BASIC MOTOR PROTECTION

- ***For 3-phase motors from 1 to 630 A and over. Cable feed through relay.***
- ***Precise motor heating and cooling memory, reproduces its thermal image.***
- ***Immediate detection of phase loss (3 s), even at reduced load.***
- ***Visual indication of tripping cause.***

For motors of low and medium power in several applications such as compressors, ventilators, surface mounted pumps, conveyor belts, machine tools, and in general to protect motors which need dependable and accurate protection relays for every type of start.

Its 3 trip classes cover many types of starting or working cycles.

C

PROTECTION FUNCTIONS

- $I>$ Overload
- Phase imbalance or phase loss

EXTERNAL DISPLAY MODULE

By means of this plug-in optional accessory, the relay status can be seen and reset from the exterior of the electrical panel board.

Easy to install. Size of a Ø22 mm push button.

Suitable for motor control centres (MCC) and panel boards.

ODC

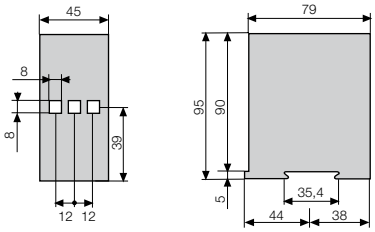
Models	Code	Relay type
ODC	**12530**	C

MODELS			C 9	C 21	C 45
Adjustment range Motor 400 V 50/60 Hz	I_B (A)		3 - 9,3	9 - 21,6	20 - 45,2
	CV		2 - 5,5	7,5 - 12	15 - 30
	kW		1,5 - 4	5,5 - 9	11 - 22
Code: according to the relay voltage supply (+15% -10%) ac: 50/60 Hz	230 Vac	single phase	**11203**	**11223**	**11243**
	115 Vac	single phase	**11202**	**11222**	**11242**
	24 Vac, dc	single phase	**11200**	**11220**	**11240**
For I_N of the motor below the minimum setting I_B			Pass the cables several times (n) through the holes in the relay I_B = n x I_N		
For I_N of the motor below the minimum setting I_B			Use 3 CT .../5 and the relay C9 and pass the secondary twice through the holes		
External display module (optional)			ODC		

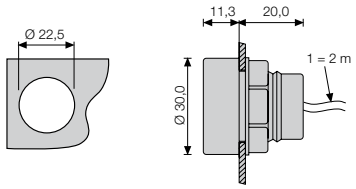
CHARACTERISTICS	
Thermal memory / Overload trip	Yes / From 1,1 x I_B
Maximum motor nominal voltage	1000 Vac
Trip classes (IEC 947-4-1)	10 - 20 - 30
Phase imbalance protection	Over 40%. Tripping time < 3s
Reset mode	Manual and remote
Signalling LED's	3 LED's: ON + $I>$ + ⅄
Output contacts	1 relay with 1 NO + 1 NC
Switching power	I_{th}: 5A; AC15 - 250V - 2A; DC13 - 30V - 2A
Terminals: Max. section / screw torque	2,5 mm², No. 22 - 12AWG / 20Ncm, 1.8 LB - IN
Power consumption	**C9:** 6,5VA (230Vac) - 3VA (115Vac) / **C21-C45:** 2,5VA
Protection degree / weight / mounting	IP20 / 0,3 kg / DIN rail
Storage temperature	-30°C +70°C
Operation temperature / max. altitude	-15°C +60°C / 1000m ; -15°C +50°C / 3000m
Standards	IEC 255, IEC 947, IEC 801, EN 50081-2
	CE cULus LISTED

Settings and curves,see pages 24 to 29.

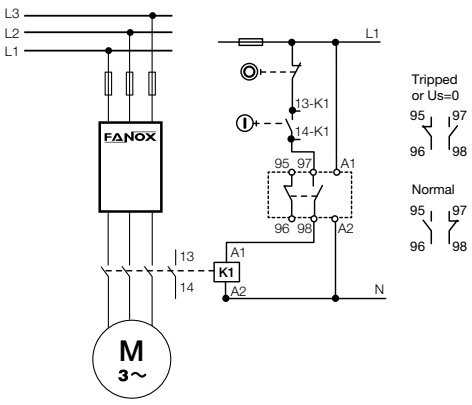
DIMENSIONS C RELAY (mm)



DIMENSIONS ODC MODULE (mm)



WIRING DIAGRAMS (mm)



INTEGRAL MOTOR PROTECTION

- ***For 3-phase motors from 1 to 630 A and over. Cable feed through relay.***
- ***Precise motor heating and cooling memory, reproduces its thermal image.***
- ***Immediate detection of phase loss (3 s), even at reduced load.***
- ***Visual indication of tripping cause.***

For motors (1 to 630 A and over), in applications such as surface mounted pumps, compressors, mixers, ventilators, elevators, cranes, industrial refrigeration and in general for those motors requiring complete protection where over temperature (by means of PTC sensor) and incorrect phase sequence protection is required.

Its 7 trip classes cover all types of starting or working cycles.

EXTERNAL DISPLAY MODULE

By means of this plug-in optional accessory, the relay status can be seen and reset from the exterior of the electrical panel board.

Easy to install. Size of a Ø22 mm push button.

Suitable for motor control centres (MCC) and panel boards.

GL

PROTECTION FUNCTIONS

- I> Overload
- Phase imbalance or phase loss
- Overtemperature
- Phase sequence

ODGL

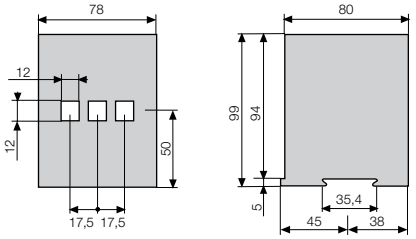
Models	Code	Relay type
ODGL	**12535**	GL

MODELS			GL 16	GL 40	GL 90
Adjustment range Motor 400 V 50/60 Hz	I_B (A)		4 - 16,7	15 - 40,5	40 - 91
	CV		3 - 10	10 - 25	30 - 60
	kW		2,2 - 7,5	7,5 - 18,5	22 - 45
Code: according to the relay voltage supply (+15% -10%) ac: 50/60 Hz	230 Vac	single phase	**11303**	**11323**	**11343**
	115 Vac	single phase	**11302**	**11322**	**11342**
	24 Vac, dc	single phase	**11300**	**11320**	**11340**
For I_N of the motor below the minimum setting I_B			Pass the cables several times (n) through the holes in the relay I_B = n x I_N		
For I_N of the motor below the minimum setting I_B			Use 3 CT .../5 and the relay GL16 and pass the secondary through the holes		
External display module (optional)			ODGL		

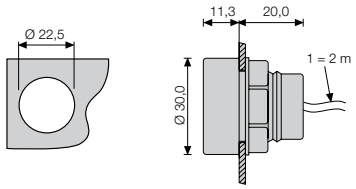
CHARACTERISTICS	
Thermal memory / Overload trip	Yes / From 1,1 x I_B
Maximum motor nominal voltage	1000 Vac
Trip classes (IEC 947-4-1)	5 - 10 - 15 - 20 - 25 - 30 - 35
Phase sequence protection	ON ■□ OFF Actuates during the motor start
Phase imbalance protection	Over 40%. Tripping time < 3s
PTC Min/max cold resist.-Average trip / reset resist.	25Ω / 1500Ω - 3600Ω / 1800Ω
Reset mode	Manual and remote
Signalling LED's	4 LED's: ON + I> + +
Output contacts	1 relay with 1 NA + 1 NC
Switching power	I_{th}: 5A; AC15 - 250V - 2A; DC13 - 30V - 2A
Terminals: Max. section / screw torque	2,5 mm², No. 22 - 12AWG / 20Ncm, 1.8 LB - IN
Power consumption	2,5 VA (115-230 Vac) - 1,5 W (24 Vdc)
Protection degree / weight / mounting	IP20 / 0,5 kg / DIN rail
Storage temperature	-30°C +70°C
Operation temperature / max. altitude	-15°C +60°C / 1000m ; -15°C +50°C / 3000m
Standards	IEC 255, IEC 947, IEC 801, EN 50081-2
	CE c UL us LISTED

Settings and curves,see pages 24 to 29.

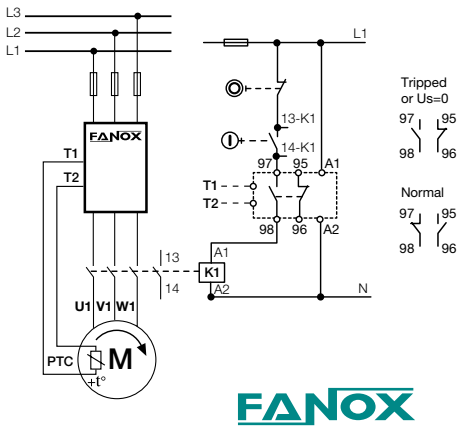
DIMENSIONS GL RELAY (mm)



DIMENSIONS ODGL MODULE (mm)



WIRING DIAGRAMS (mm)



FANOX
protection & control

MOTOR PROTECTION IN EXPLOSIVE OR HAZARDOUS AREAS

- ***Certificates for use as category 3 - Directive ATEX 94/9/EC.***
- ***For 3-phase motors up to 1000 Vac.***
- ***Currents from 1,5 to 630 A and over.***
- ***With thermal memory.***
- ***Visual indication of tripping cause.***

These relays are applicable for EEx e motors with intensities up to 630A and above, which run in potentially explosive areas such as petrochemical industries, plastic factories, etc. The relay is installed outside the explosive area.

RELAY TO BE USED WITH THE EXTERNAL DISPLAY MODULE

With the same features and applications as the G17 relay, the BG17 relay incorporates an external display module which shows the status of the relay and allows it to be reset from outside of the panel or the motor control center (MCC).

As the BG17 is designed for use with the ODG display module, it does not heve LED's in the front of the relay.

G

BG

PROTECTION FUNCTIONS

- I> Overload
- Phase imbalance or phase loss
- Overtemperature

ATEX

Relays G and BG are certified for use as category 3, with ATEX marked:

CE Ex II (3) G EEx e

PTB approval:

G and BG relays have been approved by the **Physikalisch-Technische Bundesanstalt-PTB** for the protection of EEx e protected explosion motors (DIN EN 50019 / DIN VDE 0170 /DIN VDE 0171 part 6) according to the stipulations and requirements of PTB. PTB report no. PTB Ex 3.43-30004/00.

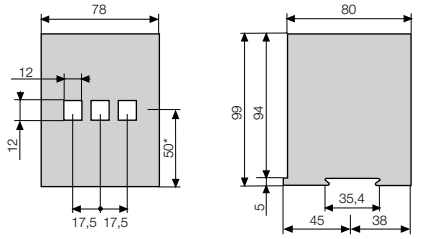
Ex PTB Ex 3.43 - 30004/00

MODELS			G 17	BG 17
Adjustment range Motor 400 V 50/60 Hz	I_B (A)		5 - 17,7	
	CV		3 - 10	
	kW		2,2 - 7,5	
Code: according to the relay voltage supply (+15% -10%) ac: 50/60 Hz	230 Vac	single phase	**10723**	**10733**
	115 Vac	single phase	**10722**	**10732**
	24 Vdc, ac		**10720**	**10730**
For I_N of the motor below the minimum setting I_B			Pass the cables several times (n) through the holes in the relay I_B = n x I_N	
For I_N of the motor above the maximum setting I_B			Use 3 CT's .../5 and pass their secondary twice (n=2) through the relay holes	
External display module / Code no.			No	**ODG / 12505**

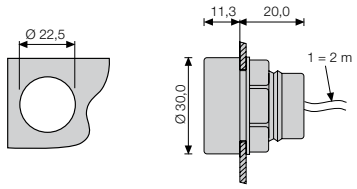
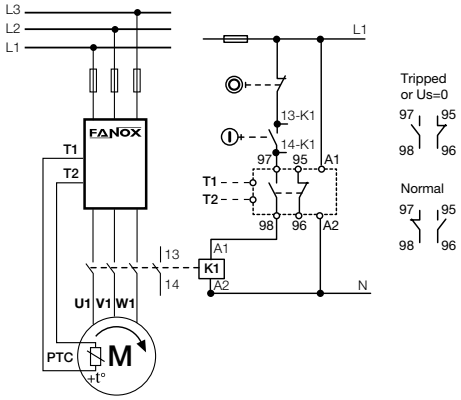
CHARACTERISTICS	
Thermal memory / Overload trip	Yes / From 1,1 x I_B
Maximum motor nominal voltage	1000 V
15 adjustable tripping curves	Cold tripping times at 6 x I_B from 2 to 30s
Phase imbalance protection	Over 40%. Tripping time < 3s
PTC min/max cold resist. / Average trip resistance	100 Ω / 1500 Ω - 2750 Ω
Reset mode	Manual and remote
Signalling LED's	4 LED's: ON + one for each protection
Alimentación auxiliar monofásica • Voltage Us • Frequency • Consumption • Protection fuse	 115 - 230 Vac (+15% -6%) / 24 Vdc (±10%) 50/60 Hz (from 49 to 61,2 Hz) 2,5 VA (115 - 230 Vac) / 1,5 W (24 Vdc) GL 6 A
Output contacts • Switching capacity in abnormal conditions • Short-circuit resistance	1 relay with 1 NO + 1 NC I_{th}: 5A; AC15 - 250V - 2A; DC13 - 30V - 2A 1000 A
Terminals max. section / Screw torque	2,5 mm², No. 22 - 12AWG / 20Ncm, 1.8 LB - IN
Protection degree / weight / mounting	IP20 / 0,5 kg / DIN rail
Operation temperature	-30°C +70°C
Temperatura de funcionamiento	-15°C +60°C
Standards CE cULus LISTED	EN 50081-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 60529, EN 60947-5-1, UL 508 EN 60947-1, EN 60947-4-1, EN 60255-8, EN 954-1, EN 60079-14, EN 60034-1, EN 50019

Settings and curves,see pages 24 to 29.

DIMENSIONS G and BG RELAYS (mm)



DIMENSIONS ODG MODULE (mm)



WIRING DIAGRAM (mm)