EUROMAP 17	PROTOCOL FOR COMMUNICATION BETWEEN PLASTIC PROCESSSING MACHINERY OR CENTRAL COMPUTER AND PERIPHERAL EQUIPMENT
ANNEX	PARAMETER LIST

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This recommendation was prepared by the Working Group "Electronic Control of Injection Moulding Machines" of EUROMAP.

Contents

Abbreviations:

R : read only
W : write only
R/W : read or write
C1 C2 : mnemonics of parameter
m.s. : manufacturer specific

Application of parameter list:

0. Mnemonics for all different Peripheral Equipment

C1	C2	R W	Description
C	N	R	active channel numbers, upload with block transfer
D	I	R	device identification, upload with block transfer
D	M	R	device mnemonics, upload of mnemonics of implemented parameters of EUROMAP 17, upload with block transfer
D	E	R	device extension, upload of mnemonics of manufacturer specific parameters, upload with block transfer
U	L	R	upload of part program with block transfer from peripheral equipment
D	L	W	download of part program with block transfer to peripheral equipment
U	O	R	upload of operating system with block transfer from peripheral equipment
D	O	W	download of operating system with block transfer to peripheral equipment
U	P	R	upload of device parameter values with block transfer from peripheral equipment
D	P	W	download of device parameter values with block transfer to peripheral equipment
U	E	R	upload of error messages with block transfer from peripheral equipment, ASCII characters only
U	N	R/W	units, metric or imperial
F	F	R	standard question, standard answer
P	J	R	check if program name in D1 ... D8 is available on injection moulding machine
A	J	W	program name of P J is available on injection moulding machine, D1 ... D8 = 1 for yes, = 0 for no

C1	C2	R W	Description
P	S	W	check if program name in D1 ... D8 is available on device
A	S	R	program name of P S is available on device, D1 ... D8 = checksum for yes, = 0 for no
C	K	R	checksum of last uploaded program
A	N	R/W	active program name

1. Temperature Controllers, Hot Runner Controllers, Heating/Cooling Equipment and Chillers

1.1 Temperature Controllers, Hot Runner Controllers and Heating Cooling Equipment

(separated device address)
channel number N1 N2 = 0 0 ... 9 9 can be used

C1	C2	R W	Units	Description
S	A	R/W	°C, °F	first setpoint of temperature
S	B	R/W	°C, °F	second setpoint of temperature
R	R	R/W	°C/min, °F/min	ramp rate, alternatively to R T
R	T	R/W	min, min	ramp time, alternatively to R R
P	V	R	°C, °F	actual value, process value of temperature
C	O	R	%, %	controller output (100 % ... +100 %)
H	P	R/W	%, %	heating proportional band
H	I	R/W	min, min	heating integral time
H	D	R/W	min, min	heating derivative time
H	C	R/W	s, s	heating cycle time
C	P	R/W	%, %	cooling proportional band
C	I	R/W	min, min	cooling integral time
C	D	R/W	min, min	cooling derivative time
C	C	R/W	s, s	cooling cycle time
D	B	R/W	°C, °F	dead band, neutral zone
U	A	R/W	°C, °F	upper limit alarm value
L	A	R/W	°C, °F	lower limit alarm value
U	D	R/W	°C, °F	upper deviation alarm value
L	D	R/W	°C, °F	lower deviation alarm value
M	O	R/W	%, %	maximum output
S	O	R/W	%, %	safety output for open loop control
U	C	R/W	A, Amp.	upper absolute current
L	C	R/W	A, Amp.	lower absolute current
A	C	R	A, Amp.	actual current, alternatively to A P

C1	C2	R W	Units	Description
A	P	R	KW, KW	actual power consumption alternatively to A C
T	D	R	°C, °F	actual temperature difference between inlet and outlet
A	D	R/W	°C, °F	limit alarm of temperature difference between inlet and outlet
S	W	R		status word bit 0 = 1 processing yes, = 0 no bit 1 = 1 P : process alarm bit 2 = 1 M : machine alarm : alarm of peripheral equipment`s hardware (electrical, mechanical, pneumatical etc.) bit 3 = 1 controller failure (M) bit 4 = 1 upper limit alarm active (P) bit 5 = 1 lower limit alarm active (P) bit 6 = 1 upper deviation alarm active (P) bit 7 = 1 lower deviation alarm active (P) bit 8 = 1 heater failure (M) bit 9 = 1 low level of fluid for mould temperature controller (M) bit 10= 1 pump failure for mould temperature controller (M) bit 11= 1 sensor failure (M) bit 12= 1 mains failure (M) bit 13= 1 current alarm (M) bit 14= 1 temperature difference alarm (P) bit 15= 1 remote operation, = 0 local operation bit 16= 1 controller active, = 0 non active (switch on, off for mould temperature controller) bit 17= 1 outputs zero, indication of temperature only, = 0 outputs enabled bit 18= 1 self tuning active, = 0 non active bit 19= 1 second setpoint active, = 0 non active bit 20= 1 open loop control active, = 0 non active bit 21= 1 heating only, = 0 heating/cooling bit 22= 1 suction mode of mould temperature controller on, = 0 off bit 23= 1 cooling channel evacuation of mould temperature controller on, = 0 off bit 24= 1 mould sensor for mould temperature controller active, = 0 non active

				bit 25= 1 sensor break reaction:output on, = 0 output off bit 26= 1 sensor break reaction:predefined safety output, = 0 last output bit 27 ... 31 manufacturer specific (There is no alarm suppression on the peripheral equipment used. Every alarm of the peripheral equipment must be transferred. If bit 0 = 1, bit 1 = 0 and bit 2 = 0 the device is working correctly for the process.)
C1	C2	R W	Units	Description
M	W	W		mode word bit 0 = 1 controller active, = 0 non active (switch on, off for mould temperature controller) bit 1 = 1 outputs zero, indication of temperature only, = 0 outputs enabled bit 2 = 1 start self tuning bit 3 = 1 stop self tuning bit 4 = 1 second setpoint active, = 0 non active bit 5 = 1 open loop control active, = 0 non active bit 6 = 1 heating only, = 0 heating/cooling bit 7 = 1 suction mode of mould temperature controller on, = 0 off bit 8 = 1 start cooling channel evacuation of mould temperature controller bit 9 = 1 mould sensor for mould temperature controller active, = 0 non active bit 10= 1 sensor break reaction:output on, = 0 output off bit 11= 1 sensor break reaction:predefined safety output, = 0 last output bit 16 ... 31 manufacturer specific

1.2 Chillers
(separated device address)
channel number N1 N2 = 0 0 ... 9 9 can be used

C1	C2	R W	Units	Description
S	A	R/W	°C, °F	setpoint of water temperature at the outlet of the evaporator
S	B	R/W	°C, °F	setpoint of water temperature for a second circuit
U	F	R/W	°C, °F	upper deviation alarm value for the outlet of the evaporator
L	F	R/W	°C, °F	lower deviation alarm value for the outlet of the evaporator
U	S	R/W	°C, °F	upper deviation alarm value for a second circuit
L	S	R/W	°C, °F	lower deviation alarm value for a second circuit
A	I	R/W	°C, °F	setpoint of antiicing temperature of water
A	F	R/W	°C, °F	setpoint for start up of the pump for antifreezing of water
T	A	R/W	min, min	setpoint of time for the pump for antifreezing
A	A	R	°C, °F	actual value of ambient temperature at the chiller
A	C	R	°C, °F	actual value of air temperature out of the condenser
G	C	R	°C, °F	actual value of temperature of the gas out of the condenser
G	E	R	°C, °F	actual value of temperature of the gas at the inlet of the evaporator
G	O	R	°C, °F	actual value of temperature of the gas at the outlet of the evaporator
G	M	R	°C, °F	actual value of temperature of the gas at the inlet of the compressor
G	P	R	°C, °F	actual value of temperature of the gas at the outlet of the compressor
W	E	R	°C, °F	actual value of temperature of the water at the inlet of the evaporator
W	O	R	°C, °F	actual value of temperature of the water at the outlet of the evaporator

C1	C2	R W	Units	Description
W	I	R	°C, °F	actual value of temperature of the water at the inlet of the condensor
W	C	R	°C, °F	actual value of temperature of the water at the outlet of the condenser
P	C	R	bar, psi	actual value of pressure of the gas at the outlet of the condenser
P	E	R	bar, psi	actual value of pressure of the gas at the inlet of the evaporator
P	O	R	bar, psi	actual value of pressure of the gas at the outlet of the evaporator
P	M	R	bar, psi	actual value of pressure of the gas at the inlet of the compressor
P	P	R	bar, psi	actual value of pressure of the gas at the outlet of the compressor
P	I	R	bar, psi	actual value of pressure of the water at the inlet of the evaporator
P	U	R	bar, psi	actual value of pressure of the water at the outlet of the evaporator
P	N	R	bar, psi	actual value of pressure of the water at the inlet of the condenser
P	D	R	bar, psi	actual value of pressure of the water at the outlet of the condenser

C1	C2	R	W	Units	Description
S	W	R			status word bit 0 = 1 processing yes, = 0 no bit 1 = 1 P : process alarm bit 2 = 1 M : machine alarm : alarm of peripheral equipment`s hardware (electrical, mechanical, pneumatical etc.) bit 3 = 1 controller failure (M) bit 4 = 1 upper deviation alarm for the water temperature at the outlet of the evaporator active (P) bit 5 = 1 lower deviation alarm for the water temperature at the outlet of the evaporator active (P) bit 6 = 1 upper deviation alarm of a second circuit active (P) bit 7 = 1 lower deviation alarm of a second circuit active (P) bit 8 = 1 sensor failure of water temperature (M) bit 9 = 1 sensor failure of water pressure pressure (M) bit 10= 1 flow switch alarm for water (M) bit 11= 1 low level alarm for water tank (M) bit 12= 1 low gas pressure (M) bit 13= 1 high gas pressure (M) bit 14= 1 thermoswitch of compressor (M) bit 15= 1 thermoswitch of fan (M) bit 16= 1 thermoswitch of main water pump (M) bit 17= 1 thermoswitch of water pump of first circuit (M) bit 18= 1 thermoswitch of water pump of second circuit (M) bit 19= 1 safety pump active (M) bit 20= 1 sensor failure for antiicing (M) bit 21= 1 sensor failure for ambient temperature (M) bit 22=1 low temperature alarm of compressor (M) bit 23= 1 remote operation, = 0 local operation bit 24 = 1 on, = 0 off bit 25 ... 31 manufacturer specific (There is no alarm suppression on the peripheral equipment used. Every alarm of the peripheral equipment must be transferred. If bit 0 = 1, bit 1 = 0 and bit 2 = 0 the device is working correctly for the process.)
M	W	W			mode word bit 0 = 1 on, = 0 off bit 16 ... 31 manufacturer specific

2. Dryers, Drying Bins, Dosing and Mixing Units, Material Feeding Systems and Silo Systems

2.1 Dryers

(same device address as drying bins,
central control: channel number N1 N2 = 0 0
dryers : channel number N1 N2 = 0 1 ... 0 9)

C1	C2	R W	Units	Description
T	O	R/W	°C, °F	setpoint temperature out of dryer
T	D	R/W	°C, °F	setpoint dewpoint temperature
T	B	R/W	°C, °F	setpoint temperature inlet dessicant bed
A	O	R	°C, °F	actual temperature out of dryer
D	D	R	°C, °F	actual dewpoint out of dryer
A	B	R	°C, °F	actual temperature back to dryer
D	B	R	°C, °F	actual dewpoint back to dryer
A	D	R	°C, °F	actual temperature inlet dessicant bed
A	F	R	m^3/h,cfm	actual airflow out of dryer
S	W	R		status word bit 0 = 1 processing yes, = 0 no bit 1 = 1 process alarm bit 2 = 1 machine alarm : alarm of peripheral equipment`s hardware (electrical, mechanical, pneumatical etc.) bit 15= 1 remote operation, = 0 local operation bit 16= 1 on, = 0 off bit 17 ... 31 manufacturer specific (There is no alarm suppression on the peripheral equipment used. Every alarm of the peripheral equipment must be transferred. If bit 0 = 1, bit 1 = 0 and bit 2 = 0 the device is working correctly for the process.)
M	W	W		mode word bit 0 = 1 on, = 0 off bit 16 ... 31 manufacturer specific

2.2 Drying Bins
(same device address as dryers,
channel number N1 N2 = 1 0 ...9 9)

C1	C2	R W	Units	Description
D	A	R/W	°C, °F	setpoint of dry air temperature
R	A	R/W	°C, °F	setpoint of return air temperature
D	T	R/W	min, min	setpoint of drying time
T	P	R/W	kg/h, lbs/h	setpoint of throughput per hour
M	I	R/W		setpoint of material identification, inlet
M	O	R/W		setpoint of material identification, outlet
B	D	R/W	kg/dm3, lbs/inch3	setpoint of bulk density
T	M	R	°C, °F	actual material temperature
A	M	R	%, %	actual moisture
A	A	R	°C, °F	actual dry air temperature
A	R	R	°C, °F	actual return air temperature
R	T	R	min, min	actual remaining drying time
S	W	R		status word bit 0 = 1 processing yes, = 0 no bit 1 = 1 P : process alarm bit 2 = 1 M : machine alarm : alarm of peripheral equipment`s hardware (electrical, mechanical, pneumatical etc.) bit 3 = 1 (dryed) material not ready, = 0 ready (P) bit 15= 1 remote operation, = 0 local operation bit 16= 1 on, = 0 off bit 17= 1 material feeding outlet on, = 0 off bit 18 ... 31 manufacturer specific (There is no alarm suppression on the peripheral equipment used. Every alarm of the peripheral equipment must be transferred. If bit 0 = 1, bit 1 = 0 and bit 2 = 0 the device is working correctly for the process.)
M	W	W		mode word bit 0 = 1 on, = 0 off bit 1 = 1 material feeding outlet on, = 0 off bit 16 ... 31 manufacturer specific

2.3 Dosing and Mixing Units
(separated device address)

mixing unit N1 N2 = 0 0
scale N1 N2 = 0 1 ... 09
dosing unit N1 N2 = 1 0 ... 99
(first digit represents the corresponding scale)

C1	C2	R W	Units	Description
P	W	R/W	%, %	setpoint of percentage of weight
W	V	R/W	g, oz	setpoint of weight per volume
W	S	R/W	g, oz	setpoint of weight per shot for mixing unit
P	T	R/W	s, s	setpoint of plasticizing time of injection moulding machine for mixing unit
B	S	R/W	kg, lbs	setpoint of total batch size for mixing unit
M	T	R/W	s, s	setpoint of mixing time for mixing unit
M	C	R/W	kg, lbs	actual material consumption
M	I	R/W		setpoint of material identification, inlet
R	E	R/W		setpoint of recipe for mixing unit, outlet
F	M	R/W	kg, lbs	setpoint of start up weight of free flowing material
T	O	R/W	kg, lbs	setpoint of tolerance for gravimetric system
D	R	R/W	kg/h, lbs/h	setpoint of dosing ratio for gravimetric system
H	L	R/W	kg, lbs	setpoint of heel for gravimetric system
H	T	R/W	s,s	setpoint of heel time for gravimetric system
F	D	R/W	kg, lbs	setpoint of fine dosing for gravimetric system
L	W	R/W	kg, lbs	setpoint of low level weight for gravimetric system
D	T	R/W	s, s	setpoint of discharge time after low level indication for gravimetric system
M	P	R/W	s, s	setpoint of material prefeeding time for gravimetric system
S	R	R	kg, lbs	scale range for gravimetric system

C1	C2	R	W	Units	Description
S	W	R			status word bit 0 = 1 processing yes, = 0 no bit 1 = 1 P : process alarm bit 2 = 1 M : machine alarm : alarm of peripheral equipment`s hardware (electrical, mechanical, pneumatical etc.) bit 3 = 1 material not ready, = 0 ready (P) bit 15= 1 remote operation, = 0 local operation bit 16= 1 on, = 0 off bit 17= 1 level sensor active, = 0 non active bit 18 ... 31 manufacturer specific (There is no alarm suppression on the peripheral equipment used. Every alarm of the peripheral equipment must be transferred. If bit 0 = 1, bit 1 = 0 and bit 2 = 0 the device is working correctly for the process.)
M	W	W			mode word bit 0 = 1 on, = 0 off bit 1 = 1 level sensor active, = 0 non active bit 16 ... 31 manufacturer specific

2.4 Material Feeding Systems
(seperated device address for every system)

2.4.1 Hopper Loaders
(same device address as affiliated central material feeding system, channel number N1 N2 = 0 1 ...9 9)

C1	C2	R W	Units	Description
L	T	R/W	s, s	setpoint of loading time
F	T	R/W	s, s	setpoint of filter cleaning time
E	T	R/W	s, s	setpoint of loader emptying time
P	T	R/W	s, s	setpoint of purging time for cleaning tubes (timer starts after loading time)
N	L	R/W		setpoint of number of layers per loading time
P	R	R/W	%, %	setpoint of percentage of regrind (total 100 %)
P	A	R/W	%, %	setpoint of percentage of additional material (total 100 % % of regrind)
L	A	R/W	kg, lbs	setpoint of loading amount per cycle for gravimetric loaders
M	V	R/W		setpoint of material identification for virgin material, inlet
M	R	R/W		setpoint of material identification for regrind, inlet
M	A	R/W		setpoint of material identification for additional material, inlet
R	E	R/W		setpoint of recipe, outlet
T	P	R/W	kg/h, lbs/h	setpoint of throughput per hour
M	C	R	kg, lbs	actual value of total material consumption since material change
S	W	R		status word bit 0 = 1 processing yes, = 0 no bit 1 = 1 process alarm bit 2 = 1 machine alarm : alarm of peripheral equipment`s hardware (electrical, mechanical, pneumatical etc.) bit 15= 1 remote operation, = 0 local operation bit 16= 1 on, = 0 off bit 17= 1 material change started bit 18 ... 31 manufacturer specific

				(There is no alarm suppression on the peripheral equipment used. Every alarm of the peripheral equipment must be transferred. If bit 0 = 1, bit 1 = 0 and bit 2 = 0 the device is working correctly for the process.)
M	W	W		mode word bit 0 = 1 on, = 0 off bit 1 = 1 start material change bit 16 ... 31 manufacturer specific

2.4.2 Central Material Feeding Systems
(same device address as affiliated hopper loaders, channel number N1 N2 = 0 0)

C1	C2	R W	Units	Description
R	E	R/W		setpoint of recipe, outlet to injection moulding machine, (must be value of next recipe after SW bit 3 = 0 next material available and MW bit 1 = 1 material feeding outlet on)
R	N	R/W		setpoint of next recipe, outlet to injection moulding machine, (must be set to 0 or next value as for R E)
T	P	R/W	kg/h lbs/h	setpoint of throughput per hour for actual recipe
T	N	R/W	kg/h lbs/h	setpoint of throughput per hour for next recipe
M	C	R	kg, lbs	actual value of total material consumption since material change
M	R	R	kg, lbs	value of total material consumption of last recipe
T	M	R	°C, °F	actual material temperature
A	M	R	%, %	actual moisture

C1	C2	R	W	Units	Description
S	W	R			status word bit 0 = 1 processing yes, = 0 no bit 1 = 1 P : process alarm bit 2 = 1 M : machine alarm : alarm of peripheral equipment`s hardware (electrical, mechanical, pneumatical etc.) bit 3 = 1 next material not available, = 0 available (P) bit 4 = 1 low level alarm of silo (P) bit 5 = 1 high level alarm of silo (silo no. with channel no.) (P) bit 15= 1 remote operation, = 0 local operation bit 16= 1 material feeding outlet on, = 0 off bit 17= 1 material change started (pipe cleaning, preparation for material change, signal before material feeding off) bit 18 ... 31 manufacturer specific (There is no alarm suppression on the peripheral equipment used. Every alarm of the peripheral equipment must be transferred. If bit 0 = 1, bit 1 = 0 and bit 2 = 0 the device is working correctly for the process.)
M	W	W			mode word bit 0 = 1 on, = 0 off bit 1 = 1 material feeding outlet on, = 0 off bit 2 = 1 start material change (pipe cleaning, preparation for material change) bit 16 ... 31 manufacturer specific

2.5 Silo Systems

(seperated device address for every system)

2.5.1 Silo

(central system : channel number N1 N2 = 0 0,
silo : channel number N1 N2 = 0 1 ... 99)

C1	C2	R W	Units	Description
R	O	R/W		setpoint of recipe, outlet of silo
L	H	R	m, feet	actual height of silo level
V	P	R	%, %	actual percentage of volume in silo
W	M	R	kg, lbs	actual weight of material in silo
B	D	R/W	kg/dm3, lbs/inch^3	setpoint of bulk density
S	C	R	m^3, ft^3	silo capacity
H	L	R/W	%, %	setpoint of high level
L	L	R/W	%, %	setpoint of low level
S	W	R		status word bit 0 = 1 processing yes, = 0 no bit 1 = 1 P : process alarm bit 2 = 1 M : machine alarm : alarm of peripheral equipment`s hardware (electrical, mechanical, pneumatical etc.) bit 3 = 1 max. level alarm for safety (P) bit 4 = 1 high level alarm (P) bit 5 = 1 low level alarm (P) bit 6 = 1 empty level alarm (P) bit 7 = 1 silo pilot active bit 15= 1 remote operation, = 0 local operation bit 16= 1 on, = 0 off bit 17= 1 silo pilot started bit 18 ... 31 manufacturer specific (There is no alarm suppression on the peripheral equipment used. Every alarm of the peripheral equipment must be transferred. If bit 0 = 1, bit 1 = 0 and bit 2 = 0 the device is working correctly for the process.)
M	W	W		mode word bit 0 = 1 on, = 0 off bit 1 = 1 start silo pilot bit 16 ... 31 manufacturer specific

3. Handling Devices, Automatic Mould Changing Systems

3.1 Handling Devices
(separated device address)

C1	C2	R W	Units	Description
A	C	W	mm, inch	actual clamp position of injection moulding machine
A	E	W	mm, inch	actual ejector position of injection moulding machine
S	C	W	mm/s, inch/s	setpoint of clamp opening speed of injection moulding machine
S	E	W	mm/s inch/s	setpoint of ejector forward speed of injection moulding machine
N	P	W		number of parts for job
F	I	W		failure number of injection moulding machine
A	W	R/W	g, oz	actual weight of shot, part or parts
A	D	R/W	mm, inch	actual dimension of part
Q	A	R/W	m.s.	additional quality parameter 1
Q	B	R/W	m.s.	additional quality parameter 2
Q	C	R/W	m.s.	additional quality parameter 3
Q	D	R/W	m.s.	additional quality parameter 4
N	G	R/W		number of good parts
P	X	R	mm, inch	actual position of X axis of handling device
P	Y	R	mm, inch	actual position of Y axis of handling device
P	Z	R	mm, inch	actual position of Z axis of handling device
P	A	R	°, °	actual position of A axis of handling device
P	B	R	°, °	actual position of B axis of handling device
P	C	R	°, °	actual position of C axis of handling device

C1	C2	R	W	Units	Description
P	D	R		m.s.	actual additional position 1
P	E	R		m.s.	actual additional position 2
P	F	R		m.s.	actual additional position 3
P	G	R		m.s.	actual additional position 4
F	H	R			failure number of handling device
T	H	R		s, s	last cycle time of handling device
M	H	R			mould code detected by handling device
G	H	R			gripper code detected by handling device
R	H	R			handling device program name detected by handling device
I	H	R			injection moulding machine program name detected by handling device
M	I	W			mould code detected by injection moulding machine
G	I	W			gripper code detected by injection moulding machine
R	I	W			handling device program name detected by injection moulding machine
I	I	W			injection moulding machine program name detected by injection moulding machine

C1	C2	R	W	Units	Description
S	W	R			status word bit 0 = 1 processing yes, = 0 no bit 1 = 1 process alarm bit 2 = 1 machine alarm : alarm of peripheral equipment`s hardware (electrical, mechanical, pneumatical etc.) bit 3 = 1 manual bit 4 = 1 automatic bit 5 = 1 home position reached bit 6 = 1 download of every new part program selected, = 0 not selected bit 15= 1 remote operation, = 0 local operation bit 16= 1 interruption of production on injection moulding machine activated bit 18= 1 peripheral equipment cleared bit 19= 1 cycle started after automatic mould change bit 20= 1 stopped at end of cycle bit 21= 1 alarm of injection moulding machine activated bit 22= 1 mould change started bit 23 ... 31 manufacturer specific (There is no alarm suppression on the peripheral equipment used. Every alarm of the peripheral equipment must be transferred. If bit 0 = 1, bit 1 = 0 and bit 2 = 0 the device is working correctly for the process.)
M	W	W			mode word bit 0 = 1 interruption of production on injection moulding machine bit 1 = 1 clear peripheral equipment bit 2 = 1 start cycle after automatic mould change bit 3 = 1 stop at end of cycle bit 4 = 1 alarm of injection moulding machine bit 5 = 1 start mould change bit 16 ... 31 manufacturer specific

3.2 Automatic Mould Changing Systems
(separated device address)

C1	C2	R W	Units	Description
M	A	W		actual machine number
M	O	W		actual mould number on machine
T	E	W		actual time until end of job
N	M	R/W		next mould number
T	P	R/W	min, min	setpoint of preheating time
H	T	R/W	°C, °F	setpoint of hot runner temperature (for more than one temperature use channel number)
L	T	R/W	°C, °F	setpoint of fluid temperature (for more than one temperature use channel number)
S	W	R		status word bit 0 = 1 processing yes, = 0 no bit 1 = 1 P : process alarm bit 2 = 1 M : machine alarm : alarm of peripheral equipment`s hardware (electrical, mechanical, pneumatical etc.) bit 3 = 1 mould changing system busy bit 4 = 1 mould not available (P) bit 5 = 1 preheating of mould ended bit 6 = 1 preheating failure (P) bit 7 = 1 preheating station 1 bit 8 = 1 preheating station 2 bit 9 = 1 preheating station 3 bit 10= 1 preheating station 4 bit 11= 1 preheating station 5 bit 12= 1 preheating station 6 bit 13= 1 preheating station 7 bit 14= 1 preheating station 8 bit 15= 1 preheating station 9 bit 16= 1 preheating station 10 bit 17= 1 preheating station 11 bit 18= 1 preheating station 12

				bit 19= 1 remote operation, = 0 local operation bit 20= 1 mould change started with preheating bit 21= 1 mould change started without preheating bit 22= 1 moving mould to service station bit 23= 1 actual mould change cancelled bit 24= 1 preheating interrupted, moving mould to machine bit 25= 1 removing mould from machine to storage bit 26= 1 machine not ready for mould change, = 0 machine ready bit 27 ... 31 manufacturer specific (There is no alarm suppression on the peripheral equipment used. Every alarm of the peripheral equipment must be transferred. If bit 0 = 1, bit 1 = 0 and bit 2 = 0 the device is working correctly for the process.)
C1	C2	R W	Units	Description
M	W	W		mode word bit 0 = 1 start mould change with preheating bit 1 = 1 start mould change without preheating bit 2 = 1 move mould to service station bit 3 = 1 cancel actual mould change bit 4 = 1 interrupt preheating, move mould to machine bit 5 = 1 remove mould from machine to storage bit 16 ... 31 manufacturer specific

4. Equipment for on line Quality Control (weight, dimension, colour, brightness)

(separated device address)

C1	C2	R W	Units	Description
A	W	R	g, oz	actual weight of shot, part or parts
D	A	R	mm, inch	actual dimension 1 of part
D	B	R	mm, inch	actual dimension 2 of part
D	C	R	mm, inch	actual dimension 3 of part
D	D	R	mm, inch	actual dimension 4 of part
D	F	R	mm, inch	actual dimension 5 of part
D	G	R	mm, inch	actual dimension 6 of part
D	H	R	mm, inch	actual dimension 7 of part
D	K	R	mm, inch	actual dimension 8 of part
C	A	R	m.s.	actual colour value 1
C	B	R	m.s.	actual colour value 2
C	C	R	m.s.	actual colour value 3
B	R	R	m.s.	actual brightness
Q	A	R	m.s.	additional quality parameter 1
Q	B	R	m.s.	additional quality parameter 2
Q	C	R	m.s.	additional quality parameter 3
Q	D	R	m.s.	additional quality parameter 4
Q	E	R	m.s.	additional quality parameter 5
Q	F	R	m.s.	additional quality parameter 6
Q	G	R	m.s.	additional quality parameter 7
Q	H	R	m.s.	additional quality parameter 8
N	P	W		number of parts for job
F	I	W		failure number of injection moulding machine
N	G	R/W		number of good parts

C1	C2	R	W	Units	Description
N	R	R			number of rejected parts
F	H	R			failure number of quality control device
I	H	R			injection moulding machine program number detected by quality control device
R	I		W		quality control device program number detected by injection moulding machine
S	W	R			status word bit 0 = 1 processing yes, = 0 no bit 1 = 1 process alarm bit 2 = 1 machine alarm : alarm of peripheral equipment`s hardware (electrical, mechanical, pneumatical etc.) bit 3 = 1 data valid bit 15= 1 remote operation, = 0 local operation bit 16= 1 on, = 0 off bit 17= 1 calibration activated, = 0 not activated bit 18 ... 31 manufacturer specific (There is no alarm suppression on the peripheral equipment used. Every alarm of the peripheral equipment must be transferred. If bit 0 = 1, bit 1 = 0 and bit 2 = 0 the device is working correctly for the process.)
M	W		W		mode word bit 0 = 1 on, = 0 off bit 1 = 1 start calibration, = 0 no bit 16 ... 31 manufacturer specific

EUROMAP

Europäisches Komitee der Hersteller von Kunststoff- und Gummimaschinen

European Committee of Machinery Manufacturers for the Plastics and Rubber Industries

Comité Européen des Constructeurs de Machines pour Plastiques et Caoutchouc

Comitato Europeo Costruttori Macchine per Materie Plastiche e Gomma

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