

# **Certificate of Compliance**

**Certificate:** 1132623 (LR 82598)

**Project:** 2567317

Master Contract: 160686

Date Issued:

November 5, 2012

Issued to:

Endress + Hauser Flowtec AG

Kagenstrasse 7 Reinach, Basel Land 4153 Switzerland Attention: Utz Dette

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.



Aísha Sreenath

Issued by: Aisha Sreenath

## **PRODUCTS**

CLASS 2258 03 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non -Incendive Systems - For Hazardous Locations

Class I, Zone 1, Group IIC:

Class I, Division 1, Groups A, B, C and D; Class II, Division 1, Groups E, F and G; Class III; Type 4X:

• PROMASS 40/80/83/84A/E/F/H/I/M/O/P/S/X\*\*-\*\*\*\*\*N/O\*\*\*\*+#\*\*# Mass Flowmeter. Input rated 16-62Vdc, 20-55Vac, 85-260Vac, 50/60Hz, 15VA. Relay contacts rated 42Vdc/100mA and 30Vac/500mA. Explosion-proof with Intrinsically Safe sensor circuits and signal output circuits, Temperature Codes and Maximum Ambient Temperatures per Control Drawing FES0049. Dual Seal Device.



Certificate:	1132623 (LR 82598)	Master Contract:	160686
Project:	2567317	Date Issued:	November 5, 2012

• Cubemass DCI 8C\*\*\*-**C3/84**\*\*\*\*\*\*+#\*\*# Mass Flowmeter. Input rated 16-62Vdc, 20-55Vac, 85-260Vac, 50/60Hz, 15VA. Relay contacts rated 42Vdc/100mA and 30Vac/500mA. Explosion-proof with Explosion-proof with Intrinsically Safe sensor circuits and signal output circuits, Temperature Codes and Maximum Ambient Temperatures per Control Drawing FES0152. Dual Seal Device.

Note: The asterisk "\*" in the above model suffixes may be any number or letter representing specific options. The suffix "\*\*"in the model Series represents any combination or multiple of double number and/or letter; may be "+" or "#".

#### Class I, Zone 1, Group IIB+H2:

#### Class I, Division 1, Groups B, C and D; Class II, Division 1, Groups E, F and G; Class III; Type 4X:

• PROMASS 40/80/83/84A/E/F/H/I/M/O/P/S/X\*\*-\*\*\*\*N/O\*\*\*\*+#\*\*# Mass Flowmeter. Input rated 16-62Vdc, 20-55Vac, 85-260Vac, 50/60Hz, 15VA. Relay contacts rated 42Vdc/100mA and 30Vac/500mA. Explosion-proof with Intrinsically Safe sensor circuits and signal output circuits, Temperature Codes and Maximum Ambient Temperatures per Control Drawing FES0049. FACTORY SEALED. Dual Seal Device.

• CNGmass DCI 8\*F\*\*-\*\*\*\*\***M/N/8**\*\*\*\*+#\*\*# Mass Flowmeter. Input rated 16-62Vdc, 20-55Vac, 85-260Vac, 50/60Hz, 15VA. Relay contacts rated 42Vdc/100mA and 30Vac/500mA. Explosion-proof with Intrinsically Safe sensor circuits and signal output circuits, Temperature Codes and Maximum Ambient Temperatures per Control Drawing FES0151. FACTORY SEALED. Dual Seal Device.

• Cubemass DCI 8C\*\*\*-**C3/84**\*\*\*\*\*\*\*##Mass Flowmeter. Input rated 16-62Vdc, 20-55Vac, 85-260Vac, 50/60Hz, 15VA. Relay contacts rated 42Vdc/100mA and 30Vac/500mA. Explosion-proof with Intrinsically Safe sensor circuits and signal output circuits, Temperature Codes and Maximum Ambient Temperatures per Control Drawing FES0152. FACTORY SEALED. Dual Seal Device.

Note: The asterisk "\*" in the above model suffixes may be any number or letter representing specific options. The suffix "\*\*"in the model Series represents any combination or multiple of double number and/or letter; may be "+" or "#".



**Certificate:** 1132623 (LR 82598)

**Project:** 2567317

## Class I, Zone 1, Group IIB:

## Class I, Division 1, Groups C and D; Class II, Division 1, Groups E, F and G; Class III; Type 4X:

• PROMASS 40/80/83/84A/E/F/H/I/M/O/P/S/X\*\*-\*\*\*\*\***P**\*\*\*\***P**\*\*\*\*# Mass Flowmeter. Input rated 16-62Vdc, 20-55Vac, 85-260Vac, 50/60Hz, 15VA. Relay contacts rated 42Vdc/100mA and 30Vac/500mA. Explosion-proof with Intrinsically Safe sensor circuits and signal output circuits, Temperature Codes and Maximum Ambient Temperatures per Control Drawing FES0049. FACTORY SEALED. Dual Seal Device.

Note: The asterisk "\*" in the above model suffixes may be any number or letter representing specific options. The suffix "\*\*"in the model Series represents any combination or multiple of double number and/or letter; may be "+" or "#".

#### Class I, Zone 2, Group IIC:

## Class I, Division 2, Groups A, B, C and D; Class II, Division 1, Groups E, F and G; Class III; Type 4X:

• PROMASS 40/80/83/84A/E/F/H/I/M/O/P/S/X\*\*-\*\*\*\***R**\*\*\*\*\***R**\*\*\*\*# Mass Flowmeter. Transmitter Input rated 16-62Vdc, 20-55Vac, 85-260Vac, 50/60Hz, 15VA. Transmitter Relay contacts rated 42Vdc/100mA and 30Vac/500mA. Non-incendive circuits, Temperature Codes and Maximum Ambient Temepratures per Control Drawing FES0051. Dual Seal Device.

Note: The asterisk "\*" in the above model suffixes may be any number or letter representing specific options. The suffix "\*\*"in the model Series represents any combination or multiple of double number and/or letter; may be "+" or "#".

#### CLASS 2258 83 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non-Incendive Systems - For Hazardous Locations - CERTIFIED TO U.S. STANDARDS

## Class I, Division 1, Groups A, B, C and D; Class II, Division 1, Groups E, F and G; Class III; Type 4X:

• CNGmass DCI 8\*F\*\*-\*\*\*\*\***M/N/8**\*\*\*\*+#\*\*# Mass Flowmeter. Input rated 16-62Vdc, 20-55Vac, 85-260Vac, 50/60Hz, 15VA. Relay contacts rated 42Vdc/100mA and 30Vac/500mA. Explosion-proof with



**Certificate:** 1132623 (LR 82598)

**Project:** 2567317

Master Contract:160686Date Issued:November 5, 2012

Intrinsically Safe sensor circuits and signal output circuits, Temperature Codes and Maximum Ambient Temperatures per Control Drawing FES0151. Dual Seal Device.

• Cubemass DCI 8C\*\*\*-**C3/84**\*\*\*\*\*\*\*+#\*\*#Mass Flowmeter. Input rated 16-62Vdc, 20-55Vac, 85-260Vac, 50/60Hz, 15VA. Relay contacts rated 42Vdc/100mA and 30Vac/500mA. Explosion-proof with Intrinsically Safe sensor circuits and signal output circuits, Temperature Codes and Maximum Ambient Temperatures per Control Drawing FES0152. Dual Seal Device.

Note: The asterisk "\*" in the above model suffixes may be any number or letter representing specific options. The suffix "\*\*"in the model Series represents any combination or multiple of double number and/or letter; may be "+" or "#".

## Class I, Division 1, Groups B, C and D; Class II, Division 1, Groups E, F and G; Class III; Type 4X:

• CNGmass DCI 8\*F\*-\*\*\*\***M/N/8**\*\*\*\*+#\*\*# Mass Flowmeter. Input rated 16-62Vdc, 20-55Vac, 85-260Vac, 50/60Hz, 15VA. Relay contacts rated 42Vdc/100mA and 30Vac/500mA. Explosion-proof with Intrinsically Safe sensor circuits and signal output circuits, Temperature Codes and Maximum Ambient Temperatures per Control Drawing FES0151. FACTORY SEALED. Dual Seal Device.

• Cubemass DCI 8C\*\*\*-**C3/84**\*\*\*\*\*\*\*###Mass Flowmeter. Input rated 16-62Vdc, 20-55Vac, 85-260Vac, 50/60Hz, 15VA. Relay contacts rated 42Vdc/100mA and 30Vac/500mA. Explosion-proof with Intrinsically Safe sensor circuits and signal output circuits, Temperature Codes and Maximum Ambient Temperatures per Control Drawing FES0152. FACTORY SEALED. Dual Seal Device.

Note: The asterisk "\*" in the above model suffixes may be any number or letter representing specific options. The suffix "\*\*" in the model Series represents any combination or multiple of double number and/or letter; may be "+" or "#".

#### APPLICABLE REQUIREMENTS

CSA Std C22.2 No. 0-M1991 - General Requirements - Canadian Electrical Code

ANSI/ISA-12.27.01-2003 - Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids

CSA Std C22.2 No. 25-1966 - Enclosures for Use in Class II, Groups E, F and G Hazardous Locations

CSA Std C22.2 No. 30-M1986 - Explosion-Proof Enclosures for Use in Class I Hazardous Locations

CAN/CSA-C22.2 No. 94-M91 - Special Purpose Enclosures



 Certificate:
 1132623 (LR 82598)
 Master Contract:
 160686

 Project:
 2567317
 Date Issued:
 November 5, 2012

CSA Std C22.2 No. 142-M1987 - Process Control Equipment

CAN/CSA-C22.2 No. 157-92 - Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations

CSA Std C22.2 No. 213-M1987 - Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations

FM 3600, November 1998 - Electric Equipment for use in Hazardous Locations General Requirement

FM 3610, January 2010 - Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division 1, Hazardous Locations

FM 3615, August 2006 - Explosionproof Electrical Equipment General Requirements

FM 3810, January 2005 - Electrical Equipment for Measurement, Control and Laboratory Use



# Supplement to Certificate of Compliance

**Certificate:** 1132623

Master Contract: 160686

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

## **Product Certification History**

Project	Date	Description
2567317	November 5, 2012	Update to cover minor revision to connector pin assignment on Control Drawing.
2458350	September 14, 2011	Update to cover model suffixes correction.
2443425	August 12, 2011	Update to include certified sensors type Promass X and Promass O.
2411683	April 14, 2011	Update to cover optional Ethernet I/O options, minor documents revision as per E+H Technical Document 16th Revision.
2224663	January 12, 2010	Update to include mass flowmeters CNGmass DCI 8D** and Cubemass DCI 8C** for CSA c/us marking, remove sensors drawing and minor drawings revisions.
1997636	February 19, 2008	Update to include Amplifier v14, dwgs revisions and alt. glass cover for G05
1832956	January 21, 2008	Enclosure G12 model for hazardous locations. Legacy no. 82598
1978934	January 17, 2008	Update to cover Dual Seal Marking and minor dwgs revision
1832928	November 6, 2007	Update to Report 1132623 to add alternate enclosure G12 model for hazardous locations and minor drawings revision.
1860455	January 23, 2007	Update to cover alt. Commodul C14, exciter coils and report revisions - I.S.
1849742	November 21, 2006	Update to cover alt. sensors feed-through
1832929	October 14, 2005	Addition of alternate enclosure G12 model for hazardous locations. Legacy no. 82598
1722394	October 14, 2005	Update to cover typographical error on sensor.
1696390	September 12, 2005	Update to include alternative sensors Promass I DN51 and I DN80.
1607313	November 15, 2004	Update to report to cover minor drawings revisions - I.S. Hazardous Locations
1569253	August 24, 2004	Update to cover minor drawings revisions and G02 Feed-through for installation in Cl. I, Div. 1, Groups BCD Haz Loc (Legacy no. 82598)
1451217	September 25, 2003	Mass Flowmeters for Hazardous Locations - Update of 160686-1132623(Last Project 160686-1388808)

## History

1388808 December 11, 2002 Update to cover:1. New Commodul C10 (active/passive).2. -40°C version for Class I Div.2, Class II Div 1, Class III.3. Fieldbus connector for Class I Div 2.4. New order code.5. Sensor Promass F for pressures up to 125 bar.6. Revised drawings.

1325457 August 8, 2002 Update to cover:1. Inclusion of Promass 40E from Report 1130308.2. Addition of Promass E DN8-50 for measuring system Promass 8.3. Remote version of Promass E.4. New Sensor Promass H DN50.5. Revised and new drawings.



Certificate: 1132623

Master Contract: 160686

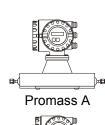
1278845 March 5, 2002 Update to cover:1. New Sensor Promass F DN 150.2. New Sensor Promass H DN8 - DN40.3. Revised construction of exciter coils for Promass M DN80 A-D version and Promass F DN80/100 A-D version.4. Alternative Connection Cable 6Li9YFCY for remote version.5. Revised drawings.6. Additional damping coil on internal conductors.7. Optional Printed Circuit Board Coating "Peters" Type SL 13.9N).8. New Version (Promass 84).

1204567 June 11, 2001 Update to cover:1. Change of relay rating from 60Vdc to 42Vdc.2. Revised drawings.

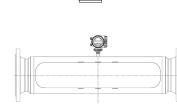
1132623 December 19, 2000 Original Certification.

#### Hazardous Locations Class I Div. 2 Groups ABCD or Class I Zone 2 Groups IIC and Class II and III Division 1 Groups EFG

Transmitter Promass 40 / 8. alternative stainless steal housing



Promass F/O

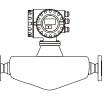


Promass X

Promass F(HT)

Promass E

Promass M



Promass H/P/S

# Ta = 60 °C

Promass 40/80/83/84 A/E/F/H/I/M/O/P/S/X

Temperature class for the compact version is T5 – T1

Range of medium temperature:

Promass A/F/F(HT)/H/O/P/S/X	: -200°C +200°C
Promass I/M	: -50°C +150°C
Promass E	: -40°C +140°C

Range of ambient temperature : -40°C ... +60°C

Temperature table		max. medium temperature							
	Т6	T5	T4	Т3	T2	T1			
Ta = 60 °C									
Promass A/E/F/H/I/M/O/P/S/X		100°C	135°C	200°C	200°C	200°C			
Promass F(HT)		100°C	135°C	200°C	300°C <sup>*)</sup>	350°C <sup>*)</sup>			

<sup>\*)</sup> Device shall be installed in such a way, that the transmitter enclosure is not located above the sensor.

Options	Control Drawing
Promass 40/80/83/84 E DN80 (optional version)	see FES 0165

Änderungen:	F	13.05.04/MDI	L	08.02.11/KLI						
	G	30.06.05/SCHK	М	01.06.11/SCHK						
	Н	15.08.06/BDA	Ν	08.08.12/BIF						
	J	05.09.07/BDA			Ersteller: FES	/ ID 1089				
	К	13.08.09/SCHK			FILE: M:\ZEIC	FILE: M:\ZEICHNG\FES0051\M\FES0051N.doc				
CSA Control Drawing Class I Division 2 /					Gezeichnet	10.12.01	MDI			
Class I Zone 2						Geprüft				
Compact version						Ex-geprüft	08.08.12	BIF		
Promass 40/80/83/84 A/E/F/H/I/M/O/P/S/X						Gesehen				
Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach						FES005	51N		1/4	

#### Notes:

日

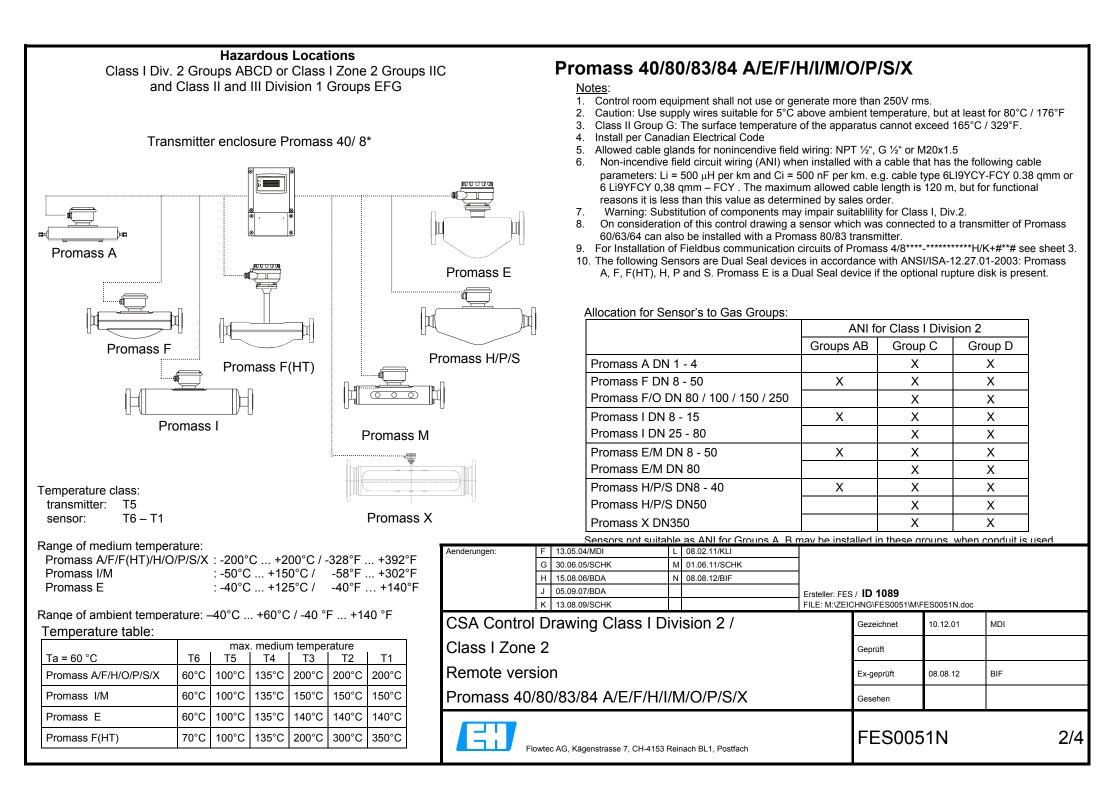
1. Control room equipment shall not use or generate more than 250V rms.

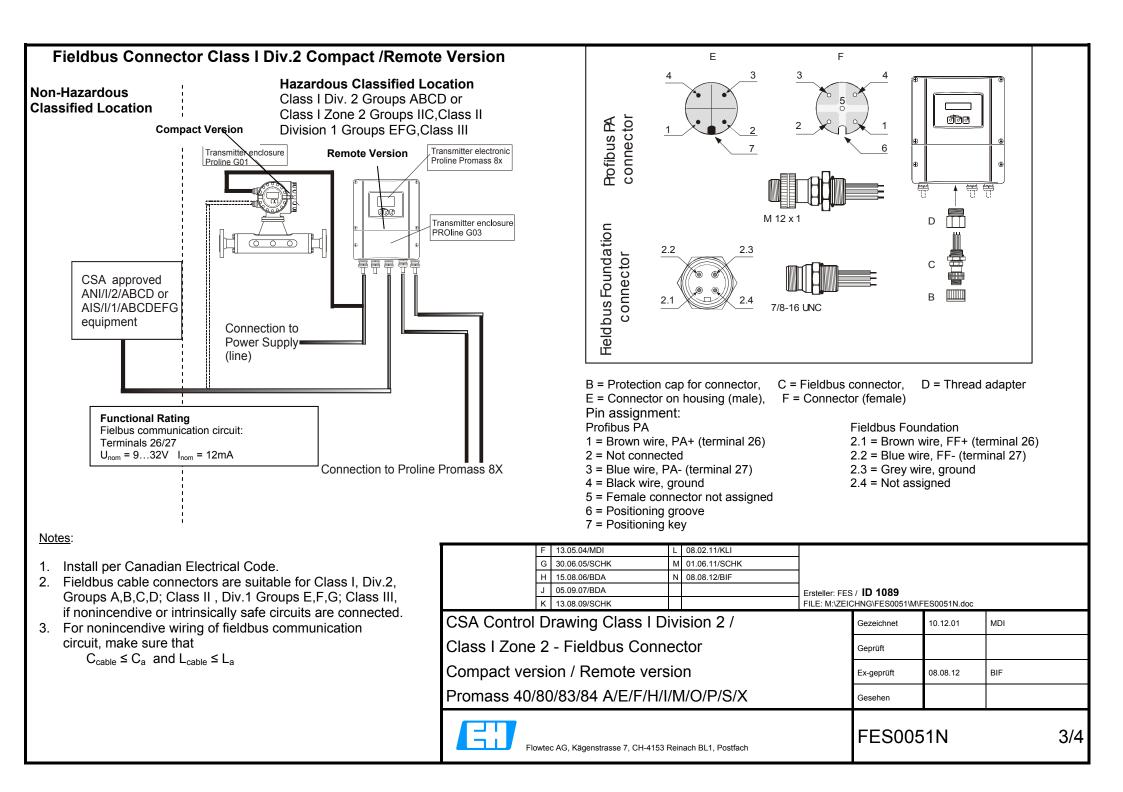
È

- 2. Caution: Use supply wires suitable for 5°C above ambient temperature, but at least for 80°C / 176°F.
- 3. Class II Group G: The surface temperature of the apparatus cannot exceed 165°C / 329°F.
- 4. Install per Canadian Electrical Code

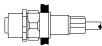
Promass I

- 5. Warning: Explosion Hazard-Substitution of components may impair suitablility for Class I, Division 2.
- 6. For Installation of Fieldbus communication circuits of Promass 4/8\*\*\*\*-\*\*\*\*\*\*\*\*\*\*\*\*H/K+#\*\*# see sheet 3.
- The following Sensors are Dual Seal devices in accordance with ANSI/ISA-12.27.01-2003: Promass A, F, F(HT), H, O, P, S and X. Promass E is a Dual Seal device if the optional rubture disk is present.

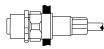




- 1) Thread: M20x1.5, NPT <sup>1</sup>/<sub>2</sub> ", NPT<sup>3</sup>/<sub>4</sub>" or G <sup>1</sup>/<sub>2</sub>"
- 2) Approved / Certiffied receptacle for process wiring for Cl.I, Div. 2



3) Listed receptacle for process wiring (general purpose)



#### Notes:

1. Class I Division 2 Groups ABCD, Class II Division 1 Groups EFG and Class III

Flow meter with cable entry M20x1.5 thread, NPT1/2" thread, NPT 3/4" thread:

- Install all per National Electrical Code CEC and use supply wires suitable for 10 °C / 18 °F above ambient temperature.
- Class II Group G: The surface temperature of the apparatus cannot exceed 165 °C / 329°F
- 2. Class I Division 2 Groups ABCD

Flow meter with FM approved receptacles (plug-in connector) suitable for Class I, Div. 2 installation:

- Install per National Electrical Code CEC
- Install tool secured guard on the conection to render the connection normally not arcing.
- 3. Class I Division 2 Groups ABCD:

Flowmeters with listed cable glands, pig tails or receptacles (plug in connector):

- The connector must not be removed when energized. Therefore the warning "Do not separate when energized" must be readable after installation.
- Install per National Electrical Code CEC
- 4. Non-hazardous classified areas:

All of the above described cable entries are suitable for installations in non-hazardous areas

• Install per National Electrical Code CEC

Component	ratings:
-----------	----------

- Wire at least AWG 28
- Dielectric strength of wire insulation at least 50 V
- Current rating of components at least 1 A
- Temperature range at least -40 °C ... +70 °C

Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach						FES005	51N		4/4
Promass 40/80/83/84 A/E/F/H/I/M/O/P/S/X						Gesehen			
						Ex-geprüft	08.08.12	BIF	
Cable entries						Geprüft			
CSA Control Drawing Class I Division 2 / Zone2					Gezeichnet	10.12.01	MDI		
	K	13.08.09/SCHK			FILE: M:/ZEICHNG/FES0051\M/FES0051N.doc				
	J	05.09.07/BDA		00.00.12.5.1	Ersteller: FES / ID 1089				
	Н	15.08.06/BDA	N	08.08.12/BIF					
	г G	30.06.05/SCHK		01.06.11/SCHK					
	F	13.05.04/MDI	L	08.02.11/KLI					