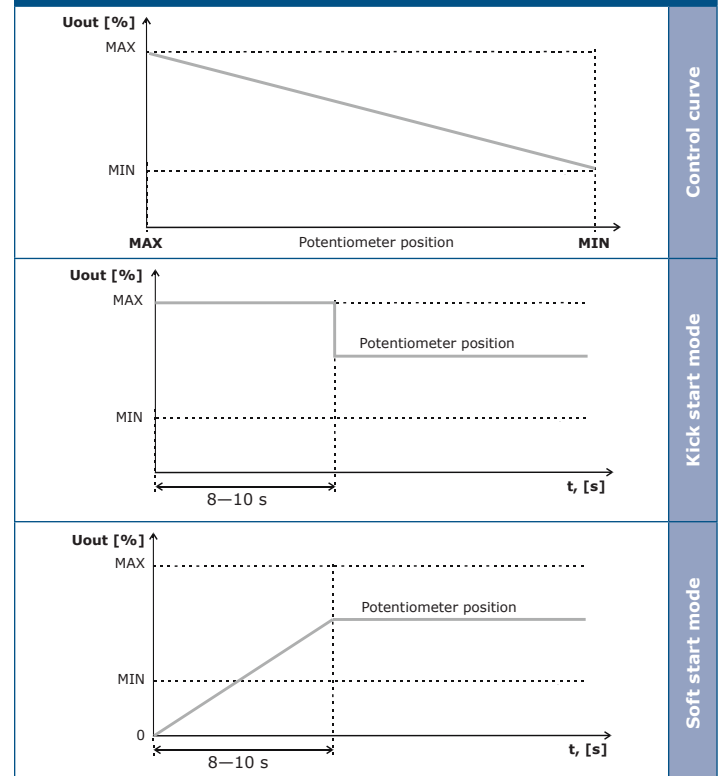
Article code	Rated max. current [A]	Fuse [A]
<b>ITRS9-15-DT</b>	1,5	(5*20 mm) F 3,15 A H 250 VAC
<b>ITRS9-30-DT</b>	3,0	(5*20 mm) F 5,0 A H 250 VAC
<b>ITRS9-50-DT</b>	5,0	(5*20 mm) F 8,0 A H 250 VAC
<b>ITRS9-60-DT</b>	6,0	(6,3*32 mm) F 10,0 A H 250 VAC
<b>ITRS9100-DT</b>	10,0	(6,3*32 mm) F 16,0 A H 250 VAC

### Standards

- Low Voltage Directive 2014/35/EC
- EMC Directive 2014/30/EU: EN 61000-6-3:2007/A1:2011/AC:2012
- WEEE 2012/19/EC
- RoHS Directive 2011/65/EC



### Operational diagram



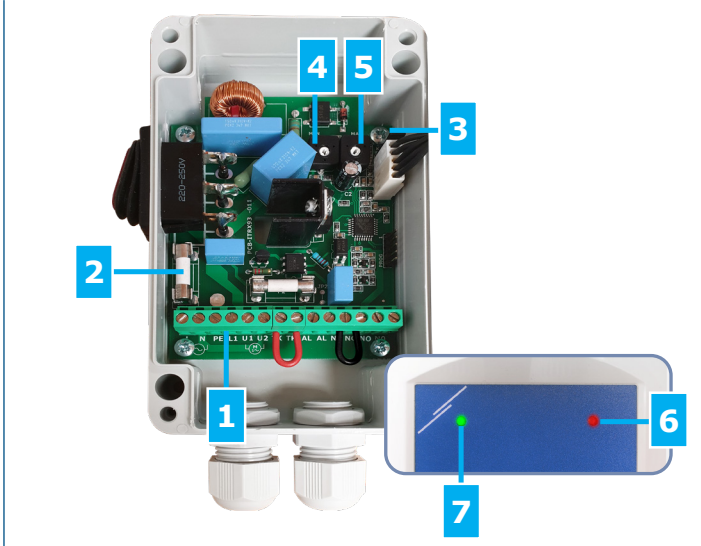
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### Legend

ITRS9-15-DT, ITRS9-30-DT



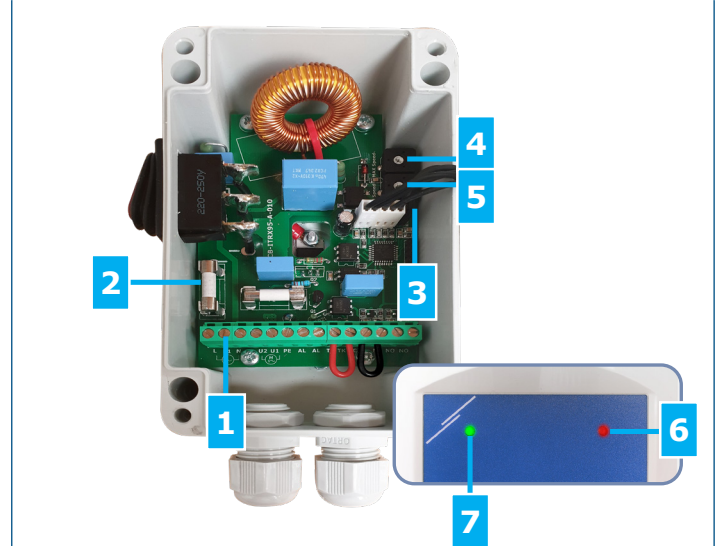
1 - Terminal block		
2 - Fuse		
3 - Kick start selection jumper	*	Kick start is enabled
		Soft start is enabled
4 - Minimum speed trimmer		Adjusts the min. speed (factory preset to 45 % of Us)
5 - Maximum speed trimmer		Adjusts the max. speed (factory preset to 100 % of Us)

LED indications		
6 - Red LED	On	TK detection. The motor is overheated and the controller stops. The alarm output is activated. Restart the controller via the ON/OFF switch
7 - Green LED	On	Normal operation
	Blinking	NC or NO contact is activated. The controller stops
6 and 7	Alternating	The potentiometer is disconnected. The controller stops

\* indicates closed position of the jumper.

### Legend

ITRS9-50-DT



1 - Terminal block		
2 - Fuse		
3 - Kick start selection jumper	*	Kick start is enabled
		Soft start is enabled
4 - Minimum speed trimmer		Adjusts the min. speed (factory preset to 45 % of Us)
5 - Maximum speed trimmer		Adjusts the max. speed (factory preset to 100 % of Us)

LED indications		
6 - Red LED	On	TK detection. The motor is overheated and the controller stops. The alarm output is activated. Restart the controller via the ON/OFF switch
7 - Green LED	On	Normal operation
	Blinking	NC or NO contact is activated. The controller stops
6 and 7	Alternating	The potentiometer is disconnected. The controller stops

\* indicates closed position of the jumper.

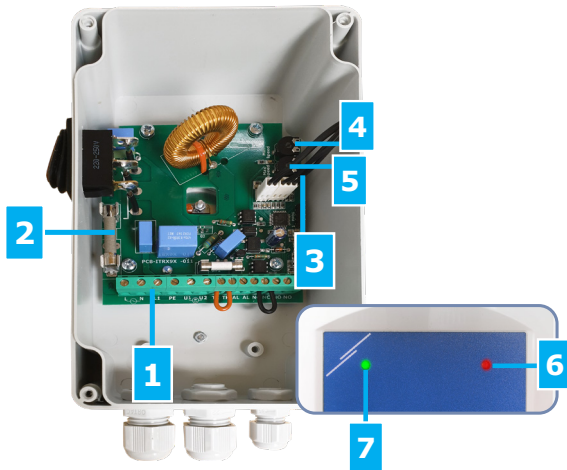
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## Electronic fan speed controller with TK



### Legend

ITRS9-60-DT, ITRS9100-DT



1 - Terminal block		
2 - Fuse		
3 - Kick start selection jumper		Kick start is enabled Soft start is enabled
4 - Minimum speed trimmer		Adjusts the min. speed (factory preset to 45 % of Us)
5 - Maximum speed trimmer		Adjusts the max. speed (factory preset to 100 % of Us)

### LED indications

6 - Red LED	On	TK detection. The motor is overheated and the controller stops. The alarm output is activated. Restart the controller via the ON/OFF switch
7 - Green LED	On	Normal operation
	Blinking	NC or NO contact is activated. The controller stops
6 and 7	Alternating	The potentiometer is disconnected and the controller stops

\* indicates closed position of the jumper.

**Note:** To disable the ON / OFF switch, connect the 230 VAC supply voltage to the unregulated output (L1). In this case, do not connect the power supply to L. This is only allowed for 1,5 A and 3,0 A versions!

### Wiring and connections

ITRS9-15-DT, ITRS9-30-DT

L	Power supply, line (110–240 VAC / 50–60 Hz)
N	Neutral
L1	Unregulated output, line (230 VAC / Imax. 2 A)
PE	Protective earth
U2	Regulated output to motor, neutral
U1	Regulated output to motor, line
TK	Input - TK monitoring for thermal motor protection
TK	
AL	Alarm output (230 VAC / Imax / 0,5 A)
AL	
NC	Input - normally closed contact for remote ON / OFF switching
NC	
NO	Input - normally open contact for remote ON / OFF switching
NO	

ITRS9-50-DT

L	Power supply, line (110–240 VAC / 50–60 Hz)
L1	Unregulated output, line (230 VAC / Imax. 2 A)
N	Neutral
U2	Regulated output to motor, neutral
U1	Regulated output to motor, line
PE	Protective earth
AL	Alarm output (230 VAC / Imax / 0,5 A)
AL	
TK	Input - TK monitoring for thermal motor protection
TK	
NC	Input - normally closed contact for remote ON / OFF switching
NC	
NO	Input - normally open contact for remote ON / OFF switching
NO	

ITRS9-60-DT, ITRS9100-DT

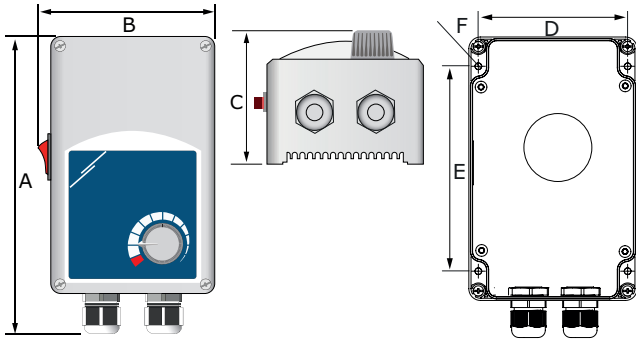
L	Power supply, line (110–240 VAC / 50–60 Hz)
N	Neutral
L1	Unregulated output, line (230 VAC / Imax. 2 A)
PE	Protective earth
U2	Regulated output to motor, neutral
U1	Regulated output to motor, line
TK	Input - TK monitoring for thermal motor protection
TK	
AL	Alarm output (230 VAC / Imax / 0,5 A)
AL	
NC	Input - normally closed contact for remote ON / OFF switching
NC	
NO	Input - normally open contact for remote ON / OFF switching
NO	

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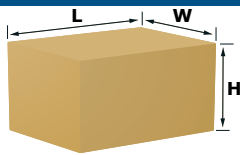


### Fixing and dimensions



Article code	A	B	C	D	E	F
ITRS-9-15-DT ITRS-9-30-DT	162 mm	96 mm	75 mm	71 mm	108,8 mm	Ø 4,2
ITRS-9-50-DT	162 mm	96 mm	93 mm	71 mm	108,8 mm	Ø 4,2
ITRS-9-60-DT ITRS-9100-DT	205 mm	124 mm	97 mm	102 mm	140 mm	Ø 4,6

### Packaging



Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight	Gross weight
ITRS9-15-DT	Unit (1 pc.)	175	96	95	0,41 kg	0,47 kg
	Box (24 pcs.)	590	380	280	9,9 kg	12 kg
ITRS9-30-DT	Unit (1 pc.)	175	96	95	0,45 kg	0,51 kg
	Box (24 pcs.)	590	380	280	10,9 kg	13 kg
ITRS9-50-DT	Unit (1 pc.)	175	96	95	0,64 kg	0,70 kg
	Box (24 pcs.)	590	380	280	15,4 kg	17,5 kg
ITRS9-60-DT	Unit (1 pc.)	210	130	110	0,83 kg	0,92 kg
	Box (15 pcs.)	540	405	245	12,42 kg	14,64 kg
ITRS9100-DT	Unit (1 pc.)	210	130	110	0,95 kg	1,04 kg
	Box (15 pcs.)	540	405	245	14,25 kg	16,44 kg

### Global trade item numbers (GTIN)

Packaging	Unit	Box	Pallet
ITRS9-15-DT	05401003008324	05401003501825	05401003700235
ITRS9-30-DT	05401003008331	05401003501832	05401003700242
ITRS9-50-DT	05401003008348	05401003501849	05401003700259
ITRS9-60-DT	05401003008355	05401003501856	05401003700266
ITRS9100-DT	05401003008362	05401003501863	05401003700273