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# INDICATORS, ALARM UNITS



**GEFRAN**  
BEYOND TECHNOLOGY



# GEFRAN

BEYOND TECHNOLOGY

Over fifty years of experience, an organisation with a strong focus on the customer's needs and constant technological innovation have made Gefran a benchmark in the design and production of sensors, systems and components for industrial process automation and control. Expertise, flexibility and process quality are the factors that distinguish Gefran in the production of integrated tools and systems for specific applications in various industrial fields, with consolidated know-how in the plastics, mobile hydraulics, heating and lift sectors.

Technology, innovation and versatility represent the catalogue's added value, in addition to the ability to create specific application solutions in association with the world's leading machine manufacturers.

## APPLICATION SECTORS



Based on its consolidated experience supplying different types of sensors and expertise reading various process variables, Gefran offers a series of solutions for all applications requiring brilliant, and accurate display of process variables combined with alarm diagnostics. Gefran offers a wide range of products that are scalable in terms of both performance and features, indispensable for management of numerous types of process variables used in operation of automatic machinery.

Not only precise display of process variables, but also interception of alarm thresholds with visual signalling and control output. A necessary condition for managing machine fault conditions and activating the appropriate intervention and maintenance actions.



PLASTICS



MATERIAL TESTS



WEIGHING SYSTEMS



TEST BENCHES



WOODWORKING  
MACHINES



MARBLE PROCESSING  
MACHINES



CALENDERING



METALWORKING



FOOD INDUSTRY



PLASTICS EXTRUSION



WATER TREATMENT



PACKAGING



INJECTION  
BLOW MOULDING



CLIMATE  
CELLS



MEDICAL  
LABORATORIES

## ALL GEFRAN INDICATORS FEATURE

### INPUTS

Configurable universal analogue inputs for main variables and auxiliary analogue/digital inputs for additional functions

### KEYBOARD

Keyboard for rapid setting and diagnostics.

### LEDS

LEDs for constant display of main instrument states.

### DISPLAY

Clear and immediate display of main variables.

### IP65

Elevated front panel protection without accessories.

### OUTPUTS

Various types of outputs for alarm management, input retransmission.

### FLEXIBILITY

Connection to process via various types of sensors.

### SHARED SOFTWARE

All models use the same software.

### READY TO USE

Pre-installed software for zero start-up time.

### EASY TO USE

Immediate and intuitive parameter settings.

## UNIVERSAL MODELS

Gefran indicators and alarm units feature flexibility, simplicity, and compactness. Available in versions measuring 72x36...48x48 and 48x96, they indicate variables such as temperature, displacement, and force.



## HIGH PERFORMANCE MODELS

Gefran's 2400 series of indicators provide speed and precision, ensuring the measurement and setpoints of pressures (direct and differential), displacements, forces, temperatures, and process variables read by amplified and not amplified sensors.

### CALCULATION CAPACITY

- Ability to compare input variables, engineer measurements, display the result.
- Use of results of math functions such as value of process/ alarm limit/retransmission output.

### DOUBLE CHANNEL

- Two main universal analogue inputs for two simultaneous acquisitions with a single instrument.
- Direct Power Supply and acquisition of up to 6 load cells

### EASY CALIBRATION






- Calibration of the input by simply editing the sensor calibration data printed on the label.
- Standard calibration with specific menu



## LIMIT SWITCH MODELS

Dedicated devices for the Maximum Temperature Safety Alarm function in heat treatment processes. In two sizes, 48x48 and 48x96, Factory Mutual certified and ready to use.



		72X36	48X48 (1/16 DIN)
HIGH-PERFORMANCE MODELS	HIGH SPEED HIGH RESOLUTION		
	LIMIT SWITCH MODELS		 650L
MULTICHANNEL MODELS			
UNIVERSAL MODELS	RPM FREQUENCY		
	V/Ac		 4A48 40A48
	PRESSURE FORCE POSITION		 40B48
	TEMPERATURE LINEAR POTENTIOMETERS	 4T72 40T72	 4T48 40T48

48X96 (1/8 DIN)	96X96 (1/4 DIN)	
 2400 (4 CHANNELS)		CLIMATIC CHAMBERS, DOSERS, PRESSURE , TEST BENCHES, LABORATORIES
 1250L		OVENS, HEAT TREATMENTS
 2308 °C/°F BAR 0...10V 4...20MA (8 CHANNELS)	 40TB °C/°F BAR 0...10V 4...20MA (8 CHANNELS)	PLASTICS, PLANTS
 40F96		PLASTICS, VARIOUS
 4A96 40A96		PLASTICS, VARIOUS
 4B96 40B96		PLASTICS, PACKAGING
 4T96 40T96		PLASTICS, PACKAGING, WOOD, METAL, OVENS

# INDICATORS

MODEL	4T 72 INDICATOR	4T 48 / 4T 96 INDICATOR
FRONT PANEL DIMENSIONS	72 x 36mm	48 x 48mm (1/16 DIN) 96 x 48mm (1/8 DIN)
NUMBER OF ANALOG INPUTS	1	
SAMPLING TIME	120 - 60 - 30 - 15msec	
PRECISION	0,2% ±1 digit	
MAXIMUM RESOLUTION	8000 pti	16000 pti
INPUT FILTER	0...20,0 sec + display hysteresis 0...9,9 scale points	
ZERO OFFSET	Settable by user over entire scale range	
APPLICATION	Indicator of physical quantities -1999...+9999 (with or without decimal point)	
THERMOCOUPLES	J, K, T, E, N, S, R, B, L, Gost, U, G, D, C, custom, with scales in °C or °F (IEC 584)	
COLD JUNCTION COMPENSATION	Internal, with automatic compensation	
RESISTANCE THERMOMETER	Pt100 DIN43710 (3 fili), Pt100 Japan, custom	
THERMISTORS	PTC, NTC (1K/25°C), custom	
LINEAR	0...20mA, 4...20mA, 0...60mV, 0...1V, 0...5V, 0...10V, possible linearization on 32 segments	
POTENTIOMETER	-	(R77 version) Input from potentiometer (min 100Ω) powered by instrument 1,2Vdc
PRESSURE PROBE LOAD CELLS	-	
ALTERNATING SINUSOIDAL (CURRENT TRANSFORMER)	-	
RANGES	-	
APPLICATION	-	
POWER SUPPLY FOR TRANSMITTER	18Vdc ±10% non-stabilized, 50mA 1,2Vdc for potentiometer >100Ω	24Vdc ±10% non-stabilized, 50mA 15Vdc for transmitter; 50mA 1,2Vdc for potentiometer >100Ω
POWER SUPPLY	11...27Vdc, 18...27Vac ±10% 50/60Hz, not isolated from senso	11...27Vac/dc, 100...240Vac/dc; ±10% 50/60Hz
FACEPLATE PROTECTION LEVEL	IP65	
CERTIFICATIONS	CE, EAC	UL, CE, EAC

## INDICATORS, ALARM UNITS

4A 48 / 4A 96 ALTERNATING CURRENT AND VOLTAGE INDICATOR	4B 96 PRESSURE, FORCE, POSITION INDICATOR
48 x 48mm (1/16 DIN) 96 x 48mm (1/8 DIN)	96 x 48mm (1/8 DIN)
1	
120msec	120 - 60 - 30 - 15msec
0,2% f.s. ±1 digit (per 2/20Vac, 20/50mAac, 1Aac) 0,5% f.s. ±1 digit (per 200Vac, 500Vac, 5Aac)	0,2% ±1 digit
8000 pti	16000 pti
0...20,0 sec + display hysteresis 0...9,9 scale points	
Settable by user over entire scale range	
Indicator of physical quantities -1999...+9999 (with or without decimal point)	Indicator of physical quantities -1999...+9999 (resolution 1 digit) -19990...+99990 (resolution 10 digit) Configurable decimal point position
-	-
-	-
-	-
-	-
-	-
-	Input from potentiometer (min 100Ω) powered by instrument 1,2Vdc possible linearization on 32 segments
-	Autorange sensitivity 1,5...3,3mV/V possible linearization on 32 segments
Direct non-isolated input or via transformer in voltage or AC	-
0...2/0...20/0...200/0...500Vac 0...20/0...50/0...200mAac, 0...1/0...5Aac	-
Voltmeter, Ammeter	-
-	1,2Vdc for potentiometer 5-10Vdc/120mA; 15Vdc/50mA 24Vdc non stabilized, 50mA
11...27Vac/dc, 100...240Vac/dc; ±10% 50/60Hz	
IP65	
UL (4A96), CE, EAC	UL, CE, EAC

# ALARM UNITS

MODEL	40T 72 ALARM UNIT	40T 48 / 40T 96 ALARM UNIT
FRONT PANEL DIMENSIONS	72 x 36mm	48 x 48mm (1/16 DIN) / 96 x 48mm (1/8 DIN)
NUMBER OF ANALOG INPUTS	1	
SAMPLING TIME	120 - 60 - 30 - 15msec	
PRECISION	0,2% ±1 digit	
MAXIMUM RESOLUTION	8000 pti	16000 pti
INPUT FILTER	0...20,0 sec + display hysteresis 0...9,9 scale points	
ZERO OFFSET	Settable by user over entire scale range	
APPLICATION	Indicator of physical quantities -1999...+9999 (with or without decimal point)	
THERMOCOUPLES	J, K, T, E, N, S, R, B, LGost, U, G, D, C, custom with scales in °C o °F (IEC 584)	
COLD JUNCTION COMPENSATION	Internal, with automatic compensation	
RESISTANCE THERMOMETER	Pt100 DIN43710 (3-wires), Pt100 Japan, custom	
THERMISTORS	PTC, NTC (1K/25°C), custom	
LINEAR	0...20mA, 4...20mA, 0...60mV, 0...1V, 0...5V, 0...10V - Possible linearization on 32 segments	
POTENTIOMETER	-	(R77 version) Input from potentiometer( min 100Ω) powered by instrument 1,2Vdc possible linearization on 32 segments
PRESSURE PROBE LOAD CELLS	-	
ALTERNATING SINUSOIDAL (CURRENT TRANSFORMER)	-	
RANGES	-	
APPLICATION	-	
DIGITAL COMMUNICATION	-	RS485, 1200...19200 baud MODBUS RTU, CENCAL GEFRAN
DIGITAL INPUT	Optoisolated passive PNP isolated 1500V	
APPLICATION	Tare zero, reset alarm latches, Hold, Flash	
OUTPUTS	max 3	max 4
RELAY	max 5A, 250V resistive load cosφ = 1	
APPLICATION	Alarm units, alarms, on/off control	
LOGIC	With 18Vdc/dc power supply Rout 560Ω (6V/20mA)	24V (10V min / 20mA max)
APPLICATION	Interception, alarm, On/Off Control	
TRIAC	24...240Vac ± 10% 2A max	
APPLICATION	Alarm units, alarms, on/off control	
ANALOG	4...20mA (R max 60Ω) res. 12bit, not isolated	0...10V, 4...20mA (Rmax = 500Ω) res. 12bit, not isolated
APPLICATION	Retransmission of variable	
POWER SUPPLY SENSOR OR TRANSMITTER	18Vdc; 50mA	24Vdc ±10% non-stabilized, 50mA 15Vdc for transmitter, 50mA 1,2V for potentiometer
POWER SUPPLY	11...27Vdc, 18...27Vac; ±10% 50/60Hz not isolated from sensor	11...27Vac/dc, 100...240Vac/dc; ±10% 50/60Hz
FACEPLATE PROTECTION LEVEL	IP65	
CERTIFICATIONS	CE, EAC	UL, CE, EAC

## INDICATORS, ALARM UNITS

40A 48 / 40A 96 ALTERNATING CURRENT AND VOLTAGE ALARM UNIT	40B 48 ALTERNATING CURRENT AND VOLTAGE ALARM UNIT	40B 96 PRESSURE, FORCE, POSITION ALARM UNIT
48 x 48mm (1/16 DIN) / 96 x 48mm (1/8 DIN)	48 x 48mm (1/16 DIN)	96 x 48mm (1/8 DIN)
1		
120msec	120 - 60 - 30 - 15msec	
0,2% f.s. ±1 digit (per 2/20Vac, 20/50mAac, 1Aac) 0,5% f.s. ±1 digit (per 200Vac, 500Vac, 5Aac)	0,2% ±1 digit	
8000 pti		16000 pti
0...20,0 sec + display hysteresis 0...9,9 scale points		
Settable by user over entire scale range		
Indicator of physical quantities -1999...+9999 (with or without decimal point)	Indicator of physical quantities -1999...+9999 (resolution 1 digit) -19990...+99990 (resolution 10 digit) Configurable decimal point position	
-	-	
-	-	
-	-	
-	-	
-	Input from potentiometer (min 100Ω) powered by instrument 1,2Vdc possible linearization on 32 segments	
-	Autorange sensitivity 1,5...3,3mV/V possible linearization on 32 segments	
Direct non-isolated input or via transformer in voltage or AC	-	
0...2/0...20/0...200/0...500Vac 0...20/0...50/0...200mAac, 0...1/0...5Aac	-	
Voltmeter, Ammeter	-	
-	-	RS485, 1200...19200 baud MODBUS RTU
Optoisolated passive PNP Isolated 1500V		
Tare zero, reset alarm latches, Hold, Flash		
max 3		max 4
max 5A, 250V resistive load cosφ = 1		
Alarm units, alarms	Interception, alarm, On/Off Control	
11V Rout 220Ω (6V/20mA)		24Vdc (10V min /20mA max)
Alarm units, alarms	Interception, alarm, On/Off Control	
24...240Vac ± 10% 3A max (for mod.40A96)	-	24...240Vac ± 10% 1A max
Alarm units, alarms	Alarm units, alarms	
4...20mA (R max 150Ω) resolution 12bit, not isolated		0...10V, 4...20mA (Rmax 500Ω) resolution 12bit, not isolated
Retransmission of variable		
-	1,2Vdc for potentiometer, 5-10Vdc/120mA; 15-24Vdc/50mA	
11...27Vac/dc, 100...240Vac/dc; ±10% 50/60Hz		
IP65		
UL (40A96), EAC	CE, EAC	UL, CE, EAC

# ALARM UNITS

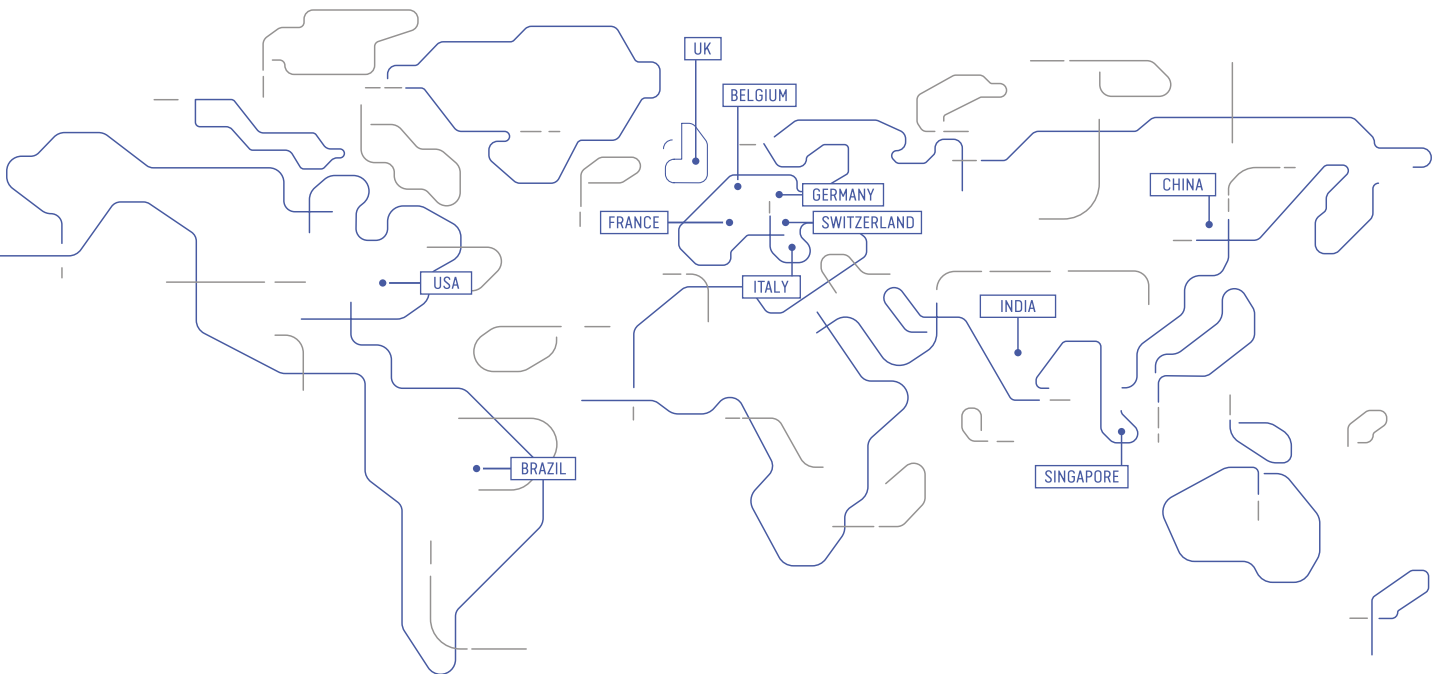
MODEL	40TB TEMPERATURE AND PRESSURE ALARM UNIT	40F 96 FREQUENCY INDICATOR
FRONT PANEL DIMENSIONS	96 x 96mm (1/4 DIN)	96 x 48mm (1/8 DIN)
NUMBER OF ANALOG INPUTS	2	1 mechanical contact, logic or alternating voltage drive
SAMPLING TIME	120 - 60 - 30 - 15msec	Configurable frequency: 100KHz max.
PRECISION	0,2% ±1 digit	0,1% in autorange mode ±1 digit with fixed f.s.
MAXIMUM RESOLUTION	16000 pti	-
INPUT FILTER	0...20,0 sec + display hysteresis 0...9,9 scale points	Fixed 100Hz, may be cut out
ZERO OFFSET	Settable by user over entire scale range	
APPLICATION	Indicator of frequencies -1999...+9999 (settable decimal point)	Indicator of frequencies 0...+9999 (automatic or settable decimal point)
THERMOCOUPLES	J, K, T, E, N, S, R, B, L Gost, U, G, D, C, Custom with scale in °C or °F (IEC 584)	
COLD JUNCTION COMPENSATION	Internal, with automatic compensation	-
RESISTANCE THERMOMETER	Pt100 DIN43710 (3-wires), Pt100 Japan	-
THERMISTORS	PTC, NTC (1K/25°C)	-
LINEAR	0...20mA, 4...20mA, 0...60mV, 0...1V, 0...5V, 0...10V Ri > 500Ω for voltage signals ≤ 1V Ri > 20KΩ for voltage signals > 1V Ri = 50Ω for current signals Possible linearization on 32 segments	-
POTENTIOMETER	Input from potentiometer (min 100Ω) powered by instrument 1,2Vdc	-
PRESSURE PROBE LOAD CELLS	Autorange sensitivity 1,5...3,3mV/V	-
FREQUENCY	-	Input from inductive or capacitive proximity encoder NAMUR 2 or 3-wires limit switch. Input in alternating voltage 0,5...500V
TYPE	-	Input frequency ranges ≤ 20KHz
DISPLAY	-	Frequency meter with or without automatic scale and decimal point change, input frequency selectable in ranges: 9.999; 99.99; 999.9; 9999
APPLICATION	-	Revolution counter or frequency meter with programmable sampling time
DIGITAL INPUT	2 inputs from voltage-free contact	Optoisolated passive PNP isolated 1500V
APPLICATION	Tare zero, reset alarm latches, Hold, Flash	
USCITE	max 3	
RELE	max 5A, 250V resistive load cosφ = 1	
APPLICATION	Alarm units, alarms	
LOGIC	-	11V Rout 220Ω(6V/20mA)
APPLICATION	-	Alarm units, alarms
TRIAC	-	24...240V ±10% 3A max.
APPLICATION	-	Alarm units, alarms
ANALOG	2 outputs: 0-10V, 0/4-20mA is.1500V, resol.12 bit	4...20mA (R max 150Ω) resolution 12bit non isolated
APPLICATION	Configurabile	Ritrasmissione della variabile
DIGITAL COMMUNICATION	RS485, RS232 1200...19200 baud MODBUS RTU	-
SENSOR OR TRANSMITTER POWER SUPPLY	1,2Vdc for potentiometer > 100Ω; 5,10Vdc max. 120mA for strain gauge 15Vdc max/80mA; 24Vdc max 50mA for transmitter 2-wires	24Vdc; ±10% not stabilized 50mA max 5Vdc/120mA; 12Vdc/50mA max
POWER SUPPLY	100...240Vac/dc ±10% 20...27Vac/dc ±10% 50/60Hz	11...27Vac/dc, 100...240Vac/dc; ±10% 50/60Hz
FACEPLATE PROTECTION LEVEL	IP65	
CERTIFICATIONS	UL, CE, EAC	

## INDICATORS, ALARM UNITS

2400 FAST INDICATOR	650L / 1250L LIMIT SWITCH
96 x 48mm (1/8 DIN) - 96 x 48mm (1/8 DIN)	48x48mm (1/16 DIN) / 48x96mm (1/8 DIN)
2 Main, 2 Auxiliaries	1
2 msec (ch1, ch2) 10 msec (ch3, ch4)	120-60 ms
0,1% f.s. ±1digit (0,2% f.s. per TC)	TC inputs: Calibration accuracy: < +/- (0,25% of reading value in °C +0,1°C) Cold junction accuracy: < +/- 1,5°C a 25°C room temperature RTD input: Calibration accuracy: < +/- (0,15% del valore letto in °C +0,4°C) Temperature drift: < +/- (0,005% of reading value in °C +0,015°C)/°C from 25°C room temperature
100000 pti	256.000 pti
0,0...20,00 sec input reading, 0,0...9,9 sec display	Digital filter 0,0...20,0 s
Settable by user over entire scale range	Settable by user over entire scale range
Indicator of pressure, forces, weight, shift, physical quantities -19999...+99999 settable decimal point	Max Temperature Limit Alarm, with threshold protected by password
J, K, R, S, T con scala in °C o °F	J, K, R, S, T, C, D, B, E, L, LGOST, U, G, N, Pt20Rh-Pt40Rh, Custom
Internal / external	Internal, with automatic compensation
Pt100 2/3-wires, scale in °C or °F	PT100, JPT100, 2/3-wires, scale in °C or °F
-	-
Strain-gauge: 5/10Vdc 200mA, 350Ω Potentiometer: ≥100Ω, Ri >10MΩ @ 2,5Vdc DcLinear: 0/4...20mA (Ri = 50Ω) ≤±100mV, Ri > 10MΩ; ±1V...±10V, Ri > 2MΩ); Auxiliary input: 0...10V (Ri ≥ 2MΩ); 0/4...20mA (Ri = 50Ω) Possible linearization on 64 segments	0...60 mV input impedance (Ri): > 70 kΩ 0...1 V input impedance (Ri): > 15 kΩ 0...5 V / 0...10 V input impedance (Ri): > 30 kΩ 0/4...20 mA input impedance (Ri): 50 Ω Linearization: linear or custom
≥100Ω, Ri > 10MΩ	-
Strain-gauge 350Ω; sensitivity 1,5...4mV/V	-
-	-
-	-
-	-
-	-
2, NPN, PNP, optoisolated, configurable function	NPN, PNP (nr.1 mod. 650L) (nr.5 mod. 1250L)
Reset, Zero, Tare, Calibration, Loc/Rem, Hold, Flash	Alarm acknowledge, Peak value reset, Reset time totalizer
max 4; can be expanded up to 10 relay or logic outputs with MD82	max 4
5A/250V, contacts, resistive load cosφ = 1	5A/250Vac, resistive load cos-φ=1
Alarm units, alarms	Max temperature Limit Alarm
24Vdc (20mA, max.12V)	-
Alarm units, alarms	-
-	-
-	-
Isolated 1500V, 0/4...20mA, Rmax = 500Ω, ±10V, resolution 0,03%, configurable via software	0-10V, 0/4-20mA, resolution 12 bit, isolated from main input
PV, retransmission, auxiliary inputs, peak	-
Isolated RS485 / RS232 (max 115200 baud), protocol MOD BUS RTU / PROFIBUS DP	Isolated RS485 (1200/115200 baud), Modbus RTU
Isolated 1500V, 5, 10Vdc/200mA o 24Vdc, ±5% 100mA	-
11...27Vac/dc ±10%; 100...240Vac/dc ±10% 50/60Hz, 10VA max., internal fuse	100...240 VAC/VDC ±10%, 50/60 Hz (on request 20...27 VAC/VDC ±10%) 5 W max
IP65	
UL, CE, EAC	UL, FM, CE



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